KARDİYOVASKÜLER AKADEMİ KONGRESİ
&
INTERNATIONAL ACADEMY OF YOUNG CARDIOLOGISTS
CUMHURİYETİMİZİN
2023 | 100
1923 2023
20-24 EYLÜL 2023
ELEXUS HOTEL GİRNE, K.K.T.C.

# KURULLAR

## Kardiyovasküler Akademi Derneği Başkanı

Prof. Dr. Ömer Kozan

## KVAK 2023 Kongre Başkanı

Prof. Dr. Nihan Turhan Çağlar

## Kongre Bilim Kurulu Başkanları

Prof. Dr. Aylin Yıldırır
Doç. Dr. Özgür Kırbaş
Doç. Dr. Şeyda Günay
Doç. Dr. Veysel Özgür Barış

## IAYC Kongre Başkanı

Prof. Dr. Mehdi Zoghi

## KVAK 2023 Bilim Kurulu

| | |
|---|---|
| Berkay Ekici | Mesut Demir |
| Beytullah Çakal | Oğuzhan Birdal |
| Burak Ayça | Oktay Ergene |
| Cengiz Şabanoğlu | Oktay Gülcü |
| Çiğdem İleri Doğan | Omaç Tüfekçioğlu |
| Duygu İnan | Onur Taşar |
| Emine Altuntaş | Ömer Kozan |
| Emrah Erdoğan | Özge Çetinaslan |
| Erkan Baysal | Özgür Karcıoğlu |
| Fatih Yılmaz | Özlem Arıcan Özlük |
| Gamze Yeter Aslan | Pınat Türker Duyuler |
| Gülay Gök | Selcen Yakar Tüllüce |
| Hakan Altay | Selvi Coşar |
| Hakan Güneş | Serkan Asil |
| Hakkı Kaya | Serkan Duyuler |
| Hasan Güngör | Sinem Çakal |
| Ilgın Karaca | Tuncay Güzel |
| İbrahim Halil İnanç | Uğur Aslan |
| Mehdi Zoghi | Yasemin Kılavuz Doğan |
| Mehmet Kaplan | *Alfabetik olarak sıralanmıştır.* |

# KARDiYOVASKÜLER AKADEMi KONGRESi

## & INTERNATIONAL ACADEMY of YOUNG CARDIOLOGISTS

**CUMHURIYETIMIZIN**
2023 | 100 1923 2023

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## 20 EYLÜL 2023, *Çarşamba*

## 100. YIL SALONU

**14:30-15:15** **Hipertansiyonda Tedavisinde Gri Noktalar**
*Oturum Başkanları:* Oktay Ergene, Özlem Arıcan Özlük
*Panelistler:* Selvi Öztaş, Serhat Çalışkan, Sibel Çatalkaya, Gamze Yeter Aslan

Kan Basıncı Kontrolünü Sıkı Mı Yapalım, Ilımlı mı? - *Sinem Çakal*
TA Holterde Arada Kalınanlar - *Ferit Böyük* 🎥
Genç Hipertansif Hastayı Sekonder Hipertansiyonda Açısından Nasıl Tarayalım? - *Kaan Okyay*

**15:15-15:30** **KAHVE ARASI**

**15:30-16:15** **Gebelik ve Hipertansiyonda Bilinmesi Gerekenler**
*Oturum Başkanları:* Aylin Yıldırır, Murat Sucu
*Panelistler:* Sidar Aydın, Gül İlayda Berk, Füsun Küçükbasmacı

Gestasyonel Hipertansiyon - *Özgür Kırbaş* 🎥
Gebelikte Kronik Hipertansiyon Yönetimi - *Selvi Öztaş*
Emziren Hastada Hipertansiyon Yönetimi - *Lale Dinç Asarcıklı*

**16:15-17:00** **Dirençli Hipertansiyonda…**
*Oturum Başkanları:* Oktay Ergene, Seda Kürklü
*Panelistler:* Yunus Erdem, Muzaffer Kahyaoğlu 🎥, Işık Tekin

İlaç Tedavisi Yeterlidir, RND Gereksizdir - *Cengiz Şabanoğlu*
İlaç Tedavisi Yanında RND Kullanırım - *Veysel Özgür Barış*

**17:00:17:30** **Kardiyolojide Ulusal ve Uluslararsı Yeterlilik Sınavları Hakkında Merak Edilenler**
*Konuşmacı:* Aylin Yıldırır

**17:30-18:00** **Açılış Töreni ve Konuşmaları**
**Bildiri Ödül Töreni**

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## 21 EYLÜL 2023, *Perşembe*

### KURS SALONU

| 08:15-09:00 | **Periferik Artere Girişim Kursu**<br>***Moderatörler:*** *Ömer Kozan, Onur Taşar*<br>***Konuşmacı:*** *Burak Ayça* |
|---|---|

### CUMHURİYET SALONU

| 08:15-09:00 | **Kardiyak MR Kursu**<br>***Konuşmacı:*** *İbrahim Altun* |
|---|---|

### 100. YIL SALONU

| 09:00-09:45 | **2022-2023, Klinik Pratiğimizi Değiştiren Çalışmalar**<br>***Oturum Başkanları:*** *Hülya Çiçekçioğlu, İbrahim Halil Tanboğa* 🎥<br>***Panelistler:*** *Regaip Zehir, Mert İlker Hayıroğlu* 🎥<br>Kalp Yetersizliği - *Yasemin Kılavuz Doğan*<br>Aritmi - *Hasan Koca*<br>İnvaziv - *Mehmet Fatih Yılmaz* |
|---|---|
| 09:45-10:15 | **UYDU SEMPOZYUM** *neutec*<br>**Hiperlipidemi Tedavisinde Hedefler, Güncel Tedavi Yaklaşımları ve Kombine Tedavinin Önemi**<br>***Oturum Başkanı:*** *Oktay Ergene*<br>***Konuşmacılar:*** *Mehdi Zoghi, Ayşe Çolak* |
| 10:15-10:45 | **KAHVE ARASI** |
| 10:45-11:30 | **Kalp Yetmezliğinde Diüretik Tedavi**<br>***Oturum Başkanları:*** *Mehdi Zoghi, Özlem Yıldırımtürk*<br>***Panelistler:*** *Ziya Apaydın, Murat Samsa, Levent Pay, Halil Fedai*<br>Diüretik Rezistansına Yaklaşım / Olmayınca Olmuyor - *Şeyda Günay*<br>Damlaya Damlaya Sel Oldu / Volüm Yükünün Non - İnvaziv Değerlendirmesi Ve Diüretik Tedavisinin (doz, iv/oral) Optimizasyonu - *Anıl Şahin*<br>GFR < 30 KY Hastası Ne İlaç Verebilirim ki? - *Tayfur Erdoğdu* |
| 11:30-12:00 | **UYDU SEMPOZYUM** Boehringer Ingelheim<br>**Yeni Bir Bakış Açısı; Jardiance ile EF'den Bağımsız Kalp Yetersizliği**<br>***Konuşmacılar:*** *Mehdi Zoghi, Ümit Yaşar Sinan* |
| 12:00 -14:00 | **ÖĞLE ARASI** |

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## 21 EYLÜL 2023, *Perşembe*

**14:00-14:45**  **SGLT2i İnhibitörlerinde 5N1K**
*Oturum Başkanları:* Berkay Ekici, Cihan Altın
*Panelistler:* Onur Aslan, Barış Düzel, Ahmet Seyfeddin Gürbüz, Serhat Karadavut

Kardiyolog Gözüyle - *Selma Kenar Tiryakioğlu* 🎥
Endokrinolog Gözüyle - *Mustafa Araz*
Nefrolog Gözüyle - *Şeref Rahmi Yılmaz*

**14:45-15:15**  **UYDU SEMPOZYUM**                                         ◆ MicroPort

**Kateter Labaratuarında MicroPort**
*Konuşmacılar:* Oktay Ergene, Öner Özdoğan

**15:15-15:30**  **KAHVE ARASI**

**15:30-16:00**  **UYDU SEMPOZYUM**                                         AstraZeneca

**Forziga Tedavisinde 1=3**
*Konuşmacılar:* Nihan Turhan Çağlar, Hakkı Kaya

**16:00-16:30**  **UYDU SEMPOZYUM**                                         OMRON

**"İşin doğrusu…"**
*Moderatör:* Oktay Ergene
*Konuşmacı:* Sadi Güleç

**16:30-16:45**  **KAHVE ARASI**

**16:45-17:15**  **Kardiyovasküler Korunmada…**
*Oturum Başkanları:* Çetin Erol, Ahmet Karagöz
*Panelistler:* İpek Büber 🎥, Hacı Ahmet Kasapkara, Uğur Yuvanç

LDL Hedeflerine Ulaşmak İçin Yüksek Doz Statin Kullanırım - *Ebru Akgül Ercan*
oLDL Hedeflerine Ulaşmak İçin Orta Doz Statin Yanında Ezetimib Kullanırım - *Ayşe Çolak*

**17:15-18:00**  **Hipertrofik Kalbin Ekokardiyografi ile Değerlendirilmesi**
*Oturum Başkanları:* İrem Dinçer, Gamze Babür Güler
*Panelistler:* Gülay Gök 🎥, Duygu İnan 🎥, Emine Altuntaş, Begüm Uygur

HOKMP - *Elif Eroğlu Büyüköner*
Fabry - *Nihan Turhan Çağlar*
Amiloidoz - *Çiğdem İleri Doğan*
Atlet Kalbi - *Menekşe Gerede Uludağ*

# KARDİYOVASKÜLER AKADEMİ KONGRESİ

**&**

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## 22 EYLÜL 2023, *Cuma*

## KURS SALONU

**08:15 09:00** | **İntravasküler Koroner Görüntüleme Kursu (IVUS, OCT)**
*Konuşmacı: Emrah Erdoğan*

## CUMHURİYET SALONU

**08:15-09:00** | **TAVI Öncesi Hasta Değerlendirme Kursu (BT, EKO)**
*Moderatör: Teoman Kılıç, Can Yücel Karabay*
*Konusmacı: Veysel Özgür Barış*

## 100. YIL SALONU

**09:00-09:45** | **PKG/ AKS Sonrası Girişimi Takiben İkili Tedaviyi Sonlandırdıktan Sonra Tekli Antiplateletle Devam Etmeye Karar Verdim**
*Oturum Başkanları: Mehmet Ali Kobat, Mutlu Vural*
*Panelistler: Mehmet Aytürk, İsmail Ünğan, Mehmet Aydoğan*

Klopidogrel ile Devam Ederim - *Taner Şen*
Ticagrelor ile Devam Ederim - *Sedat Kalkan*

**09:45-10:15** | **UYDU SEMPOZYUM**
**AF Manşet**
*Moderatör: Ömer Akyürek*
*Konuşmacılar: Veysel Oktay, Taner Şeker*

BAYER

**10:15-10:45** | **KAHVE ARASI**

**10:45-11:30** | **DAPT Süresi Değişti mi?**
*Oturum Başkanları: Ömer Kozan, Onur Taşar*
*Panelistler: Oğuzhan Birdal, Selçuk Öztürk, Mustafa Yenerçağ, Ahmet Çağdaş Yumurtaş* 🎥

AKS'da - *Ömer Kertmen*
Kronik Koroner Sendromda - *Hacı Ali Kürklü*
Eskelasyon/Deeskalasyon Ne Zaman? - *Özge Turgay Yıldırım*
Antikoagulan ile Hangi Antiplatelet, Ne Kadar Süre (AKS/KKS'de) - *Aylin Yıldırır*

**11:30-12:00** | **UYDU SEMPOZYUM**
**Stabil Koroner Arter Hastalığı: Tedavi Yönetimini Yeniden Düşünmek**
*Oturum Başkanı: Murat Özdemir*
*Konuşmacılar: Sadi Güleç, Öner Özdoğan*

MENARINI Türkiye

**12:00-14:00** | **ÖĞLE ARASI**

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## 22 EYLÜL 2023, *Cuma*

**14:00-14:45** **Komplike Koroner Arter Lezyonlarında Perkütan Girişimler**
*Oturum Başkanları:* Ilgın Karaca, Gönül Zeren
*Panelistler:* Çetin Mirzaoğlu, Veysel Ozan Tanık, İbrahim Halil İnanç

KAH'larında İlaç Salınımlı Balon Kullanım Önerileri ve Tekniği - *Serkan Duyuler*
Stent Restenozuna Güncel Tedavi Yaklaşımı - *Ömer Şahin*
Kalsifik Lezyonlara Yaklaşım Önerileri - *İlhan İlker Avcı*

**14:45-15:15** **UYDU SEMPOZYUM**

**Hipertansiyon Tedavisinde
'Farklı Bir Dihidropiridin'
3 Farklı Bakış**

Kardiyolog Gözüyle - *Sadi Güleç*
Endokrinolog Gözüyle - *Mine Adaş*
Nefrolog Gözüyle - *Mustafa Arıcı*

**15:15-15:30** **KAHVE ARASI**

**15:30-16:00** **UYDU SEMPOZYUM**

**Kardiyovasküler Hastalıkların Tedavisinde Olmazsa Olmazlar: Tikagrelor ve Metoprolol**
*Konuşmacılar:* Ahmet Temizhan, Berkay Ekici

*AstraZeneca*

**16:00-16:45** **Vakalarla Bifurkasyon Teknikleri**
*Oturum Başkanları:* Faruk Ertaş ◼◀, İbrahim Faruk Aktürk
*Panelistler:* Özkan Karaca, Emrah Bayam, Emrah Aksakal, Aydın Rodi Tosu

Provizyonel Tercih Ettim - *Ahmet Güner*
Crush Tercih Ettim - *Pınar Türker Duyuler*
Culotte Tercih Ettim - *Emin Erdem Kaya*
TAP Tercih Ettim - *Ahmet Karaduman*

**16:45-17:00** **KAHVE ARASI**

**17:00-17:30** **ST Yükselmeli Mi İle Gelen Çok Damar Hastasında**
*Oturum Başkanları:* Aylin Yıldırır, Kudret Keskin
*Panelistler:* Ersin İbişoğlu, Mert Evlice, Taner Şeker

Culprit Lezyonu Açar, Stage Prosedür Uygularım - *Sinan İnci*
Tüm Ciddi Lezyonları Aynı Seansta Açarım - *Sefa Gül*

**17:30 -18:15** **Kalp kapak Yetmezliklerinde Girişimsel Tedavide Neredeyiz?**
*Oturum Başkanları:* Uygar Çağdaş Yüksel, Uğur Arslan
*Panelistler:* Selma Kenar Tiryakioğlu ◼◀, Mehmet Kaplan, Serdal Baştuğ, Ali Can Özkan

Aort Yetmezliği - *Hüseyin Ayhan* ◼◀
Mitral Yetmezliği - *Murat Çelik*
Triküspit Yetmezliği - *Beytullah Çakal*
Pulmoner Yetmezliği - *Serkan Asil*

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## 23 EYLÜL 2023, *Cumartesi*

### KURS SALONU

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|---|---|
| 08:15-09:00 | **Transseptal Ponksiyon Kursu**<br>***Konuşmacı:*** *Başar Candemir* |

### CUMHURİYET SALONU

| | |
|---|---|
| 08:15-09:00 | **Kalp Pili ve ICD İmplantasyon Kursu**<br>***Moderatör:*** *Mesut Demir, Emin Evren Özcan* 🎥<br>***Konuşmacı:*** *Reşit Yiğit Yılancıoğlu* 🎥 |

### 100. YIL SALONU

| | |
|---|---|
| 09:00-09:45 | **Her düşük EF'ye …**<br>***Oturum Başkanları:*** *Fethi Kılıçaslan, Erkan Baysal*<br>***Panelistler:*** *Ayhan Küp, Tuncay Güzel, Ufuk Özgül, Sedat Sakallı*<br>ICD Takarım - *İbrahim Halil İnanç*<br>ICD Takmam - *Hakkı Kaya* |
| 09:45-10:15 | **UYDU SEMPOZYUM**     *Pfizer*<br><br>**ATTR-KM'de Şüpheden Tedaviye**<br>***Moderatör:*** *Mehdi Zoghi*<br>***Konuşmacı:*** *Omaç Tüfekçioğlu* |
| 10:15-10:45 | **KAHVE ARASI** |
| 10:45-11:30 | **Aritmilerde Özel Durumlara Yaklaşım**<br>***Oturum Başkanları:*** *Emin Evren Özcan* 🎥, *Burak Hünük, Mevlüt Koç*<br>***Panelistler:*** *Kamil Gülşen* 🎥, *Günay Rehimova, İsmet Zengin, Berat Uguz*<br>Fizyolojik Pacing (His-*bundle pacing, Sol Dal Pacing, Sol Dal Pacing mi? – CRT mi? - Mevlüt Serdar Kuyumcu*<br>SVT'lerde Ne Zaman, Hangi Tedavi (Akut-kronik dönem) - *Mehmet Özgeyik*<br>Acile Akut AF ile Gelen Hastanın Yönetimi - *Mehmet Özbek* 🎥<br>KY-AF Birlikteliği - *Fahrettin Katkat* |
| 11:30-12:00 | **UYDU SEMPOZYUM**     *Pfizer*<br><br>**AF'de Güçlü Üçlü: Hekim, Hasta, Eliquis**<br>***Moderatör:*** *Oktay Ergene*<br>***Konuşmacılar:*** *Öner Özdoğan, Sinem Çakal* |
| 12:00 14:00 | **ÖĞLE ARASI** |

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## 23 EYLÜL 2023, *Cumartesi*

**14:00-14:45**    **Aritmide Zor Alanlar**
*Oturum Başkanları:* Nihal Akar, Mesut Demir
*Panelistler:* Eyüp Özkan, Mehmet Çelik, Oğuzhan Ekrem Turan 🎥◀, Durmuş Yıldıray Şahin

Kompleks Atriyal Taşikardi Yaklaşım - *Burak Hünük*
Kompleks Ventriküler Taşikardilere Yaklaşım - *Eyüp Özkan*
Brugada Sendromunda Ablasyon - *Erkan Baysal*

**14:45 15:20**    **SIK VES OLAN HASTADA**
*Oturum Başkanları:* Çağlar Özmen, Murat Sucu
*Panelistler:* Önder Öztürk, Asım Enhoş, Erdem Karaçöp

Ablasyon Tercih Ederim - *Osman Pirhan*
Medikal Tedavi Öneririm - *Ahmet Tütüncü* 🎥◀

**15:20 -15:45**    **KAHVE ARASI**

**15:45-16:30**    **Yeni Kılavuzlar 1**
*Oturum Başkanları:* Öner Özdoğan, Nizamettin Toprak
*Panelistler:* Ersan Oflar, Hülya Dip, Hicaz Zencirkıran

AKS - *Ahmet Taştan*
KY Focus Update - *Ahmet Öz*

**16:30-17:15**    **Pulmoner Hipertansiyon**
*Oturum Başkanları:* Omaç Tüfekçioğlu, Bedrettin Yıldızeli
*Panelistler:* Hakkı Kaya, Hülya Yıldırım, Oktay Gülcü 🎥◀, Tuba Ekin, Hilal Erken

Pulmoner Ht Atlamamak İçin Nelere Dikkat Etmeliyim? - *Tarık Kıvrak*
Pulmoner HT'da Güncel Kombinasyon Tedavisi - *Çağlar Emre Çağlıyan*
PHT Gelişmiş ASD Vakalarında Güncel Tedavi Yaklaşım - *Mehmet Kaplan*

# 24 EYLÜL 2023, *Pazar*

## KURS SALONU

**08:15-09:00** **İnvaziv işlemlerde TEE Kursu**
*Konuşmacı:* Gökhan Kahveci 🎥

## 100. YIL SALONU

**09:00-09:45** **Kalp Yetmezliğinde Zorlayıcı Noktalar**
*Oturum Başkanları:* Berkay Ekici, Nihan Turhan Çağlar
*Panelistler:* Ceyhun Yücel, Esra Polat, Cansu Öztürk

ARNI - SGLT2 İnhibitörü. Ne zaman? Hangisi? - *Hülya Yıldırım* 🎥
Elektrolit İmbalansı Olan Hastalarda Yönetim (Hiperkalemi, Hiponatremi) - *Duygu Genç* 🎥
İleri Evre Hasta Tx /LVAD İçin Ne Zaman Hangi Merkeze Yönlendirilmeli? - *İbrahim Oğuz Karaca* 🎥

**09:45-10:30** **Yeni Kılavuzlar 2**
*Oturum Başkanları:* Hatice Tolunay, Barış Güngör 🎥
*Panelistler:* Hatice Özdamar 🎥, İrem Üzümcü, Mesut Özkahya 🎥

Endokardit - *Saadet Avunduk*
KVD ve Diyabet - *Süleyman Çağan Efe* 🎥

**10:30-11:00** **Kardiyovasküler Akademi Derneği Ulusal Çalışma Sonuçları**
*Oturum Başkanları:* Mehdi Zoghi, Tarık Kıvrak

Akademi Yapay Zeka Araştırmaların Sonuçları:
Ekokardiyografide Yapay Zeka Kullanılarak Geliştirilen Kendi Kendine Öğrenme Modelinin Tıp Eğitimine Etkisi - *Mevlüt Serdar Kuyumcu*
Kalp Yetmezliği Hastalarında EKG Üzerinden Yapay Zeka Teknikleri ile Hipokalemi, Hiponatremi, Hiperkaleminin Saptanması - *Ufuk İyigün*

**11:00-11:15** **AKILCI İLAÇ KULLANIMI**

**11:15-11:30** **KAPANIŞ OTURUMU**

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## 21 SEPTEMBER 2023, *Thursday*

## CUMHURIYET HALL

**09:00-10:15**  **Abstract Session 1**
*Chairperson:* Dr. Çağlar Emre Çağlıyan (TR)

**OP-1**  A simple parameter predicting recurrence in Atrial Fibrillation patients undergoing Catheter Ablation: Tracheal Carina Angle

*Yakup Yunus Yamanturk, Tarik Cetin, Alperen Aslan, Kubra Korkmaz, Emir Baskovski, Basar Candemir, Ali Timucin Altin, Omer Akyurek*

**OP-2**  A single center experience of the Z-stitch technique as a method of hemostasis in atrial fibrillation patients treated with cryoballoon ablation

*Süleyman Barutçu, Murat Erdem Alp, Taylan Akgün*

**OP-3**  Combination of atrial fibrillation ablation with left atrial appendage electrical isolation and device occlusion in a single procedure: A single center experience

*Fatih Erkam Olgun, Fethi Kılıçaslan*

**OP-4**  Hybrid approach to giant pacemaker decubitus: device extraction and battery pocket reconstruction

*Dilek Aksoy, Gökhun Akkan*

**OP-5**  Parameters Affecting Long-Term Success After Premature Ventricular Complex Ablation Performed By 3-Dimensional Mapping: First Experiences With The Everpace Columbus V2.0 System

*Osman Pirhan*

**OP-6**  The Frequency of Development of Atrial Fibrillation/Atrial Flutter and Its Associated Conditions in Long-Term Follow-up After Percutaneous Closure in Patients with Atrial Septal Defect and Patent Foramen Ovale

*Tuba Ekin, Asım Oktay Ergene*

**10:15-10:45**  **Coffee Break**

**10:45-12:00**  **Abstract Session 2**
*Chairperson:* Dr. Arash Hashemi (IR)

**OP-7**  Challenges and Techniques in Cardiac Defibrillator Implantation via Persistent Left Superior Vena Cava

*Cagatay Tunca, Ayşenur Özkaya, Alperen Taş, Mehmet Taha Özkan, Engin Algül, Mustafa Mücahit Balcı*

**OP-8**  New-onset Atrial Fibrillation after Exenatide injection: Coincidence or Consequence?

*Yakup Yunus Yamanturk, Kerim Esenboga, Gozde Cansu Yilmaz, Basar Candemir*

**OP-9**  Should We Replace Devices With No Event Recorded Before?

*Ahmet Anil Başkurt, Ferhat Siyamend Yurdam*

**OP-10**  A rare source of iatrogenic VT: Septal aneurysm due to PVC ablation

*Kübra Korkmaz, Yakup Yunus Yamantürk, Ali Timuçin Altın, Emir Baskovski, Başar Candemir, Ömer Akyürek*

**OP-11**  Cardiac Involvement In A Patient With ADCK 4 Gene Mutation

*Cansu Ozturk, Onder Ozturk*

**OP-12**  Coronary Artery Stent Dislodgement and Treatment with a Second Stent

*Fatih Koca, Hasan Arı, Mehmet Demir, Erhan Tenekecioğlu*

**12:00-14:00**  **Lunch Break**

## 21 SEPTEMBER 2023, *Thursday*

**14:00-15:15** **Abstract Session 3**
*Chairperson:* Dr. Reza Nazari (USA)

**OP-13** Hyperfusion Syndrome after Carotis Stenting: Case Report
*Sefa Erdi Ömür, Çağrı Zorlu, Kayıhan Karaman*

**OP-14** Hypoxemia, polycythemia and clubbing associated with patent foramen ovale in a young male patient and its percutaneous closure
*Ahmet Seyfeddin Gurbuz, Hasan Kan*

**OP-15** Management of Deep Bradycardia and Hypotension Developed During Carotid Artery Stenting: A Case Report
*Hayrudin Alibasic, Nedret Ülvan, Ajar Koçak, Berkay Ekici*

**OP-16** Post-implantation snaring of the transcatheter aortic valve located above the annulus of native aortic valve
*Özgür Selim Ser, Kadriye Kılıçkesmez*

**OP-17** Sometimes it is necessary to occlude the vessel: treatment of two coronary fistules with coil embolization
*Gökhun Akkan, Narmina Ahmadlı, Sadık Volkan Emren*

**OP-18** Unusual native valve Infective Endocarditis with Corynebacterium
*Semanur Vural, Zeynep Kolak, Aycan Esen Zencirci, Nurşen Keleş*

**15:15-15:30** **Coffee Break / E-Poster Presentation / PP-01 - PP-04**

**PP-01** A Rare Cause of Secondary Hypertension: Nutcracker Syndrome
*Gülay Uzun, Muhammet Raşit Sayın*

**PP-02** Malignant Arrhythmia Due to Testicular Feminization in an Adult
*Kübra Korkmaz, Gözde Cansu Yılmaz, Selen Cansu Altun, Türkan Seda Tan*

**PP-03** The Frequency of Arrhythmia in Patients with Palpitations Who Had Covid-19 with 24-hour Holter Compared to the Control Group
*Kübra Korkmaz, Gözde Cansu Yılmaz, Selen Cansu Altun, Cansın Tulunay Kaya*

**PP-04** The Cardiac Reverse Mismatch Pattern is Clinically Relevant or Not?
*Ali Sarıkaya, Ezgi Gökdemir, Jale Mehmedanlı, Ülkü Korkmaz*

**15:30-16:30** **Abstract Session 4**
*Chairperson:* Dr. Behrad Elahi (UAE)

**OP-19** Comparison of the effect of non-HDL-C/HDL-C ratio on coronary slow flow with other non-traditional lipid markers
*Muhammed Bahadır Omar, Kenan Toprak*

**OP-20** Could aneurysm and atherosclerosis-associated microRNAs (miR 24-1-5p, miR 34a-5p, miR 126-5p, miR 143-5p, miR 145-5p) also be associated with coronary artery ectasia?
*Zafer Yalım, Serap Tutgun Onrat, Ibrahim Etem Dural, Ersel Onrat*

**OP-21** Evaluation of atherogenic coefficient, atherogenic index of plasma and castelli risk index-1 in patients with coronary artery ectasia
*Ersan Oflar, Cennet Yildiz, Fatma Nihan Turhan Caglar, Ilayda Bostancı Alp*

**OP-22** Evaluation Of The Relationship Between No-Reflow Phenomenon And Immature Granulocyte Ratio: A Retrospective Study
*Ismet Zengin, Tufan Günay*

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## 21 SEPTEMBER 2023, *Thursday*

**OP-23**  In-Hospital Prognostic Value Of De-Ritis Ratio In Patients With Non -ST Segment Elevation Myocardial İnfraction
*Nart Zafer Baytuğan*

**OP-24**  Investigation of the relationship between CRP/Albumin and Neutrophil/Lymphocyte ratio and periodontal disease in patients with ST elevation myocardial infarction
*Oğuzhan Birdal, Sema Nur Sevinç Gül, Levent Pay*

**16:30-16:45   Coffee Break / E-Poster Presentation / PP-05 - PP08**

**PP-05**  Case of Erdheim-Chester disease presenting with severe aortic stenosis: A case report
*Büşra Kuru, Kübra Korkmaz, Türkan Seda Tan Kürklü, Irem Dinçer, Mustafa Kılıçkap, Cagdas Baran*

**PP-06**  Evaluation of lipid profile of stable coronary artery disease patients who applied outpatient clinic of a tertiary hospital
*Cennet Yildiz, Ersan Oflar*

**PP-07**  Esophageal Rupture Presenting with ST-Segment Elevation
*Çağrı Zorlu, Abdullah Emre Bektaş*

**PP-08**  Pericardiocentesis with the intention of thoracentesis
*Zafer Kök, Tuba Ekin, Asım Oktay Ergene*

**16:45-18:00   Abstract Session 5**
**Chairperson:** *Dr. Mehdi Zoghi (TR)*

**OP-25**  Silent myocardial ischemia in patient with variant angina
*Semanur Vural, Şennur Ünal Dayı, Nazmiye Özbilgin Çakmak*

**OP-26**  The relationship between triglyceride/glucose index and intracoronary thrombus burden in patients with acute myocardial infarction
*Bekir Demirtaş, Ozan Güneş, Yusuf Taşkın, Yunus Emre Özbebek, Ahmet Kıvrak*

**OP-27**  The role of frequently used indexes and markers in determining coronary artery disease in patients undergoing elective coronary angiography
*Kemal Göçer*

**OP-28**  The systemic immune-inflammation index (SII) is associated ischaemia with non-obstructive coronary arteries (INOCA)
*Muammer Karakayalı, Mehmet Altunova, Inanç Artaç, Timor Omar*

**OP-29**  Value of ACEF score for in-stent restenosis in patients with acute coronary syndrome
*Cennet Yildiz, Ersan Oflar, Fatma Nihan Turhan Çaglar*

**OP-30**  What Covid-19 Infection Changes in Acute Coronary Syndrome Metrics
*Kübra Korkmaz, Selen Cansu Altun, Gözde Cansu Yılmaz, Irem Müge Akbulut Koyuncu, Cansın Tulunay Kaya*

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## 21 SEPTEMBER 2023, *Thursday*

## COURSE HALL

**16:45-18:00**   **Abstract Session 6**
*Chairperson:* Dr. Lorenzo Costantini (IT)

**OP-31**   Dapagliflozin may protect against doxorubicin-induced cardiotoxicity
*Sebahat Ulusan, Kanat Gülle, Ahmet Peynirci, Murat Sevimi, Adnan Karaibrahimoglu, Mevlüt Serdar Kuyumcu*

**OP-32**   Furosemide-induced Steven Johnson Syndrome
*Hüseyin Tezcan, Zafer Büyükterzi*

**OP-33**   Protective Effects of Arbutin Against Doxorubicin-Induced Cardiac Damage
*Emrah Aksakal, Oğuzhan Birdal, Ufuk Okkay*

**OP-34**   Soluble ST2 in acute pulmonary embolism
*Muhammet Uyanik*

**OP-35**   The Effect Of Sodium Glucose Co-Transporter-2 Inhibitors On Systemic Immune Inflammatory Index Levels In Heart Failure With Reduced Ejection Fraction
*Ozge Ozcan Abacioglu, Nermin Yıldız Koyunsever, Armagan Acele*

**OP-36**   The Effectiveness of Thrombolytic Therapy in the Presence of Severe Intracoronary Thrombus
*Şükrü Çetin, Burak Tay, Ege Dağdeviren*

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## 22 SEPTEMBER 2023, *Friday*

## CUMHURIYET HALL

**09:00-10:15** **Abstract Session 7**
***Chairperson:*** *Dr. Rezzan Deniz Acar (TR)*

**OP-37** Demonstration of subclinical left ventricular electrical and mechanical dysfunction in overweight subjects by frontal QRS-T angle and 3D-speckle tracking echocardiography

*Mustafa Dogdus, Ganbar Mammadov, Ugur Taskin, Ferhat Dindas*

**OP-38** Evaluation of bipolar disorders and schizophrenia patients with echocardiographic global longitudinal strain

*Muammer Karakayalı, Timor Omar, Inanc Artac, Mehmet Altunova*

**OP-39** Left Atrial Appendage Strain Rate Predicts Thrombus Formation in Atrial Fibrillation

*Muge Akbulut, Seda Tan Kurklu, Halil Gulyigit, Emre Ozerdem, Volkan Kozluca, Kerim Esenboga, Emir Baskovski, Ayse Irem Demirtola, Cemre Tekin Cebeci, Irem Dincer*

**OP-40** Mitral Annular Calcification May Predict Postoperative Paravalvular Leak in Patients with Transcatheter Aortic Valve Implantation

*Aykun Hakgör, Arzu Yazar*

**OP-41** The relationship between the presence of crochetage sign and echocardiographic defect size in patients with secundum atrial septal defect

*Ayse Colak, Zeynep Kumral*

**OP-42** The Role of Left Ventricular Outflow Tract Presystolic Wave in the Differentiation of Non-obstructive Hypertrophic Cardiomyopathy and Athlete's Heart

*Dilek Cahide Haznedar Kirci, Gulay Uzun, Muhammet Rasit Sayin*

**10:15-10:45** **Coffee Break**

**10:45-12:00** **Abstract Session 9**
***Chairperson:*** *Dr. Ahmet Karagoz (TR)*

**OP-49** Assesment of Undefined Myocardial Infarction Using Cardiac MRI in Patients with End-stage Renal Disease

*Ihsan Yuce, Mustafa Keles, Mecit Kantarci*

**OP-50** Assessment of Arterial Endothelial Dysfunction in Patients with Venous Thromboembolism

*Anil Akray, Çağlar Emre Çağlıyan, Ömer Tepe, Osman Okkay*

**OP-51** Cardiology Services in Adıyaman City Center After the February 6 Earthquakes

*Yusuf Hosoglu, Ayşe Hosoglu*

**OP-52** Immediate pericardial protamine administration during uncontrollable acute iatrogenic hemorrhagic cardiac tamponade: a safety and feasibility study

*Başar Candemir, Büşra Kuru, Ibrahim Ersöz, Şeyhmus Atan, Yakup Yunus Yamantürk, Irem Cenan Büyükçakır, Volkan Kozluca, Osman Beton*

**OP-53** Impact of HAT2CH2 score on the severity of acute pulmonary embolism

*Faruk Aydınyılmaz, Sidar Şiyar Aydın, Murat Özmen*

**OP-54** Mediation: An Efficient Way to Resolve Medical Malpractice Disputes

*Deniz Ergene*

**12:00-14:00** **Lunch Break**

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## 22 SEPTEMBER 2023, *Friday*

**14:00-15:15**  **Pathophysiology of ACS**
*Chairperson:* Dr. Mehdi Zoghi (TR)

The Vulnerable Atherosclerotic Plaque Erosion
*Dr. Sena Sert (TR)* ▉◀

Spontaneous Coronary Artery Dissection
*Dr. Mohamed Zahran (EG)* ▉◀

MINOCA
*Dr. Ali Çoner (TR)* ▉◀

15:00-15:15  Discussion

**15:15-15:30**  **Coffee Break / E-Poster Presentation / PP-09 - PP-12**

PP-09  Severe Aortic Stenosis Hiding Behind Microangiopathic Hemolytic Anemia
*Kübra Korkmaz, Cansın Tulunay Kaya*

PP-10  Rare Age, Rare Gender, Rare Syndrome, Rare Clinic: RCA Thrombus in a Young Lupus Male Patient
*Kübra Korkmaz, Cansın Tulunay Kaya*

PP-11  Assessment of Repolarization Parameters in Patients with Multiple Sclerosis
*Unal Ozturk, Onder Ozturk*

PP-12  Idiopatic Constructive Pericarditis
*Mert Deniz Savcilioğlu, Nil Savcilioğlu, Irfan Veysel Düzen, Mehmet Kaplan, Erdem Alkan*

**15:30-16:45**  **Risk Stratification And Prognosis of ACS**
*Chairperson:* Dr. Ömer Kozan (TR)

Classification of ACS and Universal Definiton of Myocardial Infarction
*Dr. Iaha Aghaeva (AZ)*

Readmissions and Risk Stratification to Target Therapies in Acute Coronary Syndromes
*Dr. Mehriban Isgender (AZ)* ▉◀

Sports Events and Acute Coronary Syndrome
*Dr. Eleni Nakou (UK)* ▉◀

16:30-16:45  Discussion

**16:45-17:00**  **Coffee Break / E-Poster Presentation / PP-13 - PP-16**

PP-13  Effects of SGLT-2 inhibitors on blood pressure in diabetic patients with hypertension
*Bahar Arıcan Tarım*

PP-14  Wernicke's Aphasia due to Cardiac Myxoma with Atrial Fibrillation
*Tolga Kunak, Ayşegül Ülgen Kunak, Özkan Kayhan, Mehmet Ali Aldan*

PP-15  The Effect of Right Ventricular Systolic Functions and Pulmonary Arterial Pressure on Cardiovascular Outcomes in Patients with Type 2 Diabetes Mellitus
*Sıla Çelik, Berkay Ekici, Ajar Koçak, Ebru Ercan*

PP-16  Quantitative Analysis Of Right Coronary Artery Morphology By Digital Substraction Angiography
*Mesut Gitmez*

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## 22 SEPTEMBER 2023, *Friday*

**17:00-18:15**   **Arrhythmias in ACS**
*Chairperson:* Dr. Emin Evren Özcan (TR)

Management of Ventricular Arrhythmias in Patients with ACS
*Dr. Çağlar Özmen (TR)*

Management of Patients Presenting with AF and ACS
*Dr. Lorenzo Costantini (IT)*

Role of Wearable ICD's in Patients Presenting with ACS
*Dr. Marta Aceña Ramos (UAE)*

18:00-18:15   Discussion

## 22 SEPTEMBER 2023, *Friday*

## COURSE HALL

**09:00-10:15**    **Abstract Session 8**
*Chairperson:* Dr. Berkay Ekici (TR)

**OP-43**    A Different Approach to the Valve-In-Valve Tavr: Transseptal Valve-In-Valve

*Ali Can Özkan, Mehmet Akif Erdöl, Ahmet Korkmaz, Ahmet Göktuğ Ertem, Çağrı Yayla, Adnan Burak Akçay*

**OP-44**    Application of DK Crush Technique for Stenting in a patient with anterior ST-elevation Myocardial infarction following precise ostial stenting of the LAD with type 1 Dual LAD

*Muhammed Kemal Kahyalar*

**OP-45**    Assessing the Association Between the Atherogenic Index of Plasma and Coronary Plaque Burden: A Retrospective Intravascular Ultrasound Analysis

*Aslan Erdoğan, Arda Şişman, Ayşe Irem Demirtola*

**OP-46**    Do we know enough about radiation exposure and its side effects in invasive cardiological procedures?

*Saadet Aydin*

**OP-47**    Double Check in Transseptal Puncture: Enhancing Safety and Reducing Complications in Clinical Practice: A Single Center Experience

*Eyup Ozkan, Suleyman Barutcu, Taylan Akgun*

**OP-48**    Effect of percutaneous coronary intervention with long predilatation period on coronary flow in patients with acute ST segment elevation myocardial infarction

*Mücahit Tasdemir, Samim Emet, Ekrem Bilal Karaayvaz*

**10:15-10:45**    **Coffee Break**

**10:45-12:00**    **Abstract Session 10**
*Chairperson:* Dr. Sadık Volkan Emren (TR)

**OP-55**    Patient experiencing hemoptysis during pregnancy

*Caglar Emre Cagliyan*

**OP-56**    Prognostic Nutritional Index Can Predict No-Reflow Phenomenon After Saphenous Vein Graft Intervention In Patients With Acute Coronary Syndrome

*Ömer Furkan Demir, Fatih Koca*

**OP-57**    Reversıble Pulmonary Hypertensıon Assocıated Wıth Myasthenıa Gravıs

*Ahmet Taha Şahin, Yakup Alsancak, Öznur Keskin*

**OP-58**    Subarachnoid Hemorrhage Complicated by Neurogenic Pulmonary Edema and Takotsubo Cardiomyopathy

*Ayse Parali Ak, Gonul Aciksari, Feyza Aksu, Merve Kapcik, Mustafa Calıskan*

**OP-59**    The modified Glasgow prognostic score is associated with survival mortality in patients undergoing mitral valve surgery due to rheumatic severe mitral stenosis

*Mert Evlice*

**OP-60**    Comparison of 12- Lead ECG and Apple Watch In Patients With Chronic Obstructive Pulmonary Disease; A Correlation Study

*Semih Kalkan*

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## 23 SEPTEMBER 2023, *Saturday*

## CUMHURIYET HALL

**09:00-10:15**  **Imaging in ACS**
*Chairperson:* Dr. Nihan Turhan Çağlar (TR)
ECG and vectorcardiography in assessing ischemia (Cardisio ECG system)
*Dr. Çağlar Emre Çağlıyan (TR)*

Echocardiography
*Dr. Fady Gerges (AE)*  🎥

Cardiac CTA, CMR
*Dr. Ibrahim Altun (TR)*

10:00-10:15  Discussion

**10:15-10:45**  **Coffee Break**

**10:45-12:00**  **Acute Coronary Syndromes and Comorbidities**
*Chairperson:* Dr. Çağlar Emre Çağlıyan (TR)
Chronic Kidney Disease
*Dr. Rezzan Deniz Acar(TR)*

Acute Coronary Syndrome in Congenital Heart Disease
*Dr. Sara Moscatelli (UK)*  🎥

Type 2 Myocardial Infarction
*Dr. Aleksandra Djokovic (RS)*  🎥

11:45-12:00  Discussion

**12:00-14:00**  **Lunch Break**

**14:00-15:20**  **Invasive Management of ACS-1**
*Chairperson:* Dr. Sadık Volkan Emren (TR)
STEMI: Revascularizing Infarct Related Artery vs Multivessel Strategy
*Dr. Gökhan Altunbaş (TR)*

PCI vs CABG in ACS
*Dr. Ahmet Karagoz (TR)*

New Revascularization Guidelines in ACS: Top 10 Take-Home Messages
*Dr. Ömer Kertmen (TR)*

15:05-15:20  Discussion

**15:20-15:45**  **Coffee Break**

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## 23 SEPTEMBER 2023, *Saturday*

**15:45-17:15**    **Invasive Management of ACS-2**
    ***Chairperson:*** *Dr. Oktay Ergene (TR)*

    Role of FFR, IVUS and OCT in Revascularization
    *Dr. Reza Nazari (USA)*

    Robotic PCI in Patients with ACS
    *Dr. Behrad Elahi (UAE)*

    Performing Complex Coronary Interventions in ACS Setting
    *Dr. Arash Hashemi (IR)*

17:00-17:15    Discussion

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## 24 SEPTEMBER 2023, *Sunday*

## CUMHURIYET HALL

**09:00-10:30  Abstract Session 11**
*Chairperson:* Dr. Nihan Turhan Çağlar (TR)

**OP-61**  Relationship between functional capacity and serum Elabela levels in heart failure patients with reduced ejection fraction
*Esra Duman, Ali Duygu, Uğur Küçük, Hakkı Kaya*

**OP-62**  A new biomarker for prediction of infarct size after ST-Elevation Myocardial Infarction
*Umut Uyan, Cihan Aydın, Aykut Demirkıran*

**OP-63**  A new marker in determining the prognosis in coronary artery patients undergoing PCI: the score combining Plasma fibrinogen and systemic immune-inflammation index
*Şaban Keleşoğlu, Ramazan Ozan*

**OP-64**  A new corrected formula for correct estimation of central aortic pressure from peripheral cuff measurements
*Mehmet Özgeyik, Onur Kaypaklı*

**OP-65**  Efficacy and Predictors of Endovascular Treatment Outcomes in Complex Peripheral Arterial Disease Patients Undergoing Drug-Coated Balloon Angioplasty
*Ibrahim Cagri Kaya, Halil Ibrahim Bulut*

**OP-66**  In elderly patients undergoing percutaneous coronary intervention, the relationship between N-terminal pro-B-type natriuretic peptide and prognosis
*Raif Kılıç, Tuncay Güzel*

**10:30-11:30  Abstract Session 13**
*Chairperson:* Dr. Nihan Turhan Çağlar (TR)

**OP-73**  Serum Galectin-3 levels are associated with early markers of subclinic systemic atherosclerosis and obstructive sleep apnoea syndrome severity
*Gonul Aciksari, Gokhan Cetinkal, Feyza Aksu, Mehmet Kocak, Sebahat Alisir Ejder, Asiye Kanbay*

**OP-74**  Systemic inflammation response index predicts ventricular arrhythmia after successful reperfusion in ST-elevation myocardial infarction
*Murat Oğuz Özilhan, Muhammed Yunus Çalapkulu, Sadık Kadri Açıkgöz*

**OP-75**  The Association of Serum Uric Acid/Albumin Ratio with stent trombosis in Patients with ST Elevation Myocardial Infarction
*Duygu İnan, Levent Pay, Aslan Erdoğan*

**OP-76**  The power of the CHA2DS2-VASc score to predict stroke in patients with degenerative valve disease and without atrial fibrillation
*Bedrettin Boyraz, Tezcan Peker, Onur Kılıçarslan*

**OP-77**  The prognostic value of the triglyceride glucose index in patients with ST-elevation myocardial infarction
*Ayşe Nur Özkaya Ibiş, Çağatay Tunca, Alperen Taş, Mehmet Taha Özkan, Mustafa Mücahit Balcı, Murat Tulmaç*

**OP-78**  The relationship of H2FPEF score with nocturnal hypertension and clinical outcomes in hypertensive patients
*Derya Baykız, Miraç Tonyalı, Mehmet Kemal Sabırlı, Fakhriyya Ismayilova, Elif Ayduk Gövdeli*

**OP-79**  Comparison of the effects of long-term hemodialysis and peritoneal dialysis modalities on left ventricular functions
*Selvi Öztas, Selma Kenar Tiryakioğlu*

**OP-80**  Long Term Comparison of The Effect Of Right Ventricular Apical or Septal Pacing on The Right Ventricular And Left Ventricular Functions
*Güneş Melike Doğan, Hakan Kilci, Cengiz Çeliker*

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## 24 SEPTEMBER 2023, *Sunday*

## COURSE HALL

**09:00-10:30** **Abstract Session 12**
*Chairperson:* Dr. Çağlar Emre Çağlıyan (TR)

**OP-67** Increased Epicardial Adipose Tissue Volume May Adversely Affect Outcomes in Patients Undergoing Transcatheter Aortic Valve Implantation
*Kerem Özbek, Mustafa Dağli, Ahmet Balun, Zehra Güven Çetin, Bekir Demirtaş, Eren Çamur, Mustafa Çetin, Hülya Çiçekçioğlu*

**OP-68** Is Ankle Brachial Index a Useful Prognostic Parameter for Prediction of the Early Complications of Acute ST-elevation Myocardial Infarction
*Rustem Yilmaz*

**OP-69** Prediction of clinical outcomes after percutaneous coronary intervention: machine-learning analysis of the National Inpatient Sample
*Akhmetzhan Galimzhanov, Andrija Matetic, Erhan Tenekecioglu, Mamas Mamas*

**OP-70** Predictors of major advers events in patients with coronary perforation treated with covered stents
*Aysel Akhundova, Umeyir Savur, Oguz Karaca, Başak Çatalbaş*

**OP-71** Prognostic and predictive performance of immune-nutritional scoring systems in patients with perioperative myocardial injury during non-cardiac surgery
*Pelin Karaca Özer, Mustafa Lütfi Yavuz, Fakhriyya Ismayilova, Emre Yalçın, Berk Batuhan Bayraktar, Samim Emet, Ali Elitok, Aytaç Öncül*

**OP-72** Prognostic impact of the tricuspid annular plane systolic excursion/pulmonary arterial systolic pressure ratio in acute pulmonary embolism
*Berhan Keskin, Barkın Kultursay, Seda Tanyeri Uzel, Seyhmus Kulahcioglu, Aykun Hakgor, Hacer Ceren Tokgoz, Enver Yucel, Ahmet Sekban, Ali Karagoz, Halil Ibrahim Tanboga, Cihangir Kaymaz*

**10:30-11:30** **Abstract Session 14**
*Chairperson:* Dr. Mehdi Zoghi (TR)

**OP-81** 24-hours blood pressure monitoring in patients with arterial hypertension: correlation with PCSK9 level
*Olga A Germanova, Yulia Yu Vukolova, Irina V Gubareva*

**OP-82** Impact of obesity on short term outcomes after LVAD implantation
*Arzu Yazar, Aykun Hakgör*

**OP-83** Parkinson's Disease and Tpeak – Tend interval
*Unal Ozturk, Onder Ozturk*

**OP-84** Relationship between Mediterranean Diet and No Reflow Phenomenon After Percutaneous Coronary Intervention
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*Ufuk Sadık Ceylan*

# KONUŞMA ÖZETLERİ

## AMİLOİDOZ

Çiğdem İLERİ

*Koşuyolu Yüksek İhtisas Eğitim ve Araştırma Hastanesi, Kardiyoloji Anabilim Dalı, İSTANBUL*

**Giriş:** Amiloidoz, doku ve organlarda ekstrasellüler, yıkıma dirençli amiloid fibrillerinin birikimi ile karakterize bir multisistem hastalığıdır (1). Bu sunumda güncel kılavuzlar ışığında kardiyak amiloidoz tanı ve tedavisi üzerinde durulacaktır.

**Tartışma:** Başlıca amiloidoz tipleri;

**-AL Tip (Hafif Zincir Amiloidozu):** İmmunglobulin hafif zincir (lambda) birikimi görülen bu form plazma hücre diskrazileri ile ilişkilidir (2).

**- ATTR tip (Transtiretin amiloidozu):** Serumda retinol (vitamin A) ve tiroksinin (T4) taşıyıcı proteini olan transtiretinin birikimi ile karakterizedir. İki alt-grubu vardır:

1) **Herediter (varyant) Tip ATTR:** Kardiyomiyopati ve/veya polinöropati şeklinde görülür

2) **Patolojik (wild) Tip ATTR:** Kardiyomiyopati şeklinde görülür

**-Diğer:** AA, AApoAI, AApoAII, AApoAIV, AFib, AGelg birikimi görülen tiplerdir.

Amiloidoz ile ilgili uzman görüş dokümanlarında sol ventrikül duvar kalınlığı 12 mm ve üzeri ise; 65 yaş ve üstü hastada kalp yetersizliği semptomları varlığı, aort darlığı varlığı, periorbital morarma, bilateral karpal tünel sendromu, lumbar/servikal spinal stenoz, spontan biseps tendon rüptürü, periferal polinöropati, ortostatik hipotansiyon, otonom nöropati ve nefrotik sendrom gibi bulgular varlığında klinik olarak amilodozdan şüphelenilmeli denmektedir (3,4).

Elektrokardiyografideki (EKG) şüpheli bulgular ise; amiloid fibrillerinin ekstrasellüler alanda birikimi ile düşük voltaj, sol aks sapması ve psödoinfarkt paterni görülmesidir (5). Transtorasik ekokardiyografide (TTE) sol ventrikül hipertrofisi saptanırken, EKG'de düşük voltaj görülmesi amiloidoz düşündüren önemli bulgudur (6). Ayrıca dal blokları, AV bloklar, sinüs duraklaması, yavaş AF gibi ileti bozuklukları da diğer EKG bulguları arasındadır (3). Amiloid birikimi ile atriyumlar dilate ve rijid hale gelerek atriyal fibrilasyon gelişimine zemin hazırlar (7). Ayrıca elektromekanik disosiasyon nedeniyle atriyal mekanikler bozularak sinüs ritminde dahi trombüs oluşumu görülebilir (2).

Kardiyak amiloidozda troponin ve NT-proBNP gibi kardiyak biyobelirteç düzeylerinde artış saptanabilir. Biyobelirteçler tanı ve evreleme sürecinde kullanıldığı gibi, tedaviye yanıtın ve prognozun değerlendirilmesinde de kullanılır (3).

Önemli görüntüleme yöntemlerinden biri olan TTE'deki başlıca bulgular; ventrikül duvar kalınlığı artışı, normal sol ventrikül kavite çapları, restriktif diyastolik dolum paterni, intrakardiyak trombüs oluşumu ve perikardiyal efüzyon varlığıdır (5,8,9). En erken görülen TTE bulgusu diyastolik disfonksiyondur (10). Hastalığın erken evrelerinde subklinik diyastolik disfonksiyon görülürken, ilerleyen evrelerde restriktif kardiyomiyopati ile prezente olabilir (11). Amiloidozda kalp kapaklarında da tutulum görülebilir. En sık aort kapak tutulumu görülmekte ve TAVI hastalarının %16'sında ATTR kardiyak amilodioz saptanmaktadır (6,12).

Özellikle hastalığın erken evrelerinde önemli olan ve etyolojiye yönelik bilgi sağlayan parametre ise GLS'dir (13). Miyokardiyal liflerin dizilimi nedeniyle amiloid birikiminden bazal kesimler daha fazla etkilenir. GLS'nin sol ventrikül bazal kısmına kıyasla apekste rölatif daha iyi bir değere sahip olması 'Apikal korunma (sparing)' hem AL hem de ATTR tip kardiyak amiloidozda görülebilir (9).

Amiloidoz tanı ve takibinde kardiyak manyetik rezonans görüntüleme önemli bir yere sahiptir. Cine görüntüleme ile sol ventrikül hipertrofisi, interatriyal septumda kalınlaşma, biatriyal dilatasyon, perikardiyal efüzyon varlığı gibi anatomik değerlendirmeler yapılabilir (6). Amiloid birikimini gösteren ekstrasellüler volüm artışı T1 mapping ile ölçülür (7). Amiloid birikimi ile ekstrasellüler volüm artar, T1 uzar (14). Ayrıca amiloidozda her iki ventrikülde de subendokardiyal ya da transmural tarzda geç gadolinyum tutulumu görülür (6). Subendokardiyal geç godalinyum tutulumu AL tip amiloidozda, transmural tutulum ise daha sıklıkla ATTR tipinde görülür (15).

Kemik sintigrafisinde kullanılan ajanlar 99mTc-PYP (99mTc ile işaretlenmiş pirofosfat) DPD (3,3-difosfano-1,2-propanodikarboksilik asit) ve HMDP (hidroksimetilendifosfonat)'dir (13). Perugini sınıflamasına göre görsel bir değerlendirme yapılabilmektedir (16). Özellikle ATTR tip amiloidozda yüksek sensitiviteye sahip bir yöntemdir ancak spesifik değildir. Çünkü AL amiloidozda da %40 oranında Grade 1, %10 oranında ise Grade 2-3 tutulum görülebilmektedir (17).

ATTR kardiyomiyopatisinde tek endike tedavi olan tafamidis, transtiretin moleküllerinin stabilizasyonunu sağlayarak amiloid birikimini engeller (3). ATTR amiloidozun her iki tipinde, NYHA-I ve II hastalarda endikasyonu vardır (4). Ayrıca kardiyomiyopati, polinöropati veya miks form şeklinde prezente olan herediter tip ATTR'de tafamidis tedavisine ek olarak polinöropati varlığında patisiran, vutrisiran ve inotersen gibi gen sustrucu tedaviler bulunmaktadır (3).

### Sonuç

Kardiyak amiloidoz, tanı algoritmalarının netleşmesi ve kolaylaşması ile hastaların giderek daha fazla tanı aldıkları bir hastalıktır. Tedavinin erken evrede faydasının gösterilmesi nedeniyle, klinik şüphe ve erken tanı hastalığın seyrinde önemini korumaktadır.

The treatment of systemic amyloidosis has dramatically evolved over the last few years in both AL and ATTR, improv-ing disease prognosis. However, treating CA is a complex task due to the frequent association between systemic congestion and low blood pressure, thrombo-embolic and haemor-rhagic risk balance, patient frailty, and poor prognosis

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## KALP YETERSİZLİĞİNDE DİÜRETİK DİRENCİ

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Kalp yetersizliği tedavisinde kalbin iş yükünü azaltmak için kullanılan ilaç gruplarından biri de diüretiklerdir. Dekompanse kalp yetersizliğinde dekonjesyonun sağlanmasında kullanılan farklı diüretik ajanlar, nefronun farklı kısımlarına etki eder. Bunlardan asetozolamid ve SGLT2i proksimal tübülde, loop diüretikler Henle kulpunun çıkan kolunda, tiyazid diüretikler distal tübülde ve MRA toplayıcı kanalda etki gösterir. Diüretiklerin etki gösterebilmesi için nefron lümenindeki miktarları ve lümendeki kalış süreleri önemlidir. Nefron lümenindeki diüretik miktarı glomeruler filtrasyondan ziyade tübüler sekresyon bağımlıdır. Diüretik ilaçlar albümine bağlı taşındıklarından tübül lümenine geçişlerinde glomeruler filtrasyon hızının zayıf rolü vardır. Lümene geçişleri esas olarak proksimal tübülden (S2,S3 segment) aktif sekresyonla, organik anyon transporter aracılığıyla olur (Renal yetmezlikte biriken organik anyonlar yarışmalı inhibisyona neden olur). Diüretiklerin doz-yanıt eğrisi sigmoidaldir. Diüretik etkinin başlaması için ilaç düzeyi bir eşik değer düzeyine ulaşmalıdır ayrıca " tavan doz" denen dozun üzerinde doz artışı yapılsa da diüretik etki artmaz

Yeterli miktar ve sürede nefron lümeninde diüretik ajan olsa bile yine de diüretik direnci gelişebilir. Diüretik direnci; nitel tanımlama ile tam doz loop diüretik tedaviye rağmen konjesyonu düzeltmeye yetecek kadar sıvı ve sodyum atılımının sağlanamaması veya nicel tanımlama ile günlük 2x160 mg oral furosemide rağmen 72 sa içinde en az 90 mmol Na atamamak, loop diüretik alındıktan 6 sa sonra idrar çıkışının <100-150 mL olması veya 2 saat sonra spot idrarda Na atılımının <50-70 mmol olması olarak tanımlanabilir. Düretik direnci farmakokinetik ve farmakodinamik birçok mekanizma ile gelişebileceği gibi diüretik direncinin sebeplerinden biri de RAAS aktivasyonudur. Yeterli RAAS blokajı sağlanmadan diüretikler optimal etki gösteremez. Makula densa hücreleri lümen içi klor düzeyine duyarlıdır. Hiponatremiden ziyade esas hipokloremi RAAS aktivasyonunu tetikleyerek diüretik direncine neden olur. Loop diüretikler kloru sodyumdan fazla attırır, bu nedenle hipokloremiye her zaman hiponatremi eşlik etmez. Hipokloremisi olup sodyum düzeyi normal dahi olsa bu hastalarda mortalite daha yüksektir. Öte yanda çalışmalarda mortalite artışıyla ilişkili hipokloreminin; hipervolemik (dilusyonel) hipokloremi değil deplesyonel hipokloremi olduğu gösterilmiştir. Buraya kadar anlatılan klor teorisi doğrultusunda klor seviyesini düzeltmenin kalp yetersizliği tedavisinde yeni bir hedef olabileceği düşünülerek lizin klorid preparatları ile klor replasmanının yapıldığı araştırmalar devam etmektedir. Kalp yetersizliği hastalarında aşırı tuz kısıtlamasından kaçınılmalı, hipokloremi açısından da takip edilerek diüretik doz artışı yapılmalıdır. Unutulmamalıdır ki hipokloremi düzeltildiğinde aşırı RAAS aktivasyonu ve diüretik direnci kırılacak ve daha düşük bir diüretik dozu ile daha etkin bir diürez sağlanabilecektir.

Diüretik direnci olan hastalarda bir diğer çözüm yolu da tedaviye SGLT2i eklemektir. Nefron tübülünde sodyumun yaklaşık %60-70'i proksimal tübülden emildiğinden diüretik etkisinin proksimal tübülden başlaması sağlanmalıdır. Proksimal tübüle etki edebilecek diğer bir ajan asetozolamiddir. Asetozolamid aynı zamanda klor koruyucu bir etki mekanizmasına sahiptir. Fakat ülkemizde iv formu yoktur ve de metabolik asidoz yapma riski vardır. Sequential nefron blokajı adı verilen yöntemde nefronun ardışık tüm segmentlerinden sodyum emilimi bloke edilmiş olur. Sequential nefron blokajı haricinde diüretik direnci yönetiminde kullanılabilecek yöntemler; diüretik infüzyonu , diüretiklerle beraber hipertonik salin verilmesi, inotrop ajanlar ile kontraktilitenin artırılması ve ultrafiltrasyondur.

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## KLİNİK PRATİĞİMİZİ DEĞİŞTİREN ÇALIŞMALAR (KALP YETERSİZLİĞİ)

Yasemin Kılavuz Doğan

ADVOR ÇALIŞMASI; akut dekompanse kalp yetersizliği olan hastalarda, intravenöz (IV) loop diüretiğe eklenen IV asetazolamidin, erken başarılı dekonjesyon insidansına etkisi araştırılmıştır. 27 merkezden 519 Akut dekompande kalp yetersizliği hastası alındı. Volüm yüklenme bulgusu ve NT-pro BNP >1000 pg/ml yada BNP > 250 pg/ml ,1 ay ≤ oral idame loop diüretik kullanımı olan hastalardı.Hastaların 2/3 'ü HFpEF'di. SGLT-2 inhibitörü kullanımı olanlar, GFR < 20 ml/dk ve yatış sırasında 80 mg < iv furosemid ihtiyacı olanlar çalışmaya alınmadı.3 aylık takip yapıldı. Akut dekompanse kalp yetersizliği olan hastalara IV loop diüretiklerine ek olarak IV asetazolamid eklenmesinin 3 gün içinde yan etki profilini artırmadan başarılı dekonjesyon sağladığını göstermiştir. Ancak etkinlik ve güvenirlik için daha çok veriye ihtiyaç var

CLOROTIC Çalışması; Son 24 saat içinde akut dekompanse kalp yetmezliği ile hastaneye yatırılan KKY hastalarında iv diüretiklere oral HCTZ'nin eklenmesinin diüretik yanıtı araştırıldı. Toplam 230 hasta iv loop diüretik ek olarak beş günlük oral HCTZ veya plaseboya randomize edildi. HCTZ dozu GFR>50 ml/dk ise 25 mg/gün,GFR 20-50 ml/dk ise 50 mg/gün, GFR<20 ml/dk ise 100 mg/gün'dı. Loop diüretiğine HCTZ eklenmesi, ADKY hastalarında diüretik cevabında iyileşme sağlamıştır. Bu yanıt özellikle bazal böbrek fonksiyonu iyi olan hastalarda adha belirğindir.

EMPULSE Çalışması; Akut kalp yetersizliği ile hospitalize edilen hastalarda taburculuk öncesi erken dönemde tedaviye empagliflozinin eklenmesinin uzun dönem sonuçlara etkisini incelemeyi amaçlamıştır. Ejeksiyon fraksiyon veya diyabet durumundan bağımsız olarak akut kalp yetmezliği nedeniyle hastaneye başvuran ve hastanede yatış sırasında veya başvurudan önceki 72 saat içinde NT-proBNP ≥ 1600 pg/ml veya BNP ≥ 400 pg/ml 530 hasta empagliflozin 10 mg ve plaseboya randomize edildi. 90 gün boyunca primer sonlanım noktaları: üm nedenlere bağlı ölüm, kalp yetersizliği olay sayısı, ilk kalp yetersizliği olayına kadar geçen süre, bazaldeki KCCQ-TSS skorunda değişim empagliflozin lehineydi. EMPAGLİFLOZİN'in akut kalp yetersizliğinde erken başlanılması; tüm dekonjesyon belirteçlerini iyileştirmede klinik olarak anlamlı ve 90 güne kadar olan gözlemde sürdürülebilir fayda sağlanmıştır.

STRONG-HF Çalışması; Kalp yetersizliği tedavilerinin hızlı optimizasyonun güvenliğinin ve etkinliğinin değerlendirilmesi 1078 hasta olağan bakım veya yüksek yoğunlukta bakım olmak üzere randomize edildi. kardiyovasküler ölüm %26 daha düşük, kalp yetersizliği ile hastaneye tekrar yatış %44 daha düşük, tüm nedenli ölüm %16 daha düşük izlendi. Akut kalp yetmezliğiyle hastaneye yatıp taburcu edilen hastalara; yakın takip edilerek RAS inhibitörü, beta bloker ve mineralokortikoid reseptör antagonistlerinin hızlıca tam doza çıkılması primer sonlanım noktalarında belirgin iyileşme sağlamıştır. Bu yaklaşımla hastaneye yatış ve mortalitede belirgin azalma görülmüştür.

DELİVER ÇALIŞMASI; Hafif Azalmış veya Korunmuş EF 'li KY'de dapagliflozin etkisi araştırılmıştır. 20 ülkeden,, NHYA sınıf II-IV, LVEF> %40 ,yapısal kalp hastalığı (LVH veya LA dilatasyonu), yükselmiş natriüretik peptit olan hastalar alındı. Primer sonlanımda KV ölüm ve birleşik olarak kalp yetersizliğinin kötüleşmesi (kalp yetersizliği nedeni ile plansız yatış ve acil başvuru) dapaglflozin grubunda anlamlı olarak daha iyiydi. İlaca bağlı yan etki insidansı gruplarda benzerdi. EF'si <%60 ve ≥ %60 olan altgrup hastalarında da bulgular tutarlıydı.

EMPA-KİDNEY Çalışması; Empagliflozinin; böbrek hastalığının ilerlemesi ve kardiyovasküler olaylar üzerine olan etkisi ve ilacın güvenlik profili araştırıldı. Toplam GFR ≥20 to <45 mL/dk/1.73 m2 yada GFR>45 ve albümin/kreatin >200 olan 6609 KBY hastalası dahil edildi. Diyabetten bağımsız olarak empagliflozin tedavisinin plaseboya göre böbrek hastalığında ilerleme ve KV nedenli ölümde azalma sağlamıştır.

# ORAL PRESENTATIONS

## [OP-01]  A SIMPLE PARAMETER PREDICTING RECURRENCE IN ATRIAL FIBRILLATION PATIENTS UNDERGOING CATHETER ABLATION: TRACHEAL CARINA ANGLE

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**Background:** Catheter ablation is a well-known and appropriate treatment modality in terms of side-effect profile and efficacy compared to anti-arrhythmic drugs in the treatment of Atrial Fibrillation (AF). However, our knowledge on success criteria and prediction of recurrence in patients undergoing catheter ablation is still limited. Previously various clinical, laboratory and imaging methods have been used to assess the recurrence of AF after ablation procedure.

**Aims:** The aims of this study are to investigate the effects of epicardial fat volume, Left atrium(LA) and Pulmonary vein(PV) measurements evaluated with multimodal imaging methods, in addition to laboratory and clinical parameters, on acute and long-term outcomes of AF ablation.

**Methods:** 210 patients with AF who underwent catheter ablation were enrolled in the study, which was designed as a retrospective cohort model. Due to insufficient data, 22 patients were excluded before the analysis phase. In the biostatistical analysis, T-test, Mann-Whitney and Fisher's exact test were used in accordance with the data characteristics. The receiver-operating characteristic (ROC) curve was used to determine the cut-off for variables with a statistically significant p value to predict the recurrence.

**Results:** A total of 188 patients are included in the study cohort. Among the studied 188 cases, AF recurrence occurred in 32 (17%). A ROC curve analysis showed that the best cut-off value of Tracheal Carina Angle (TCA) for predicting recurrence was 58.5 degree with a sensitivity and specificity of %72 and %80, respectively (AUC,0.809; %95 CI, 0.712-0.906). Also epicardial fat volume appeared to somewhat statistically related with AF recurrence with a P value of 0.07. Of note, pulmonary vein angles in transverse section were insignificant in a scope of AF recurrence(RSPV p=0.7;RIPV p=0.3;,LSPV p=0.3;LIPV p=0.3).

**Conclusion:** The left atrial enlargement pattern affects the pulmonary vein orientation, especially due to proximity to tracheal carina, left and right main bronchus. Previous studies have shown that pulmonary vein orientation is an important indicator for recurrence after catheter ablation in patients with AF. In this study, the TCA was significantly correlated with recurrence after catheter ablation.

**Keywords:** atrial fibrillation, catheter ablation, left atrial enlargement, multimodal imaging, recurrence

### Figure 1
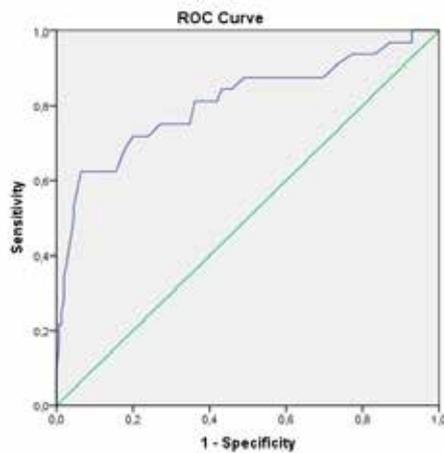


*ROC curve analysis of Tracheal Carina Angle*

### Table 1

**Table 1. Characteristics of Catheter Ablation patients**

| Characteristics | Participants, n (%) | No recurrence | Recurrence | TEST | P value |
|---|---|---|---|---|---|
| Age, (± SD) | 58.1±11.1 | 58.3±11 N(156) | 57.1±11.4 N(32) | T test | 0.6 |
| Male, n (%) | %52 | %54 N(156) | %40 N(32) | Fisherman exact test | 0.17 |
| Weight, kg,(±SD) | 83.5±14.1 | 84±14.4 N(139) | 80.7±12 N(28) | T test | 0.25 |
| Height, cm,(±SD) | 1.67±0.9 | 1.68±0.9 N(139) | 1.66±0.6 N(28) | T test | 0.53 |
| BMI, kg/m²,(±SD) | 29.5±5.1 | 29.7±5.3 N(139) | 28.5±4.3 N(28) | T test | 0.22 |
| CHA₂DS₂-VASc | 2.18±1.5 | 2.25±1.5 N(155) | 1.87±1.3 N(32) | T test | 0.2 |
| LVEF, %,(±SD) | 59.6±11.5 | 58.8±12.3 N(156) | 63.2±4.1 N(32) | Mann-whitney | 0.2 |
| Ladia, mm,(±SD) | 43±5.6 | 43.1±5.7 N(155) | 42.6±5.2 N(32) | T test | 0.66 |
| LSPV, degree,(±SD) | 75.6±10.3 | 76±10.5 N(155) | 73.9±9.1 N(32) | T test | 0.3 |
| Left atrial Appendage, ml,(±SD) | 7.63±4.32 | 7.76±4.2 N(156) | 7.01±4.8 N(32) | Mann-whitney | 0.12 |
| Epicardial fat volume (EFV), ml,(±SD) | 42±24.8 | 43.4±25.4 N(156) | 35.2±21.1 N(32) | Mann-whitney | 0.07 |
| RIPV, degree,(±SD) | 100±8.2 | 101±8.4 N(156) | 99.7±7.2 N(32) | Mann-whitney | 0.3 |
| LIPV, degree,(±SD) | 53.6±15.3 | 54.1±11.8 N(156) | 51.1±17.3 N(32) | T test | 0.3 |
| RSPV, degree,(±SD) | 136±14 | 136±13.9 N(156) | 137±14.6 N(32) | T test | 0.7 |
| Tracheal carina angle (TCA), degree,(±SD) | 50.2±16.3 | 46.8±13.8 N(155) | 67±17.6 N(32) | T test | 0.001 |
| Left Atrial Volume, ml,(±SD) | 123±51.5 | 123±51 N(156) | 125±54 N(32) | T test | 0.81 |

*Characteristics of Catheter Ablation patients*

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**[OP-02]   A SINGLE CENTER EXPERIENCE OF THE Z-STITCH TECHNIQUE AS A METHOD OF HEMOSTASIS IN ATRIAL FIBRILLATION PATIENTS TREATED WITH CRYOBALLOON ABLATION**

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*Başakşehir Çam ve Sakura City Hospital*

**Introduction:** Hemostasis is crucial in preventing complications and ensuring patient safety during and after invasive procedures. In the setting of cryoballoon-based AF ablation procedures, where larger delivery sheaths are used and the patients requires to be anticoagulated, the risk of bleeding-related complications can be higher. The Z-stitch or figure of eight suture technique is an alternative that has been shown to be safe and effective.

**Tools and Method:** All patients who underwent cryoballoon ablation between April 2020 and January 2023 at Başakşehir Çam ve Sakura City Hospital were included in the study retrospectively. During the procedure, all patients were given 2500 IU unfractionated heparin before septal puncture. After successful septal puncture, a complementary dose of heparin was administered, with a total dose of 100u/kg based on weight. Activated clotting time (ACT) was measured at 25-30 minute intervals and aiming to reach values between 300-350, additional doses were administered when necessary. At the end of the procedure, the delivery catheter with an outer diameter of 15 fr was removed in the catheter laboratory by applying the z-stitch method without the use of protamine administration. After the first knot was tied, the 15 fr catheter was pulled out and the second knot was tied. After 15-20 seconds of observation of the procedure area to confirm absence of bleeding, the procedure was terminated by covering it with sterile gauze. All patients were mobilized after a 4-hour sandbag follow-up over the access site. Stitches were removed the next morning.

**Results:** The Z-stitch technique was used on 252 patients, with 132 being female and 120 being male. The average age of patients was 58.11±11.7 years old. The Z-stitch effectively stopped bleeding in 93.2% (235 patients) and achieved rapid hemostasis. In 5.6% (14 patients) a light compression was needed due to loose sutures. In 3 patients, the knot snapped, requiring long-term compression for hemostasis. Only 4 patients had uncomplicated hematoma and there were no other complications at the access site. Descriptive statistics are presented in table 1.

**Discussion:** Hemostasis can be achieved by the Z-stitch method without major vascular complications and with a low hematoma rate. It is an easy-to-learn and cost-effective technique. It shortens the bed rest time after the procedure and reduces patient discomfort. Also, medical staff in EP lab is prevented from time consumption of manuel compression technique.

**Keywords:** Z-stitch, hemostasis, anticoagulation, cryoballoon ablation

**Z-Stitch**
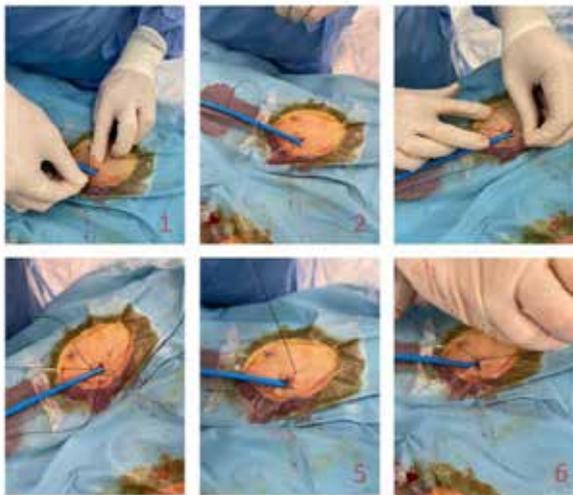


*Step-by-step application of Z-stitch*

**Table-1**

| | |
|---|---|
| Age (years), mean (SD) | 58.11±11.7 |
| Sex (female), n(%) | 132 (%52.4) |
| Hypertension, n(%) | 113 (%44,8) |
| Diabetes Mellitus, n(%) | 51(%20.2) |
| Coronary Arter Disease, n(%) | 56(%22.2) |
| Heart Failure (LVEF<%50), n(%) | 15(%5,9) |
| Cerebrovascular Disease, n(%) | 6(%2.3) |
| Smoker, n(%) | 65(%25,7) |
| CHA2DS2-VASc (2 or Higher), n(%) | 139 (%54,9) |
| Acetylsalicylic Acid, n(%) | 12 (%4,7) |
| Warfarin or NOAC, n(%) | 152(%60,3) |
| Left Atrial Diameter(mm), mean (SD) | 37,13±9,8 |
| Unsuccesful haemostasis (Manuel compression needed), n(%) | 17 (%6,7) |
| Access Site Complications, n(%) | 4(%1,5) |

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**[OP-03]  COMBINATION OF ATRIAL FIBRILLATION ABLATION WITH LEFT ATRIAL APPENDAGE ELECTRICAL ISOLATION AND DEVICE OCCLUSION IN A SINGLE PROCEDURE: A SINGLE CENTER EXPERIENCE**

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**Background:** Atrial fibrillation (AF) is the most common sustained cardiac arrhythmia. The left atrial appendage (LAA) has been shown to be the source of thrombi in up to 90% of the patients with non-valvular AF. Catheter ablation is an effective treatment for symptomatic AF. LAA electrical isolation is reported to improve AF ablation outcomes. However, loss of LAA mechanical function may increase thromboembolic risk.

**Objective:** The aim of this study is to share our experience with the feasibility and outcomes of combining AF ablation with LAA electrical isolation and device occlusion in a single procedure.

**Methods:** We retrieved our data about patients with AF who underwent AF ablation, LAA electric isolation, and occlusion between 2022 and 2023 at our center. All interventions were performed under general anesthesia with uninterrupted oral anticoagulation and evaluated with fluoroscopic guidance and transesophageal echocardiography (TEE). First ablation procedures were performed with cryoballoon ablation (CA). It was performed with the CARTO 3 electro anatomical mapping system in patients who had previously undergone CA. Patients were discharged on the day after the procedure once a transthoracic echocardiography and a fluoroscopy check confirmed the stable position of the LAA occluder device and the lack of any sign of pericardial effusion. All patients underwent anticoagulation therapy for at least 2 months after the procedure. TEE was performed to rule out any thrombus and residual leakage one month after the procedure.

**Results:** Five patients (age 68.20±5.76 years) with AF (2 paroxysmal and 3 persistent) underwent AF ablation. Five patients (100%) had previous stroke/TIA episodes, 3 patients (60%) had gastrointestinal bleeding while on OAC therapy. Baseline characteristics of study population are summarized in Table 1. Pulmonary vein isolation and LAA electrical isolation were achieved with CB ablation in 3 patients (60%). Non-PV triggers and LAA isolation were performed with RF ablation in 2 patients (40%) who had previously undergone CA. All patients underwent LAA device occlusion with the Amplatzer Amulet Ocluderr. In one of the cases, a slight pericardial effusion was noticed at the end of the procedure, without hemodynamic compromise and discharged 4 days after the procedure without any intervention. Four patients (80%) had complete sealing, 1 patient (20%) showed a residual flow (<3 mm) at first TEE check at first month. Two patients (40%) discontinued OAC therapy 2 months after the procedure. Over the follow-up (4.4±2.88 months) atrial arrhythmias recurred in 1 (20%) patient. No device-related complications or clinical thromboembolic events occurred. Procedural and peri-procedural parameters are summarized in Table 2.

**Conclusion:** The combination of atrial fibrillation ablation with left atrial appendage electrical isolation and device occlusion in a single procedure may be feasible, safe, and effective.

**Keywords:** Atrial fibrillation, Atrial fibrillation catheter ablation, Left atrial appendage electrical isolation, Left atrial appendage occlusion

### Tabe 2

**Table 2: Procedural and peri-procedural parameters**

| Procedure, n (%) | |
|---|---|
| Cryoballoon ablation | 3 (60%) |
| RF Catheter Ablation | 2 (40%) |
| Device Size | |
| 22 mm | 3 (60%) |
| 28 mm | 2 (40%) |
| **Intra Operative TEE, n (%)** | |
| Successful occlusion | 5 (100%) |
| Residual leakage (≤ 3 mm) | 1 (20%) |
| Slight pericardial effusion | 1 (20%) |
| **Complications, n (%)** | |
| Pericardial effusion required drainage | 0 |
| Device embolization | 0 |
| Stroke/TIA | 0 |

Categorical variables are reported n (%).
Abbreviations: RF; Radiofrequency, TEE; Transesophageal Echocardiography, TIA; Transient Ischemic Attack

### Table 1

**Table 1. Baseline Characteristics and Laboratory Findings**

| Variables | (n=5) |
|---|---|
| **Baseline characteristics** | |
| Age (years), mean (SD) | 68.20±5.76 |
| Gender (female), n (%) | 4 (80%) |
| Diabetes Mellitus, n (%) | 2 (40%) |
| Hypertension, n (%) | 5 (100%) |
| Body Mass Index (kg/m²) | 30.58±3.31 |
| Atrial Fibrillation Type (paroxysmal), n (%) | 2 (40%) |
| Left Ventricular Ejection Fraction (%) | 52±13.50 |
| Left Atrial Diameter (mm), mean (SD) | 45.40±6.50 |
| CHADVASC Score, mean (SD) | 5.80±2.04 |
| HASBLED Score, mean (SD) | 3.20±0.44 |
| Previous stroke/TIA during OAT, n (%) | 5 (100%) |
| Contraindication to OAT, n (%) | 3 (60%) |
| Intracranial bleeding | 0 |
| Gastrointestinal bleeding | 3 |
| **Laboratory Findings** | |
| Creatinine (mg/dl; SD) | 0.79±0.16 |
| WBC (x10³ /µL; SD) | 7.95±2.34 |
| Neutrophil (x10³ /µL; SD) | 5.36±2.44 |
| Lymphocyte (x10³ /µL; SD) | 2.19±0.95 |
| Hemoglobin (g/dL; SD) | 12.52±0.37 |
| Platelets (x10³ /µL; SD) | 272±66.36 |
| ALT(U/L) | 34.60±19.96 |
| AST (U/L) | 22.80±11.98 |
| **Medications** | |
| Clopidogrel, n (%) | 1 (20 %) |
| NOAC, n (%) | 5 (100%) |

*Continues variables are reported (mean±SD). Categorical variables are reported n (%).
Abbreviations: ALT; Alanine transaminase, AST; Aspartate transaminase, NOAC; Novel oral anticoagulants, OAT; Oral anticoagulation therapy, WBC; White Blood Cell.

**[OP-04]** **HYBRID APPROACH TO GIANT PACEMAKER DECUBITUS: DEVICE EXTRACTION AND BATTERY POCKET RECONSTRUCTION**

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*İzmir Katip Çelebi Üniversitesi Tıp Fakültesi*

**INTRODUCTION:** Despite all precautations, CIED infections continue to occur and can be life-threatening.

In this article, we planned to focus on the preferred and recommended treatment methods in the treatment of battery pocket infection.

**CASE REPORT:** A 64-year-old female patient was admitted to our outpatient clinic with complaints of lead-associated skin erosion and infection.

She has a history of diabetes, chemotherapy for breast cancer 7 years ago, and a right mastectomy operation. The patient had VVI ICD implantation due to nonischemic cardiomyopathy 5 months ago in another center. One month after the device was implanted, the battery pocket was revised due to infection in the battery place. One month after the pocket revision, the patient who had decubitus in the battery pocket, underwent flap operation under general anesthesia by plastic surgery. 20 days after this intervention, the patient was referred to our clinic with the separation of the surgical suture lines and a new battery decubitus (Figure 1). Ekg showed incomplete right bundle branch block in sinus rhythm. In laboratory parameters, procalcitonin value was negative and CRP value was minimally higher than the upper limit. (7.29mg/L)

The ejection fraction was calculated as 25% in echocardiography and no vegetation was observed on the lead.

Battery extraction and wound closure were planned as a hybrid procedure with the plastic surgery clinic for the patient. After removal of the lead and battery in operating room conditions, pocket revision was performed by plastic surgery. Post-procedure antibiotic treatment was completed in 21 days.

Since the patient's EF was 30%, he was evaluated for re-implantation of the ICD. Since the patient had a history of mastectomy on the right, no new ICD was implanted from the right pericordial region. Appropriate wound care technique was explained to the patient and it was decided to wait for the operation area to recover completely. It was decided to re-evaluate the patient 3 months later on whether to insert an ICD again from the left precordial region.

The battery pocket image of the patient before discharge is as in Figures 2.

Discussion and Conclusion

The first issue to be addressed in the treatment of CIED infection is the approach to CIED removal. As new technologies come out and experience grew, percutaneous lead extraction became the preferred method for CIED removal.

On the other hand, pocket revision is a treatment method that has recently been abandoned and is no longer recommended because of the increased risk of recurrent CIED-related infections. As a Class IIb recommendation in the 2010 AHA CIED Guidelines for Associated Infections and Management, complete device and lead extraction are recommended for all patients with CIED pocket infection evidenced by abscess formation, device erosion, skin adhesion, or chronic draining sinus without clinically significant involvement of the transvenous part of the lead system.

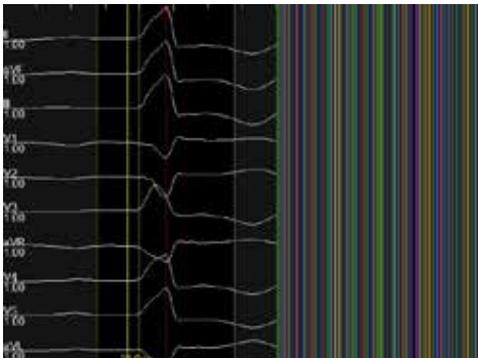**Keywords:** Extraction, İnfection, Pacemaker

**Figure 1**



**Figure 2**

**[OP-05]    PARAMETERS AFFECTING LONG-TERM SUCCESS AFTER PREMATURE VENTRICULAR COMPLEX ABLATION PERFORMED BY 3-DIMENSIONAL MAPPING: FIRST EXPERIENCES WITH THE EVERPACE COLUMBUS V2.0 SYSTEM**

Osman Pirhan

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**Aim:** It is accepted that the rates of success with radiofrequency catheter ablation (RFCA) in the elimination of premature ventricular complexes (PVC) are higher compared to medical treatment. RFCA procedures have become easier and safer with evolving technologies such as 3D mapping. In the current study, we aimed to focus on the reasons that affect long-term success of RFCA.

**Methods:** Patients who underwent RFCA procedure due to PVC burden despite medical therapy were included in the study. The RFCA procedure was performed in all patients by the Everpace Columbus V2.0 system. The patients included to the study were divided into two separate groups according to the PVC frequency at the 24-hour ECG holter follow-up for at least 6 months. Patients who has PVC frequency less than 5% within 24 hours at ECG monitoring were determined as 'Successful RFCA' group and those with a PVC count of more than 5% were determined as 'Unsuccessful RFCA' group. Measurement of the earliest activation time for bipolar electrograms was obtained by measuring the distance between the first deflection in local bipolar recordings and the first QRS deflection wave on a surface ECG. Measurement of the earliest activation of unipolar electrograms were obtained by measuring the distance between the first negative deflection wave and the first QRS deflection.

**Results:** Mean age of the 15 patients included in the study was 58.2±12.3 years, and 5 of the patients (33.3%) were women. CAD in 4 patients and HT in 3 patients were present in the failed RFCA group, these diseases were not present in patients in the successful RFCA group, and the difference between two groups was statistically significant (p value: 0.013 and 0.038, respectively). Patients in the successful RFCA group were significantly younger compared with the patients in the unsuccessful RFCA group (51.88±12.43 years, 65.43±7.87 years; p value: 0.028). In addition, the ejection fraction was significantly higher in patients in the Successful RFCA group (56.87±7.52 vs 45.85±7.75; p value: 0.015), the left atrium diameter was smaller (36.12±2.10 vs 43.14±4.29; p value: 0.001). The mean onset time of the earliest activation time in bipolar electrograms was 45.75±12.80 ms in successful RFCA patients, while it was 29.00±16.99 msn in the unsuccessful RFCA group, and the difference was statistically significant (p value: 0.049). The total procedure time was significantly shorter in the successful RFCA group than unsuccessful group (59.87±21.05 min. vs 79.28±6.72 min.; p value: 0.037).

**Conclusion:** The main findings of our study is the successful elimination of PVCs with RFCA in the long term may relate with the patient's age, CAD, HT presence, EF, LA diameter and the onset of early local activation in bipolar records. The onset of earliest activation in bipolar records is 45 ms and more may favor of eliminating PVS in the long term. If this interval is 29 ms and below seems to be associated with unsuccessful results.

**Keywords:** premature ventricular contractions, catheter ablation, bipolar electrogram

### Figure 1



*Measurement of local activation on bipolar records*

**Table 1:** Comparison of Successful and Unsuccessful RFCA groups in terms of demographic, clinical and electrophysiological characteristics

| | Successful RFCA (n:8) | Unsuccessful RFCA (n:7) | P value |
|---|---|---|---|
| Age (years) | 51.88±12.43 | 65.43±7.87 | 0.028 |
| Sex (female) (n,%) | 3 (37.5) | 2 (28.6) | 0.714 |
| CAD (n,%) | 0 | 4 (57.1) | 0.013 |
| HT (n,%) | 0 | 3 (42.9) | 0.038 |
| DM (n,%) | 1 (12.5) | 2 (28.6) | 0.438 |
| EF (%) | 56.87±7.52 | 45.85±7.75 | 0.015 |
| LA Diameter (mm) | 36.12±2.10 | 43.14±4.29 | 0.001 |
| Onset of LAT of Bipolar electrogram (msn) | 45.75±12.80 | 29.00±16.99 | 0.049 |
| Onset of LAT of Unipolar electrogram (msn) | 63.62±20.92 | 54.00±12.80 | 0.311 |
| Slow slope (n,%) | 3 (37.5) | 0 (0) | 0.070 |
| Notch (n,%) | 2 (25) | 2(28.6) | 0.876 |
| Procedure time (min) | 59.87±21.05 | 79.28±6.72 | 0.037 |

RFCA: Radiofrequency catheter ablation CAD: Coronary artery disease, HT: Hypertension, DM: Diabetes mellitus, EF: Ejection fraction, LA: Left Atrium, LAT: Local activation time

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**ORAL PRESENTATIONS**

**[OP-06]**   **THE FREQUENCY OF DEVELOPMENT OF ATRIAL FIBRILLATION/ATRIAL FLUTTER AND ITS ASSOCIATED CONDITIONS IN LONG-TERM FOLLOW-UP AFTER PERCUTANEOUS CLOSURE IN PATIENTS WITH ATRIAL SEPTAL DEFECT AND PATENT FORAMEN OVALE**

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**Background:** Transcatheter treatment of secundum type atrial septal defects (ASD) and patent foramen ovale (PFO) has been carried out with success, especially in the last two decades. Our knowledge of atrial fibrillation (AF) and atrial flutter (AFL) development, which is the major cause of morbidity in this population, is limited. The balloon sizing technique applied to determine the diameter of the device to be used during the ASD and PFO closure process via transcatheter procedures has been accepted as the basic technique for many years.

**Purpose:** The aim of our study is to evaluate the development, frequency and associated conditions of atrial fibrillation and atrial flutter in short and long-term follow-up after percutaneous closure in patients with the atrial septal defect and patent foramen ovale.

**Methods:** Between January 2011 and December 2019, patients aged 18 years and older who underwent secundum-type ASD and PFO with transcatheter closure were screened retrospectively. Patients with AF/AFL before the procedure were excluded. The effects of different methods used in the procedure on the success and complications of the procedure and especially on the development of atrial tachyarrhythmia were examined.

**Results:** Atrial fibrillation or atrial flutter (atrial tachyarrythmia) was observed at any time during the follow-up period in 34 (18.6%) of 183 patients included in the study. No significant difference was observed in the gender. Who developed atrial tachyarrhythmia were found to have a higher age (p = 0.001) (Table 1). When echocardiographic parameters were considered, a significant difference was found in the left ventricular ejection fraction (LVEF), before and after the procedure, left atrium (LA) diameter, post-procedure RV diameter and PAB measurements (respectively p<0,05; p=0,05; p<0,01; p<0,05; p<0,001) (Table 1). When we look at the technical difference applied in the procedure, atrial tachyarrhythmia was observed in 18.1% of 116 patients without balloon sizing and in 19.4% of 67 patients with balloon sizing. There was no statistically significant difference in terms of atrial tachyarrhythmia with or without balloon sizing (p=0.828). When we examined the fluoroscopy times during the procedure due to technical differences, we found the mean fluoroscopy time was 22 ± 12.4 minutes in the balloon sizing group and 10.7 ± 15.9 minutes in the non-performed group. Balloon sizing technique significantly increases the duration of fluoroscopy time (p <0.001) (Table 2).

**Conclusion:** In our study, we showed that performing balloon sizing does not make a difference in terms of the success of the procedure, but it significantly increases the duration of the procedure and fluoroscopy. Our study supports the view that it is not necessary to use the balloon sizing technique in the process, which has become controversial in recent years, and suggests that it can only be successfully and reliably performed under TEE guidance.

**Keywords:** Ballon sizing, Percutaneous closure in patients with atrial septal defect, Relationship between ASD and atrial fibrillation

**Table 1**

Table 1 Echocardiographic parameters before and after the procedure according to the sinus/atrial tachyarrhythmia rhythm of the patients

| | | SINUS RHYTHM | AF/AFL | P değeri |
|---|---|---|---|---|
| AGE | Mean Median | 41.2 ± 13.6 41 (18-77) | 50.1±14.2 52 (20-89) | 0.001 |
| PRE-PROCEDURE LVEF | Mean Median | 60.8 ± 2.4 60 (55-68) | 57.8 ± 4 60 (50-60) | <0.05 |
| PRE-PROCEDURE LA | Mean Median | 3.5 ± 0.4 3.6 (23-4.4) | 4 ± 0.8 3.9 (2.9-5.8) | 0.05 |
| PRE-PROCEDURE RV | Mean Median | 3.5 ± 0.6 3.5 (2.3-4.9) | 3.8 ± 0.6 3.7 (2.6-5.3) | 0.268 |
| PRE-PROCEDURE PAB | Mean Median | 35 ± 18.2 35 (10-90) | 40.8 ± 14.7 43.5 (10-65) | 0.066 |
| POST-PROCEDURE LVEF | Mean Median | 60.8 ± 4.2 60 (35-71) | 61 ± 3.7 60 (35-71) | 0.755 |
| POST-PROCEDURE LA | Mean Median | 3.5 ± 0.4 3.5 (2.1-5) | 4.1 ± 0.7 4 (3-5.9) | <0.001 |
| POST-PROCEDURE RV | Mean Median | 2.9 ± 0.5 2.8 (2-5) | 3.3 ± 0.6 3.3 (2.4-4.4) | <0.05 |
| POST-PROCEDURE PAB | Mean Median | 22.9 ± 8.7 23 (10-45) | 32.1 ± 12.7 31 (10-70) | <0.001 |

*Echocardiographic parameters before and after the procedure according to the sinus/atrial tachyarrhythmia rhythm of the patients*

**Table 2**

| Table 2 Fluoroscopy times according to the technique used in the procedure | | | | |
|---|---|---|---|---|
| **BALLON SIZING** | **Number of Patients (N)** | **Mean** | **Std. Deviation** | |
| Not used | 107 | 10,7 mn | 15.9 | P <0.001 |
| Used | 52 | 22 mn | 12.4 | |

*Fluoroscopy times according to the technique used in the procedure*

**ORAL PRESENTATIONS**

**[OP-07]  CHALLENGES AND TECHNIQUES IN CARDIAC DEFIBRILLATOR IMPLANTATION VIA PERSISTENT LEFT SUPERIOR VENA CAVA**

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*Ankara Etlik City Hospital*

**Introduction:** Persistent left superior vena cava (PLSVC) is a congenital vascular anomaly found in 0.3–2% of healthy individuals. Implanting a pacemaker or an implantable cardioverter defibrillator (ICD) lead through the PLSVC can be technically challenging, especially without a bridging innominate vein connecting the PLSVC and right superior vena cava. This article presents a successful case of ICD placement via PLSVC.

**Case:** In our case, a 56-year-old female patient with ischemic cardiomyopathy was scheduled for cardiac defibrillator placement for primary prevention. During left subclavian vein puncture, the presence of PLSVC was identified. Venography confirmed that this vein drained into the right atrium through the dilated coronary sinus. Despite repeated attempts, the ICD lead could not pass from the tricuspid valve to the right ventricle. By advancing the ICD lead to the right atrium and directing the tip of the gooseneck-shaped stylet electrode toward the right ventricle with clockwise rotation, the electrode successfully crossed the tricuspid valve and was positioned in the basal right ventricular outflow tract (RVOT).

**Discussion:** Placing a lead via PLSVC can be difficult and, in some cases, impossible, particularly when it comes to right ventricular lead implantation due to the deflection of the lead tip away from the tricuspid annulus. Previously, the left approach was not preferred in PLSVC cases, and electrode placement was recommended through the right subclavian approach or surgical epicardial route. However, it has been demonstrated that successful electrode placement can be achieved via the left subclavian vein using various methods. In our case, we preferred to insert a gooseneck (such as an Amplatz coronary catheter) to the tip of the stylet, unlike the known techniques, and we found that it was easily inserted into the RVOT baseline with slight clockwise rotation. Implantable cardioverter defibrillator (ICD) leads have traditionally been placed at the right ventricular apex (RVA). Increasingly non-apical right ventricular (RVNA) lead positions have been suggested as an alternative pacing site. In patients where the advancement of the ICD lead to the apex becomes challenging due to the presence of a right angle, alternative approaches such as RVOT baseline and high septum can be considered.

**Conclusion:** The presence of PLSVC does not preclude left-sided placement of the electrode and device. Our opinion that when such a situation is encountered, the process should be continued via PLSVC instead of immediately moving to the right side. In addidition gooseneck stylet technique may reduce the procedure time and radiation exposure, and could make the implantation feasible in cases where the traditional techniques have failed. It should be kept in mind that ICD lead placement may also occur in non-apex regions, provided that it remains within safe limits.

**Keywords:** persistent left superior vena cava, implantable cardioverter defibrillator, ischemic cardiomyopathy

**After the ICD implantation**



**Persistent Left Superior Vena Cava**

**[OP-08]   NEW-ONSET ATRIAL FIBRILLATION AFTER EXENATIDE INJECTION: COINCIDENCE OR CONSEQUENCE?**

Yakup Yunus Yamanturk, Kerim Esenboga, Gozde Cansu Yilmaz, Basar Candemir

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**BACKGROUND:** Glucagon-like peptide-1 receptor agonists (GLP-1 RAs) are incretin mimetics and are widely used in the treatment of T2DM due to their potent antihyperglycemic effects. GLP-1 RAs have also been shown to have many positive cardiovascular effects, including a reduction in blood pressure and total cholesterol. However, their use has been associated with an increase in heart rate. Additionally, it is assumed that these drugs may have an effect on atrial arrhythmogenesis through their direct and indirect effects.

**CASE REPORT:** A 71-year-old female with a history of T2DM, hypertension, gout, obesity, essential tremor, and chronic kidney failure had a fasting blood glucose level ranging from 80-200 mg/dL at home and a postprandial blood glucose level ranging from 200-250 mg/dL. In this patient whose HbA1c value was 7%, oral antidiabetic agents were insufficient and the patient's BMI was above 35, so it was planned to start the patient with short-acting exenatide. After exenatide injection, the patient had nausea and vomiting, and AF with high ventricular response was detected in her ECG, which was taken upon the presentation of palpitations (Figure 1). Thereupon, exenatide treatment was stopped. The dose of propranolol that the patient had previously used for essential tremor was increased from 2*20 mg to 3*40 mg. Anticoagulant treatment was started with a dose appropriate for GFR to the patient with a CHA2DS2-VASc score of 4. During follow up, renal function deterioration was observed, iv hydration was started considering prerenal acute kidney injury due to vomiting. No methabolical abnormalities and thyroid dysfunction that could trigger AF were detected. On the next day, a control ECG was taken and it was seen that the patient spontaneously returned to sinus rhythm (Figure 2).

**RESULTS& DISCUSSION AND CONCLUSION:** It can be thought that the increase in heart rate and autonomic tone fluctuation caused by exenatide together with the 1st degree AV block seen in the basal ECG of our patient may lead to an increase in intraatrial pressure (Figure 3,4). The increase in the rate and organization of depolarization waves emanating from the cells with automaticity in the pulmonary vein, which is thought to have an important place in the pathogenesis of atrial fibrillation, may have played a decisive role in the mechanism specific to our case (10). On the other hand, because a patient with a high CHA2DS2-VASc score may already have atrial myopathy, it is difficult to exclude incidental AF independent of exenatide injection as a natural process. Another limitation that prevented us from supporting our argument was that we did not try the drug again in this patient.

Beyond all these arguments, there are studies showing that exenatide and other GLP-1 RAs have protective effects especially on ventricular arrhythmogenesis in the long term, and the possible negative effects we mentioned may be acute and temporary (11,12).

**Keywords:** atrial fibrillation, exenatide, GLP-1 RA, triggered arrhythmia

## Figure 1
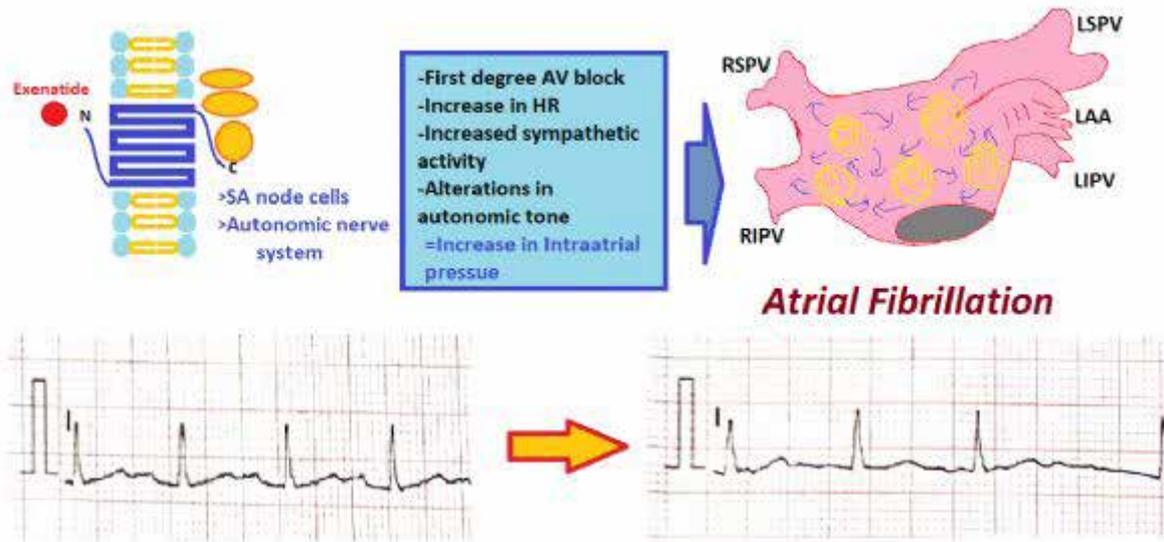


*Possible responsible mechanisms in the patient suspected of Triggered AF due to exenatide*

**[OP-09]  SHOULD WE REPLACE DEVICES WITH NO EVENT RECORDED BEFORE?**

Ahmet Anil Başkurt, Ferhat Siyamend Yurdam

*Bakırçay Üniversitesi Çiğli Eğitim ve Araştırma Hastanesi, İzmir, Türkiye*

**Objective:** For primary prophylaxis, the ICD is recommended in the guidelines. With increasing treatment options in recent years, mortality has decreased and primary prophylaxis ICD has become controversial. In daily practice, devices that run out of battery are replaced. Here, we are looking for the answer to the question of whether we should replace the devices that did not have an event record until the replacement.

**Method-Results:** We included patients with ICD who underwent replacement for primary prophylaxis between 2015 and 2023. The mean age of the patients is 65.98 years. The mean LVEF is 30.10. Of the patients, 62% were male, 28% had coronary artery disease, 68% had hypertension and 37% had diabetes. Of these patients, 51 had no events before the replacement (group 1) and 9 did (group 2). There was no significant difference between the groups in terms of coronary artery disease, diabetes, hypertension, creatinine and hemoglobin. Although not statistically significant, there was a numerical difference in LVEF rates between the two groups. There is a statistically significant difference between these two groups in terms of all-cause mortality. (Table 1) Complication rates during replacement are 25%, which is higher than the literature. The complication rate is higher in patients who have experienced an event before. This was explained by the general clinical condition of the treated patients.

While 10 of 51 patients experienced a post-replacement event, there was no post-replacement event in the other group.

**Conclusion:** Considering this situation, replacement should be performed in patients who have not experienced an event before the procedure. It should be supported by larger studies with developing treatment options.

**Keywords:** ICD, Primary prophylaxis, Replacement

**Table 1**

|  | Group 1 n: 51 | Group 2 n:9 | P |
|---|---|---|---|
| Age | 65,86±9,67 | 66,67±12,95 | 0,828 |
| Women n,% | 22,(%43) | 1,(%11) | 0,068 |
| HT n,% | 34,(%67) | 7(%78) | 0,509 |
| CAD n,% | 14,(%27) | 3(%33) | 0,718 |
| CKD n,% | 11,(%22) | 1(%11) | 0,189 |
| DM n,% | 19,(%37) | 3(%33) | 0,822 |
| LVEF% | 31±12,0 | 25±8,67 | 0,157 |
| Creatinin | 1,06±0,45 | 1,01±0,23 | 0,747 |
| Hemoglobulin | 13,03±1,85 | 11,82±1,57 | 0,076 |
| All couse mortality n,% | 8,(%16) | 6(%67) | 0.003 |

**[OP-10]**    **A RARE SOURCE OF IATROGENIC VT: SEPTAL ANEURYSM DUE TO PVC ABLATION**

Kübra Korkmaz, Yakup Yunus Yamantürk, Ali Timuçin Altın, Emir Baskovski, Başar Candemir, Ömer Akyürek

*Ankara Üniversitesi, Kardiyoloji Anabilim Dalı, Ankara*

**Introduction:** Catheter ablation (CA) is a widely used successful intervention method in the treatment of symptomatic frequent premature ventricular complex (PVC) and ventricular tachycardia (VT). In this case, we present the successful VT ablation procedure in a patient with PVC ablation-associated ventricular septal aneurysm.

**Case:** A 64-year-old male patient with history of ischemic heart disease was admitted to our hospital with the complaint of palpitation. The patient had documented regular wide QRS tachycardia, which could not be clearly differentiated from VT/Supraventricular tachycardia. Echocardiography was significant for a newly developed aneurysm in the interventricular septum. One year ago, patient had a CA history for high PVC burden. According to the prior procedure report, extensive ablation of basal-to-mid septum was performed for PVCs (Fig. 1). Based on this and absence of new-onset coronary event (confirmed by coronary angiography), it was presumed that the septal aneurysm may be related to the previous ablation procedure. During the electrophysiologic study tachycardia was confirmed to be a VT. Left ventricle was mapped during sinus rhythm. VT was induced however it could not be mapped because of quick termination. Isochronal late activation mapping (ILAM) and Decrement-Evoked Potential (DeEP) mapping was performed. The pace-mapping correlation was found 95% from the inferior base of the septum (Fig. 2). All target areas where ablated upon which VT was non-inducible. In a seperate procedure, a single chamber ICD was implanted to the patient for secondary prevention of sudden cardiac death. No VT episode was detected in the patient's outpatient controls.

**Discussion:** In the literature, iatrogenic VT from PVC ablation-associated septal aneurysm hasn't reported before. The patient had a predisposing factor to arrhythmia due to ischemic background and reduced LVEF. However, it was thought that the clinical VT episodes of the patient were mainly related to the reentry formed on the basis of periscar tissue due to the septal aneurysm developed as a result of ablation [1,2].

Aneurysm existence is a poor prognostic risk factor for development of ventricular arrhythmias, heart failure, and thromboembolic events after PVC ablation. Especially in patients whose VT ablation target site is a septal aneurysm, the risk of septal rupture and thrombus formation during ablation is quite high. Despite of all these factors, ablation was successfully performed.
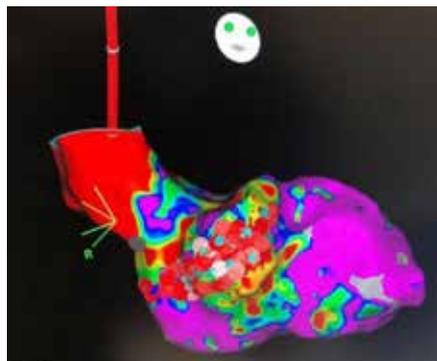
In conclusion, it should be remembered that although septum is usually a thick structure, extensive ablation may lead to aneurysm formation, which may even be a source of ventricular arrhythmias.

**Keywords:** ventriculary tachycardia, interventricular septum aneurysm, RF ablation

**similar PVC and VT morphology**
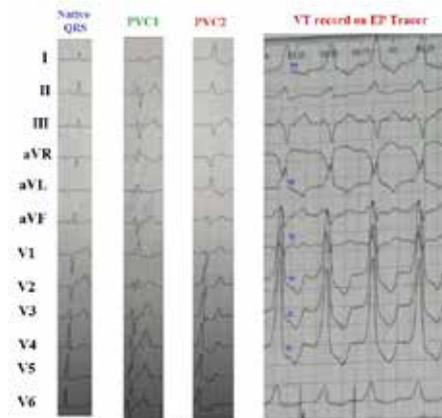


**VT voltage mapping**

KARDİYOVASKÜLER AKADEMİ KONGRESİ
&
INTERNATIONAL ACADEMY OF YOUNG CARDIOLOGISTS
CUMHURİYETİMİZİN
2023 | 100
1923 2023
20-24 EYLÜL 2023
ELEXUS HOTEL GİRNE, K.K.T.C.

**ORAL PRESENTATIONS**

**[OP-11]  CARDIAC INVOLVEMENT IN A PATIENT WITH ADCK 4 GENE MUTATION**

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**Objective:** ADCK4 (aarF Domain Containing Kinase 4) gene mutation is the second most common hereditary cause of glomerular proteinuria in adolescence. ADCK4 mutations can cause steroid-resistant nephrotic syndrome through disruption of Co-Q10 biosynthesis. The organs with the highest concentration of Co-Q10 in the tissue are respectively; heart, kidney.

**Case:** A 20-years-old female patient complains of abdominal pain, weakness, and body aches. She has a history of CKD. She was accepted as a patient with ESRD and on routine hemodialysis program and was diagnosed as nephrotic syndrome with ADCK 4 gene mutation in an external center during the examination for the etiology. Her brother was a dialysis patient and died in his age 20 years old. There is consanguineous marriage between the parents. In physical examination; general condition is moderate, conscious, oriented and cooperative. S1+, S2+, rhythmic, 3/6 systolic murmur at apex, pulses bilaterally palpable, jvd-/-, pte-/-, bilateral minimal ral+ at baseline, tenderness in abdomen, defense-, rebound-. Blood pressure:120/70 mmHg, Pulse:98/min, Sat: 97%, Fever:36,7. ECG: SR, 126/min, V5-V6 minimal ST segment depression. Urea/cre:32/2.05, eGFR: 34, LDL:64, K:3.32, Hb:10.1 and other parameters are within normal limits.

**Results:** EMG was planned for the patient with paresthesia and pain in both lower extremities. EMG result; The peroneal and tibial motor nerve response amplitude was low in the right lower extremity, the peroneal motor nerve could not be stimulated in the left lower extremity. In the abdominal USG of the patient with abdominal pain, VCI and hepatic veins were prominent, hyperechoic content was observed in the gallbladder, both kidneys were atrophic, and free fluid was observed in the abdomen and pelvic region. CTI >0.5, tented heart image, and both costophrenic sinuses were open on X-ray. CT showed biatrial enlargement, increased wall thickness, and pericardial effusion. In her echocardiography performed 3 months ago, LVEF: 50-55%, 2 MR, 1 TR, pap: 32 mmHg, LAD: 4.4, wall thicknesses increased and reported as E>A. Control Echo EF: 15-20%, LV global hypokinetic, biatrial enlargement, increased wall thickness, 2-3 MR, 2-3 TR, pap: 35 mmHg, TAPSE: 1.1 cm, VCI: 1.9 respiratory variation <50%, pericardial effusion.

**Conclusion:** The patient had no active cardiac complaints in the last 3 months. She was started treatment that Co-Q10 after genetic diagnosis and she hadn't used the treatment for 5 months. The patient was started on treatment for heart failure. Co-Q10 treatment was restarted. She was included in the routine hemodialysis program. An improvement was observed in the general condition of the patient 10-15 days after starting the treatment. The patient was started on ASA, metoprolol, ramipril, CoQ10 3x1. After 1 month, cardiology outpatient control was recommended. At the follow-up 2 months later, LVEF: 30%, 2 MR, 2 TR, pap:35 mmHg, E>A, increased wall thickness, LAD:4.6.

**Keywords:** ADCK 4, genetic, heart failure, Coenzym Q10, nephrotic syndrome

**ECG**
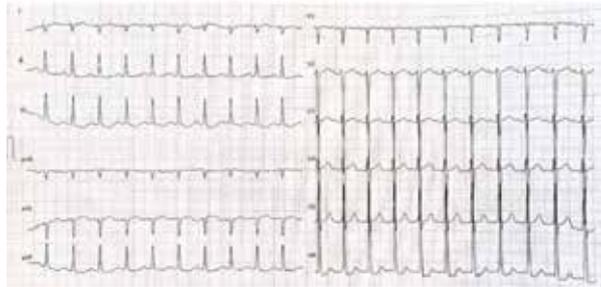


**X-ray**

**[OP-12]  CORONARY ARTERY STENT DISLODGEMENT AND TREATMENT WITH A SECOND STENT**

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*Cardiology, Bursa Yüksek Ihtisas Training and Research Hospital, Bursa, Turkey*

**BACGROUND:** Coronary stent dislodgement is infrequent but entails critical complications like myocardial infarction, thrombosis and coronary dis-section, indeed may result in sudden death. Therefore, rapid assessment and intervention are vital to restore coronary flow.

**CASE REPORT:** A 51-year-old man with no related past medical history except for diabetes and smoking, presented to the outpatient clinic with left-sided chest pain. The physical exam was unremarkable. EKG showed ST segment depression, and troponin was 0.23. After admission to the coronary intensive care unit medical treatment was initiated. He underwent cardiac catheterization, which showed 70-90% stenosis in the proximal right coronary artery (RCA). A drug-eluting stent (DES) with 2,75 mm was introduced. After positioning the stent in proximal vessel segment, the balloon within the stent was started to be inflated gradually. However, it was realized that the stent was not dilated adequately along with lack of reaching the intended opening pressure. Later, the stent with the balloon in it were retrieved outside. During pulling, the stent was dislodged from the balloon, slipped from the wire. It was noticed that balloon was blown out. The patient had chest pain similar to the previous episodes. EKG showed 1-mm elevation at ST segment in leads II, III and aVf. He underwent a repeat heart catheterization and slow coronary flow was discerned distal to the dislodged stent. The guidewire was introduced to the RCA and skipped the dislodged stent. A loop snare was introduced but failed to capture the dislodged stent. A second stent was delivered and placed overlapping the dislodged stent. Finally, TIMI III flow was secured in RCA.

**DİSCUSSİON:** The stent dislodgement has reduced considerably with the new techniques and devices [1]. The rate of complications following stent dislodgement is nearly 19% and only 3% of the dislodged stents were left untreated [1]. In current case, stent dislodgement did not result in any catastrophic complications. The dislodged stent was treated with a second stent in the coronary. At 1-month outpatient follow-up, the patient was lacking symptoms.
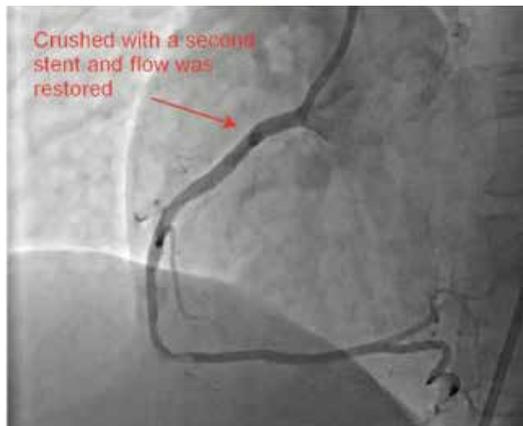
**Keywords:** stent dislodgement, complication, loop snare, stent crushing

**Figure 1**
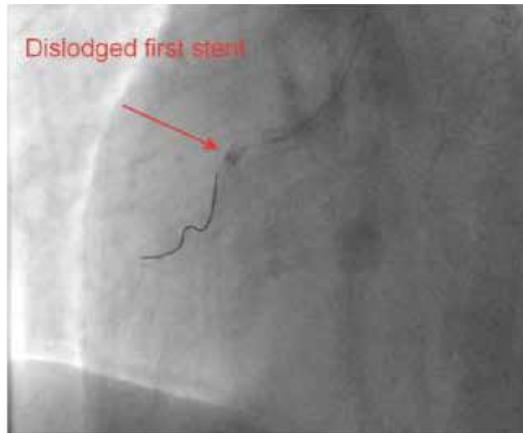


*Dislodgement of the first stent*

**Figure 2**



*Crushing of the first stent with a second stent and restoring the flow*

**ORAL PRESENTATIONS**

**[OP-15]    MANAGEMENT OF DEEP BRADYCARDIA AND HYPOTENSION DEVELOPED DURING CAROTID ARTERY STENTING: A CASE REPORT**

Hayrudin Alibasic[1], Nedret Ülvan[2], Ajar Koçak[3], Berkay Ekici[3]

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[3]Ufuk University Faculty of Medicine, Department of Cardiology, Ankara Turkey

Carotid artery stenosis is an important risk factor for ischemic stroke. Stenting with percutaneous techniques is routinely applied as an alternative to surgical endarterectomy in the treatment of such lesions. In this case report, the treatment approach for deep bradycardia and hypotension developing in a patient who underwent carotid artery stenting is described.

Case: It was reported that a 66-year-old female patient applied to the neurology outpatient clinic with complaints of darkening of the eyes and dizziness.In the CA-CT angiography examination, 50-60% stenosis in the left subclavian-artery outlet, hypoplasia of the left vertebral artery, and soft plaque causing >90% preocclusive stenosis along the 24-mm segment in the left ICA outlet were reported. After the neurology-cardiology council, it was decided to perform diagnostic carotid-vertebral angiography of the patient.DAPT in the form of 300-mg-ASA and 75-mg-clopidogrel daily was started 5-days before the procedure. Carotid-vertebral-system imaging revealed 99% stenosis in the long segment starting from the left ICA ostium, 70%-70% stenosis in bilateral vertebral arteries and 80% stenosis in the left subclavian artery. Later, in the same session, the right femoral 6F short sheath was replaced with a 7F-90-cm long sheath.The ICA lesion was passed over the guide wire and a distal protection filter was placed.The lesion was then predilated with a 3.0x15 balloon.Subsequently, an 8.0x60 mmx135 cm self-expandable stent was deployed in the lesion. A slight decrease in the patient's blood pressure was observed during stent implantation (TA:100/60 mmHg,Pulse: 65/min).Postdilatation was performed for 3 seconds with a 4.5x15 mm N/C balloon in the indented areas of the patient who was symptomatic, and full opening was achieved (Figure-1).The procedure was stopped due to the development of deep bradycardia(23/min) and hypotension (60/-mmHg) during balloon ditation.0.5 mg of Atropine IV was administered immediately. 500 cc IV 0.9% isotonic sodium chloride was administered rapidly through the antecubital vein.Although the procedure was stopped and the balloon was deflated, bradycardia and hypotension continued for 20 seconds.A forceful coughing maneuver was applied to the patient. With the addition of 0.5 mg of atropine and hydration, the heart rate increased to 70/min and the blood pressure to 110/65 mmHg.To the patient; In addition to a total of 1 mg of atropine and 500 cc IV 0.9% isotonic sodium chloride used for vagolysis, no pharmacological intervention was applied. n the post-procedure coronary intensive care observation of the patient, her vital signs continued within normal limits.

Conclusion: In conclusion, IV atropine and saline administration may be necessary from time to time in terms of hemodynamic stabilization of patients in cases of bradycardia and severe hypotension, which may occur as a result of possible carotid baroreceptor stimulation during percutaneous carotid stent implantation.

**Keywords:** Carotid artery stenting, Bradycardia, Hypotension

**Figure-1**
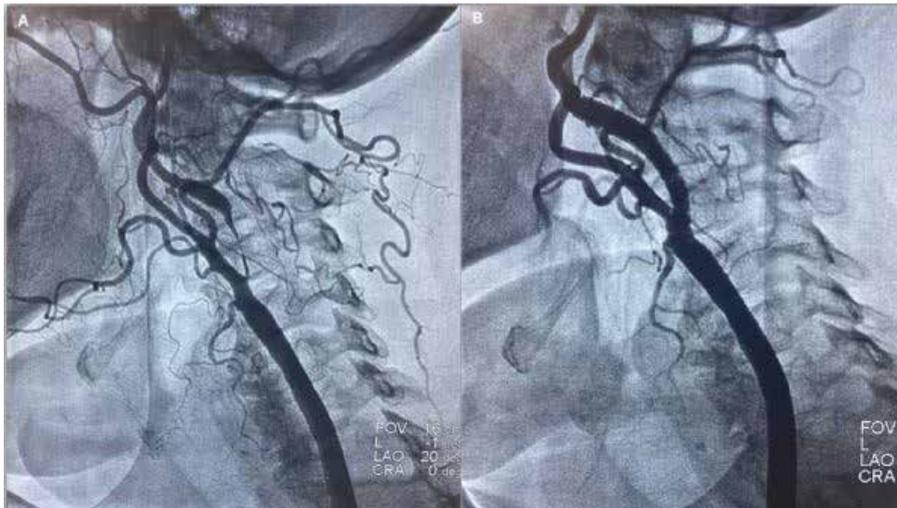


*Stent implantation by percutaneous approach to severe stenosis of the left internal carotid artery*

**[OP-16]  POST-IMPLANTATION SNARING OF THE TRANSCATHETER AORTIC VALVE LOCATED ABOVE THE ANNULUS OF NATIVE AORTIC VALVE**

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*Cemil Taşçıoğlu City Hospital, Department of Cardiology, İstanbul, Turkey*

**Objective:** Transcatheter aortic valve implantation is a successful treatment option for advanced aortic stenosis, particularly in patients with moderate or high surgical risk. However, the positioning of transcatheter valves has significant effects on aortic flow. Important effects of positional variability in valve placement include disruption of coronary blood flow and alterations in valve hemodynamic.Incorrect valve placement can also result in complications including valve embolization and severe paravalvular leakage. Herein, we describe an 88-year-old patient who underwent a complicated TAVI procedure, along with the relevant management strategies.

**Method:** A 88-year-old woman was admitted to our outpatient clinic with exertional dyspnea. She had a history of hypertension. Laboratory tests and ECG were normal. Coronary angiography showed coronary artery disease without critical stenosis. Transthoracic echocardiography revealed advanced aortic stenosis and transcatheter aortic valve implantation was planned. The Evolute R 26-mm valve was implanted in the appropriate coplanar angle valve position without pre-dilatation. The valve was displaced upward and located above the native valve annulus during implantation, but it did not embolize into the ascending aorta. As the placement position of the valve increases the risk of valve embolization, it was extracted using a snare and positioned in the aortic arch. A second valve was advanced over the wire within the aortic arcus valve. The valve in the arcus aorta was fixed with the help of a snare during the advancement. The second valve was implanted successfully into the aortic valve. On control thoracic echocardiography, the mean gradient was 16 mmHg and mild paravalvular aortic regurgitation was observed. The patient, who had no complaints during the follow-up, was discharged after arranging medical treatment.

**Results:** In the open surgical procedure, the valve location is precise; however, more significant variability in TAVI is expected due to the nature of the procedure and anatomical differences. In addition, several complications, such as coronary obstruction, valve embolization, and valve dysfunction, might develop depending on the valve location.

In our case, the valve was displaced upwards during implantation. Location of the valve that occurs after implantation; suggested that the valve would increase the possibility of embolization and decrease the durability and function of the valve in the long term. The valve, which was removed with the help of a snare, was placed in the arcus aorta. A second valve was implanted without the need for surgery.

**Conclusion:** Before the procedure, the patient's clinical condition and radiological results should be thoroughly evaluated by a multidisciplinary team consisting of a cardiologist, cardiovascular surgeon, and radiologist. Additionally, the location of the valve and potential clinical scenarios must be determined prior to the procedure.
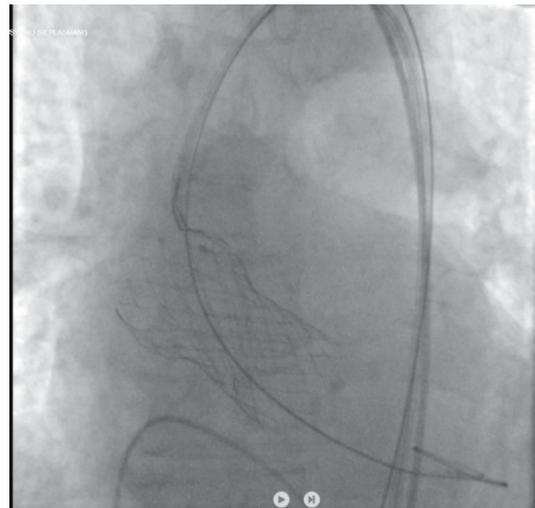
**Keywords:** Transcatheter aortic valve implantation, iatrogenic embolization of bioprosthetic valve, severe aortic stenosis

**Final Image of the Procedure**

**Snaring of Bioprosthetic Aortic Valve**



*Double valve image*

ORAL PRESENTATIONS

**[OP-17]   SOMETIMES IT IS NECESSARY TO OCCLUDE THE VESSEL: TREATMENT OF TWO CORONARY FISTULES WITH COIL EMBOLIZATION**

Gökhun Akkan, Narmina Ahmadlı, Sadık Volkan Emren

*Katip Çelebi University Medical School Cardiology Department*

**INTRODUCTION:** Coronary artery fistula (CAF) can be defined as a direct communication of a coronary artery with a cardiac chamber, great vessel, or other vascular structure.Most CAFs are congenital; however, they can develop after trauma or procedures such as ablation,coronary artery bypass grafting or stent implantation. In 50% of cases, the CAF originates from the right coronary artery (RCA); in 42%, from the left coronary artery; and in 5%, from both. Fistulas generally drain into the right-sided cardiac chambers or the pulmonary artery.

Small fistulas can be silent until patients age or a fistula expands with an increased left-to-right shunt ratio; in either circumstance, dyspnea or angina may be reported.

Small and medium-sized fistulas are typically accessible and are candidates for percutaneous closure when they originate as a single root from a proximal arterial segment and drain into one narrow area.

**CASE REPORT:** A forty six -year-old female patient with no previous history of cardiac disease was admitted to our emergency service with complaints of dyspnoea and chest pain. The electrocardiogram on admission revealed sinus rhythm,130 bpm and q wave in inferior leads.

In laboratory tests troponin I was markedly elevated(752 ng/L). Echocardiography revealed global mild hypokinesis and ejection fraction was estimated to be 50%. The patient was admitted to the catheter laboratory with a preliminary diagnosis of acute coronary syndrome. The vessels were observed to be normal in coronary angiography. But fistulization from right coronary artery(RCA) and circumflex artery (CX) to pulmonary artery and pulmonary capillary system was observed (Figure 1). We thought that these fistulas caused the patient's complaints and we decided to coil embolization. In order to understand whether the fistula originating from Cx was related to the conduction system, the balloon was inflated into the fistula and the fistula flow was interrupted. No arrhythmia was observed after waiting for 5 minutes. Both fistula segments were reached with microcatheter support. The fistula in CX was occluded with two 3mm*8cm coils. The fistula in RCA was occluded with two 4mm*8cm coils. The fistulas were successfully occluded(Figure 2).

In the follow-up of the patient, it was observed that the patient's complaints completely recovered and did not recur.

**DISCUSSION AND CONCLUSİON:** CAFs constitute the most frequent congenital anomalies of the coronary tree, they can be responsible for complications such as poor growth in childhood, heart failure, arrhythmia, sudden death, endocarditis, ischemia and myocardial infarction. The diagnosis can be suspected by physical examination and confirmed by imaging techniques. Coronary angiography remains the gold standard.

Surgical closure can be performed. However, surgery entails the risks of a cardiopulmonary bypass and median sternotomy. Transcatheter closure of CAFs with coil feasible and safe in the anatomically suitable vessels.
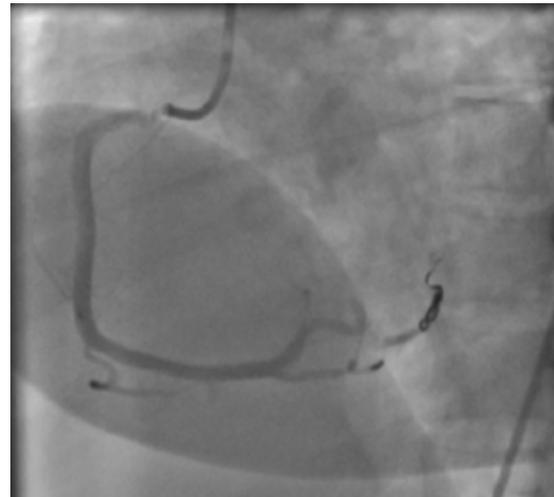
**Keywords:** Acute coronary syndrome, Coil embolization, Coronary artery fistula

**Figure 1**
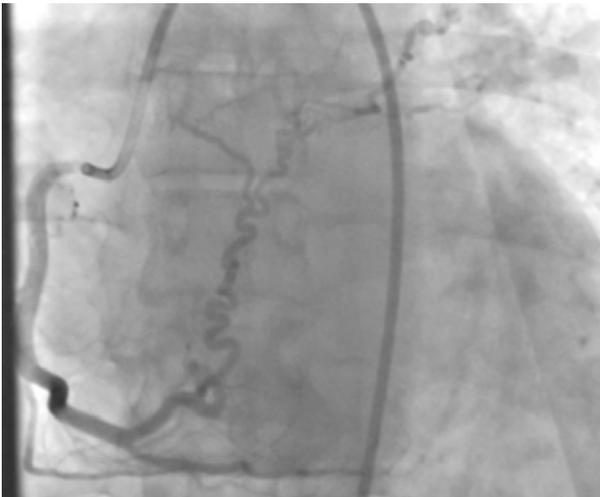


*Fistula in RCA before procedure*

**Figure 2**



*Occluded view of the fistula*

**[OP-18]** **UNUSUAL NATIVE VALVE INFECTIVE ENDOCARDITIS WITH CORYNEBACTERIUM**

Semanur Vural, Zeynep Kolak, Aycan Esen Zencirci, Nurşen Keleş

*Dr. Siyami Ersek Thoracic And Cardiovascular Surgery Educatıon Research Hospıtal Cardıology Department İstanbul*

**OBJECTIVE:** Corynebacterium species are facultative,anaerobic,nonsporulating, nonmotile,Gram-positive bacillus.The detection of Corynebacterium in blood cultures is mostly associated with a contamination from the skin flora,but sometimes it can be responsible for infections such as septicemia and infective endocarditis(IE).. Corynebacterium pseudodipthteriticum,C. jeikeium and C. striatum are detected and important pathogens causing IE and have a high mortality rate,approximately %43.These pathogens can mostly cause a subacute IE and are usually detected in elderly patients with comorbid diseases or immunocompromised patients,or patients prosthetic devices or mechanical valve.Especially,C. striatum can show resistance to many antibiotics.Vancomycin is frequently used in these patients and vancomycin resistance is rare.It was reported that especially C.striatum can cause natural or prosthetic valve endocarditis.In the presence of atypical presentation,the possibility of C. striatum infection should be considered even in an immunocompetent patient.

**Case Presentation:** We present a case of native mitral valve endocarditis caused by C.striatum.A 58-year-old female patient presented to the emergency department (ED)with complainments of chest pain and shortness of breath for 3 days.She had a history of percutaneous coronary intervention 5 years ago.She had also arterial hypertension,diabetes mellitus, chronic kidney failure.There was no history of prosthetic medical devices or medical allergies.On physical examination,there were bilateral rales,and systolic murmurs was detected on Mitral area.Her electrocardiogram revealed that atrial fibrillation.We performed bedside transthoracic echocardiography which showed normal left ventricular ejection fraction,modrate mitral stenosis,moderate-severe tricuspid insufficiency.A 20x10 mm image of mass compatible with vegetation was observed on the posterior mitral leaflet that causing a obstruction on the valve.The patient was admitted to the coronary intensive care unit with the suspicion of bacterial endocarditis.We performed transesophageal echocardiography that showed that 25 mm long,irregular,soft density vegetation on the atrial surface of the posterior mitral leaflet(Figure 1).Two sets of blood culture were positive for Corynebacteriim straitum.Vancomycin and ceftriaxone intravenous treatment was started to a patient according to the culture antibiogram result.Speech disorder and confusion developed during the follow-up of the patient.Brain computed tomograpghy scan showed subarachnoid and intraparenchymal cerebral hemorrhage which causing sincreased intracranial pressure.After the hemodynamic instability,she died.

**CONCLUSION:** Although most of the cases of IE due to Corynebacterium are seen in elderly patients with prosthetic heart valves,our case report demostrated that the native valves can be involved in patients with comorbodities diseases.Patients with atypical presentation should be carefully evaluated.

**Keywords:** Infective endocarditis, nativ valve endocarditisi, Corynebacterium endocarditis

**The transesophageal echocardiography view**
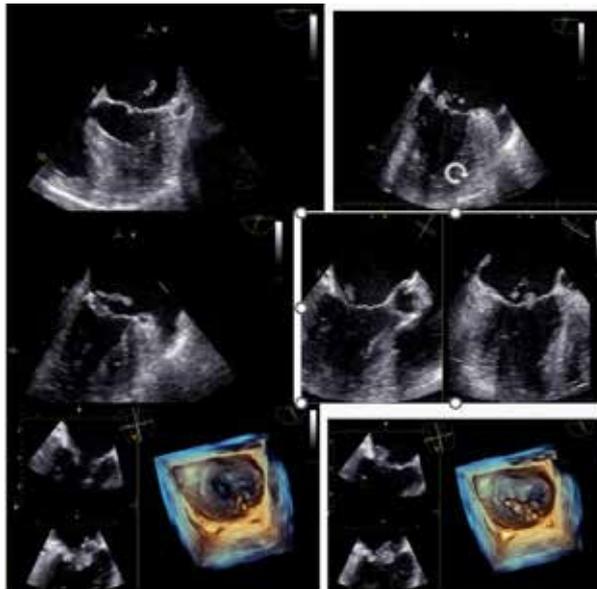


*irregular, soft density mass on the atrial surface of the posterior mitral leaflet*

### [OP-19]   COMPARISON OF THE EFFECT OF NON-HDL-C/HDL-C RATIO ON CORONARY SLOW FLOW WITH OTHER NON-TRADITIONAL LIPID MARKERS

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**Background:** Coronary slow flow (CSF) is a microvascular disease characterized by delayed opacification of the epicardial coronary arteries during angiography. Endothelial dysfunction caused by diffuse atherosclerosis lies in its main pathogenesis. Dyslipidemia is one of the major risk factors for atherosclerosis. Non-traditional lipid profiles reflect dyslipidemic status better than traditional lipid profiles.

**Objectives:** In this study, we aimed to reveal the effect of non-HDL-C/HDL-C ratio(NHHR) on CSF by comparing it with other traditional and non-traditional lipid profiles.

**Methods:** In this study, a total of 9112 patients who had coronary angiography were screened retrospectively. After exclusion criteria, 130 patients with CSF and 130 subjects with normal coronary flow as the control group were included in the study. Multivariate regression analysis was applied to identify independent predictors of CSF. In addition, the diagnostic accuracies of NHHR and other non-traditional lipid profiles were compared to predict CSF.

**Results:** The level of non-traditional lipid profiles was significantly higher in the CSF group (p<0.001,for all). NHHR showed a stronger correlation with TIMI frame count than other non-traditional lipid profiles (r=0.3593,p<0.0001). Together with NHHR, non-HDL-C, Castelli's risk index-II, atherogenic index of plasma, plasma glucose, dyslipidemia, smoking and body mass index were determined as independent predictors for CSF. The ability of NHHR to detect CSF was superior to other non-traditional lipid profiles (AUC:0.785;CI: 0.730-0.840;p<0.001).

**Conclusion:** NHHR was found to be a strong and independent predictor of CSF. This indicates that NHHR can be used as a reliable biomarker for risk stratification of CSF.

**Keywords:** Coronary slow flow, Non-HDL-C/HDL-C ratio, Non-traditional lipid markers

f-1
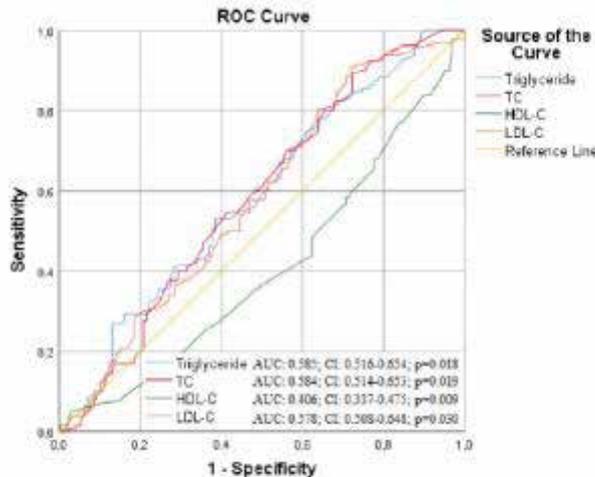


. Pairwise comparison of traditional lipid profiles with ROC analysis to predict CSF. There is no significant difference between the CSF separability performances of traditional lipid profiles.

**AuthorToEditor:** In this study, we aimed to reveal the effect of non-HDL-C/HDL-C ratio on Coronery slow floe by comparing it with other traditional and non-traditional lipid profiles. So far, our study has not been presented orally at any of the congresses.

**[OP-20]  COULD ANEURYSM AND ATHEROSCLEROSIS-ASSOCIATED MICRORNAS (MIR 24-1-5P, MIR 34A-5P, MIR 126-5P, MIR 143-5P, MIR 145-5P) ALSO BE ASSOCIATED WITH CORONARY ARTERY ECTASIA?**

Zafer Yalım[1], Serap Tutgun Onrat[2], Ibrahim Etem Dural[1], Ersel Onrat[1]

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[2]Afyonkarahisar Health Science University, Faculty of Medicine, Department of Medical Genetics, Afyonkarahisar

**Background:** Coronary artery ectasia (CAE), known as localized or diffuse excessive dilatation of the coronary artery, its etiology is still unknown, but it has been reported that the underlying cause may be atherosclerosis and genetic changes that may affect the arterial lumen. The purpose of this study which have been shown to be effective in aneurysm diseases and are known to contribute to vascular development and atherosclerosis of microRNAs is to investigate whether also associated with CAE.

**Methods:** This cross-sectional study was constituted of 25 patients with CAE and 25 subjects with normal coronary arteries and were collected the blood. Afterwards, following miRNA expressions were detected using the Rotor-GeneQ real-time polymerase chain reaction cycler (Qiagen) for expression levels of miR-24-1-5p, miR-34a-5p, miR-126-5p, miR-143-5p, miR-145-5p were investigated.

**Results:** The demographic variables of CAE (mean age 59.5±1.7; 12 women) and controls (mean age 57.2±2.1; 16 women) were similar. miR-126-5p (p=0.014) and miR-145-5p (p=0.003) levels were found to be more than <2-fold upregulated in CAE compared to controls; miR-143-5p also showed upregulation, but it was not significant (p=0.078). On the other hand, miR-24-1-5p (p=0.032) levels were found to be downregulated in CAE compared to controls. miR-34a-5p was also downregulated, but it was not considered significant (p=0.185).

**Conclusions:** According to our study findings, miR-126-5p, miR-145-5p and miR-24-1-5p may be associated with CAE. We think that are these microRNAs may be therapeutic significance for further studies in CAE involving abnormal angiogenesis and vascular disorders and potentially serve as useful biomarkers.

**Keywords:** Coronary artery ectasia, Atherosclerosis, Aneurysma, Biomarker, MicroRNAs

**Clustergram heat map graph summarising miRNA expression**
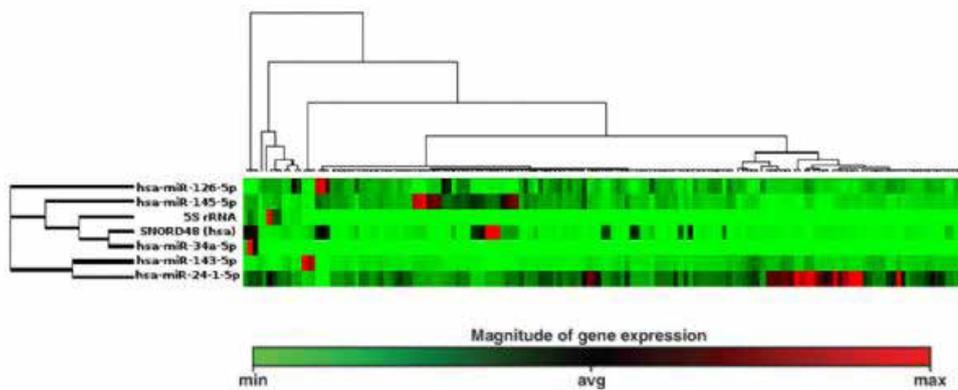


**Volcano plot expressing changes in miRNA expression**
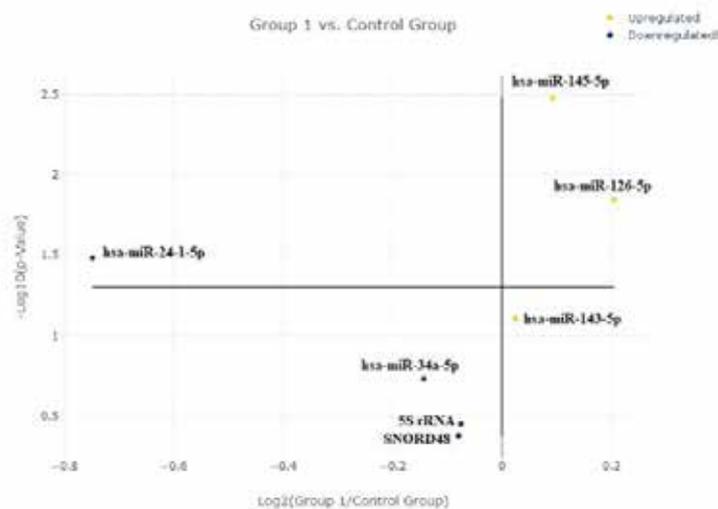
**Fold Regulation analysis obtained from groups**

| Position | Symbol | Up-Down Regulation (comparing to control group) | p-value |
| --- | --- | --- | --- |
| 1 | hsa-miR-126-5p | 1.15 | 0.014253 |
| 2 | hsa-miR-145-5p | 1.07 | 0.003341 |
| 3 | 5S rRNA | -1.05 | 0.353259 |
| 4 | SNORD48 (hsa) | -1.06 | 0.416986 |
| 5 | hsa-miR-34a-5p | -1.10 | 0.185394 |
| 6 | hsa-miR-143-5p | 1.02 | 0.078429 |

**[OP-21]** EVALUATION OF ATHEROGENIC COEFFICIENT, ATHEROGENIC INDEX OF PLASMA AND CASTELLI RISK INDEX-1 IN PATIENTS WITH CORONARY ARTERY ECTASIA

Ersan Oflar, Cennet Yildiz, Fatma Nihan Turhan Caglar, Ilayda Bostancı Alp

*BAKIRKOY DR SADI KONUK TRAINING AND RESEARCH HOSPITAL*

**Introduction:** Coronary artery ectasia (CAE) is defined as more than 1.5 times dilatation of a coronary artery compared to the diameter of normal adjacent segment. Almost half of the CAE cases is attributed to atherosclerosis. Dyslipidemia is among one of the primary risk factor for the development of atherosclerosis. The present study was conducted to investigate whether atherogenic indexes including atherogenic coefficient (AC), atherogenic index of plasma (AIP) and castelli risk index-1 (CRI-1) had a better predictive value compared to lipid values in patients with CAE.

**Material and methods:** A total of 131 patients were included in this single-center, retrospective study. Seventy one patients with CAE constituted study group and 60 patients with normal coronary artery constituted control group. Blood samples of the patients were collected after an overnight fast. Biochemical variables including LDL-C, HDL-C, triglyceride (TG), total cholesterol (TC), glucose, hemoglobin and complete blood count parameters were measured. AC, AIP, and CRI-1 were calculated using the formulas; non-HDL-C/HDL-C, log(TG/HDL-C), and TC/HDL-C, respectively.

**Results:** We did not find any differences between two groups with respect to age, glucose, white blood cell, platelet, lymphocyte, monocyte counts, TC, HDL-C, LDL-C and TG levels. Number of male patients was higher in CAE group compared to control group. CAE patients had higher values of creatinine, AC, AIP, CRI-1 and lower value of hemoglobin concentration (Table 1). ROC curve analysis showed that AC, AIP and CRI-1 had higher values of AUC compared to LDL-C and HDL-C (Table 1, Figure 1). Univariate logistic regression analysis demonstrated that gender, creatinine, hemoglobin, AC, AIP and CRI-1 were the independent predictors of presence of CAE. However TC, HDL-C, LDL-C and TG did not predict the presence of CAE.

**Discussion:** Our results showed that compared to HDL-C, LDL-C, TG and TC values, atherogenic indexes namely AC, AIP and CRI-1 better predicted CAE.

CAE has been thought as a distinctive type of coronary artery atherosclerosis which leads to degeneration of intima media layer of the vessel wall. These structural abnormalities could be thought as an extreme form of positive remodeling that results in dilatation of coronary artery. Among the atherosclerotic risk factors, hyperlipidemia stands out prominently since it constitutes major etiopathological factor for atherosclerosis. Previous studies have shown an association between plasma lipoproteins and CAE. It has been demonstrated that low HDL-C and high LDL-C levels are associated with progression of CAE. Qin et al. found that TG and LDL-C/HDL-C ratio had predictive value for the presence of CAE. According to our results AC, AIP, CRI-1 better predictors of CAE. Their calculation is easy and they can be used in daily practice.

**Keywords:** coronary artery ectasia, of atherogenic coefficient, atherogenic index of plasma, castelli risk index-1

**FIGURE 1**
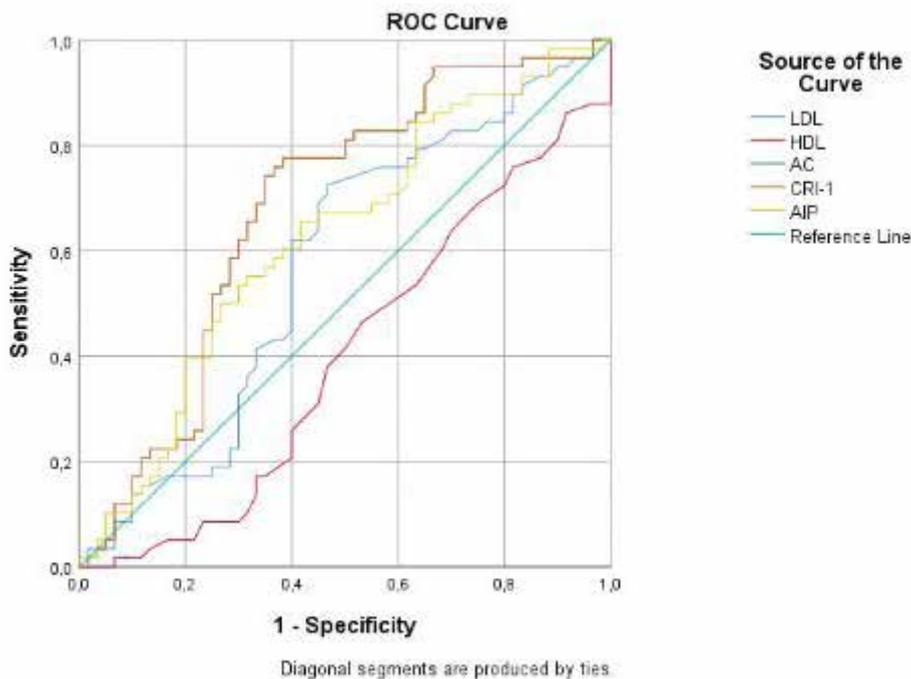


*ROC CURVE ANALYSİS OF LDL-C, HDL-C, AC, AIP, CRI-1 FOR PREDICTION OF CORONARY ARTERY ECTASIA*

**TABLE 1**

|  | Control group (n=60) | Study group (n=71) | p |  |  |  |  |
|---|---|---|---|---|---|---|---|
| Age | 54.10±8.05 | 57.28±10.67 | 0.070 |  |  |  |  |
| Gender |  |  | 0.025 |  |  |  |  |
| female | 30 (50) | 17 (29.3 |  |  |  |  |  |
| male | 30 (50) | 41 (70.7) |  |  |  |  |  |
| Glucose | 97(87-105) | 104.2 (91.1-116.75 | 0.167 |  |  |  |  |
| Creatinine | 0.75 (0.64-0.91) | 0.90(0.80-1.1) | 0.002 |  |  |  |  |
| white blood cell | 7.98±2.36 | 8.03±2.01 | 0.452 |  |  |  |  |
| hemoglobin | 14.34±1.46 | 13.70±1.75 | 0.003 |  |  |  |  |
| platelet | 268.88±64.96 | 259.54±62.70 | 0.448 |  |  |  |  |
| lymphocyte | 2.30 (1.78-2.99) | 1.99 (1.79-2.62) | 0.665 |  |  |  |  |
| monocyte | 0.5 (0.4-0.68) | 0.52 (0.46-0.66) | 0.287 |  |  |  |  |
| Total cholesterol | 192.25±42.17 | 206.58±52.78 | 0.200 |  |  |  |  |
| HDL-C | 44 (38-59) | 43(36.5-51) | 0.054 |  |  |  |  |
| TG | 124(89-175) | 158 (113.5-220) | 0.052 |  |  |  |  |
| LDL-C | 109(92-145) | 120 (100.35-137) | 0.169 |  |  |  |  |
| Atherogenic coefficient | 2.81(2.12-3.80) | 3.86 (3.11-4.52) | 0.001 |  |  |  |  |
| AIP | 0.43±0.30 | 0.49±0.28 | 0.020 |  |  |  |  |
| CRI-1 | 3.86(3.21-4.94) | 4.86(4.11-5.52) | 0.001 |  |  |  |  |
|  |  |  |  |  |  |  |  |
| results of Roc curve analysis |  |  |  |  |  |  |  |
|  | AUC | p | 95%CI | Cut-off | sensitivity | specificity |  |
| LDL-C | 0.573 | 0.169 | 0.468-0.678 |  |  |  |  |
| HDL-C | 0.397 | 0.054 | 0.295-0.499 |  |  |  |  |
| AC | 0.679 | 0.001 | 0.580-0.778 | 3.03 | 77.6 | 61.7 |  |
| AIP | 0.623 | 0.021 | 0.522-0.725 | 0.43 | 65.5 | 58.3 |  |
| CRI-1 | 0.679 | 0.001 | 0.580-0.778 | 4.03 | 77.6 | 61.7 |  |

## [OP-22] EVALUATION OF THE RELATIONSHIP BETWEEN NO-REFLOW PHENOMENON AND IMMATURE GRANULOCYTE RATIO: A RETROSPECTIVE STUDY

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**Introduction:** No-reflow phenomenon, a complication of percutaneous coronary intervention in patients with acute coronary syndrome (ACS), is known to be associated with inflammatory parameters. The aim of this study was to investigate the relationship between immature granulocyte ratio and immature granulocyte count, which are markers of inflammation, and no-reflow phenomenon.

**Methods:** This retrospective study included 28 patients who underwent PCI for ACS and had no reflow. Twenty-five patients with similar patient characteristics were enrolled as a control group. The immature granulocyte count and immature granulocyte ratio (the ratio of immature granulocytes to total granulocytes in the peripheral blood sample) were determined from the haemogram results of the patients' peripheral blood samples. No-reflow was defined as less than expected or complete cessation of coronary flow during percutaneous coronary intervention. The relationship between the ratio and number of immature granulocytes and no-reflow was then evaluated using appropriate statistical methods.

**Results:** In the no-reflow group, the mean age was 62±13.2 years and 71.4% of patients were male. The number of immature granulocytes was 0.06x 10^3/μL and the percentage of immature granulocytes was 0.45 in the no-reflow group, while it was 0.04x 10^3/μL and 0.4 in the control group, respectively. In our study, no statistically significant correlation was found between the percentage and number of immature granulocytes and no-reflow. The incidence of no-reflow was not significantly different in patients with a high immature granulocyte ratio compared to those with a low immature granulocyte ratio ($p > 0.05$). Independent variables (age, sex, hypertension, smoking, haemoglobin, immature granulocyte ratio, C-reactive protein, high-sensitivity troponin) that may be associated with no-reflow were not found to be independent predictors when evaluated by regression analysis. Furthermore, no positive or negative correlation was found between the percentage and number of immature granulocytes and no-reflow ($p > 0.05$).

**Conclusion:** Our study suggests that the use of immature granulocyte ratio and count in predicting the diagnosis or prognosis of no-reflow phenomenon is limited. Inflammation may not be the only pathophysiology in no-reflow. In addition, prospective studies in larger patient populations may yield different results. In conclusion, the use of immature granulocyte ratio as a routine test to assess no-reflow is not effective in clinical practice.

**Keywords:** immature granulocyte ratio, no reflow, non-ST elevation myocardial infarction, ST elevation myocardial infarction, unstable angina pectoris
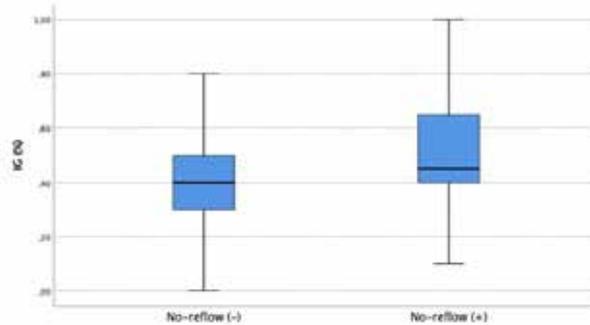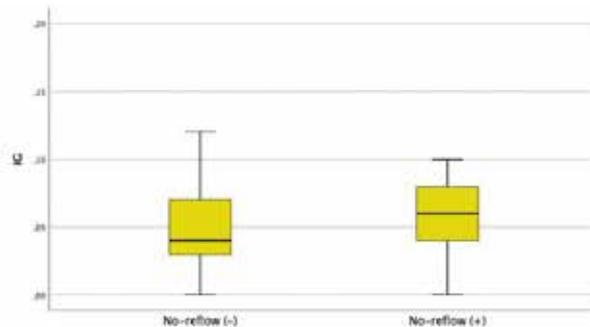
### Figure 1



### Figure 2

**Table 1**

| | No-Reflow Group (n =28) | Control Group (n = 25) | p |
|---|---|---|---|
| Clinical characteristics | | | |
| Age (years) | 62 ± 13.2 | 60 ± 12.0 | 0.583 |
| Male, n (%) | 20 (71.4) | 19 (76) | 0.706 |
| HT, n (%) | 10 (35.7) | 8 (32) | 0.556 |
| DM, n (%) | 15 (53.6) | 8 (32) | 0.114 |
| HL, n (%) | 2 (7.1) | 6 (24) | 0.087 |
| Previos CAD, n (%) | 8 (28.6) | 5 (20) | 0.934 |
| Smoking, n (%) | 7 (25) | 6 (40) | 0.664 |
| HF, n (%) | 5 (17.9) | 1 (4) | 0.112 |
| LVEF, (%) | 42.4±10.5 | 51±7.6 | 0.001 |
| Type of ACS<br>Anterior MI, n (%)<br>İnferior MI, n (%)<br>NSTMI/USAP, n (%) | 12 (42.9)<br>5 (17.9)<br>11 (39.3) | 5 (20)<br>5 (20)<br>15 (57.7) | 0.188 |
| IRA<br>LAD, n (%)<br>Cx, n (%)<br>RCA, n (%)<br>Saphenous, n (%) | 16 (57.1)<br>2 (7.1)<br>8 (28.6)<br>2 (7.1) | 9 (36)<br>5 (20)<br>10 (40)<br>1 (4) | 0.303 |
| Apical Thrombus | 3 (10.7) | 0 | 0.092 |
| Mortality | 0 | 2 (7.1) | 0.173 |
| GP2b3a inh., n (%) | 22 (81.5) | 2 (8) | <0.001 |
| Adenosine, n (%) | 5 (18.5) | 0 | 0.024 |
| Laboratory findings | | | |
| Hgb, g/dL | 13.4±2.5 | 14.7±1.8 | 0.041 |
| WBC, x103 | 12±4.2 | 11.8±4.1 | 0.901 |
| Neu, x103 | 9.2 (5.7-13) | 7.6 (5.2-9.3) | 0.229 |
| Lym, x103 | 1.9 (1.2-2.5) | 2.6 (1.9-3.3) | 0.008 |
| Plt, x103 | 268±69.2 | 269±67.2 | 0.949 |
| IG, x103 | 0.06 (0.04-0.08) | 0.04 (0.03-0.07) | 0.168 |
| IG, % | 0.45 (0.4-0.675) | 0.4 (0.25-0.5) | 0.051 |
| Creatinin, mg/dl | 0.88 (0.73-1.1) | 0.93 (0.83-1.1) | 0.470 |
| Na, mEq/L | 136.5±4.7 | 138.1±3 | 0.161 |
| K, mEq/L | 4.1±0.6 | 4.2±0.4 | 0.635 |
| LDL, mg/dl | 112.4±41.1 | 109.5±34.9 | 0.792 |
| HDL, mg/dL | 39.2±8.9 | 37±9.7 | 0.423 |
| TG, mg/dl | 100 (70-155) | 134 (96-228) | 0.024 |
| CRP, mg/L | 4.5 (1.9-17) | 4.1 (1.9-8.2) | 0.605 |
| Hs-Troponin1<br>Hs-Troponin2 | 457.4 (99.1-1705)<br>2493 (896.2-7404) | 105 (25-392)<br>613 (101-1314) | 0.02<br>0.05 |

*Tablo-1. Clinical demographic characteristics of patients in No-Reflow and Control Group Abbreviations: HT, hypertension; DM, diabetes mellitus; HL, hyperlipidemia; CABG, coronary artery by-pass grefting; PCI, percutaneous coronary intervention; CAD, coronary artery disease (CABG or PCI); HF, heart failure; LVEF, left ventricular ejection fraction; Hgb, haemoglobin; WBC, white blood cell; Neu, neutrophil; Lym, lymphocyte; IG, immature granulocyte; Na, sodium; K, potassium; Plt, platelet; LDL, low density lipoprotein; HDL, high density lipoprotein; TG, triglyceride; ACS, acute coronary syndrome; MI, myocardial infarction; NSTMI, non-ST elevated myocardial infarction; USAP, unstabil angina pectoris, IRA, infarct related artery; LAD, left anterior descending artery; Cx, circumflex artery; RCA, right coronary artery; CRP, c-reactive protein; GP2b3a inh., glycoprotein 2b3a inhibitor; Hs-Troponin1, hospital admission high-sensitivity troponin value; Hs-Troponin2, maximum high-sensitivity troponin value.*

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ELEXUS HOTEL GİRNE, K.K.T.C.

**[OP-23]** **IN-HOSPITAL PROGNOSTIC VALUE OF DE-RITIS RATIO IN PATIENTS WITH NON -ST SEGMENT ELEVATION MYOCARDIAL İNFRACTION**

Nart Zafer Baytuğan

*Gebze Fatih State Hospital*

In-Hospital Prognostic Value Of De-Ritis Ratio In Patients With Non -ST Segment Elevation Myocardial İnfraction

Introduction

The association between aspartate aminotransferase (AST) to alanine aminotransferase (ALT) ratio (De-Ritis ratio) and in-hospital adverse cardiac events in patients with acute non- ST segment elevation myocardial infarction (non-STEMI) remains unclear. This study aims to assess the investigate association between De-Ritis ratio and major adverse cardiac and cerebrovascular events (MACCE) and all-cause mortality in non-STEMI without any history of liver diseases.

Method

We conducted a single-center, retrospective, observational study between May 2021 and February 2023 in tertiary level hospital in Gebze, Turkey. All patients underwent invasive coronary interventions. AST/ALT ratio of the first blood test was calculated. Cox proportional risk analysis was performed to assess the risk stratification value of the De Ritis ratio, using MACCE and all-cause mortality.

Results

In the enrolled 212 non-STEMI patients median age was 55 (34-84) years and 61 (28.7%) were female. Patients were divided into two groups as to the median De-Ritis ratio (0.934), 125 patients (58.9%) were evaluated to the low De-Ritis group while 87 patients (41.1%) assigned to the high De-Ritis group. Multivariate Cox-proportion regression analysis revealed that a high De Ritis ratio was an independent risk factor for MACCE (HR=2.35, 95% CI: 1.19-4.42, P< 0.001) and all-cause mortality (HR=2.81, 95% CI: 1.11-5.32, P<0.001).

Conclusion

Patients with non-STEMI, an elevated De-Ritis ratio was independent and valuable risk stratification factor for in-hospital MACCE and all-cause mortality rates.

**Keywords:** Coronary artery disease, Myocardial infraction, De-Ritis ratio, Alanine aminotransferase; Aspartate aminotransferase; Mortality

**Figure-1**
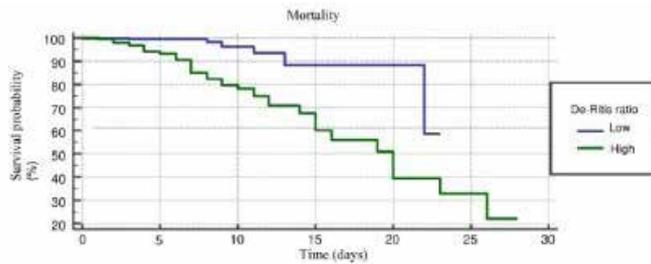


Figure-1: Kaplan-Meier survival curves for De-Ritis Ratio demonstrated that De-Ritis ratio > 0.934 was significant predictor of mortality (long-rank p<0.001, median survival time was 28 days)

**Table-1**

| All cause mortality | | P value | MACCE | P value |
|---|---|---|---|---|
| Cox regression analysis | HR( 95 % CI) | | HR( 95 % CI) | |
| Unadjested | 2.17 (1.31- 3.48) | 0.004 | 1.98(1.02-2.87) | 0.012 |
| Adjusted | 2.81 (1.11-5.32) | <0.001 | 2.35 (1.19-4.42) | <0.001 |

*Table-1 Univariate and multivariate Cox regression analysis of De-Ritis Ratio for in hospital all-cause mortality and MACCE*

**[OP-24]    INVESTIGATION OF THE RELATIONSHIP BETWEEN CRP/ALBUMIN AND NEUTROPHIL/LYMPHOCYTE RATIO AND PERIODONTAL DISEASE IN PATIENTS WITH ST ELEVATION MYOCARDIAL INFARCTION**

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**Background:** Periodontal diseases and cardiovascular diseases can coexist. Periodontitis may pave the way for cardiovascular diseases by causing increased inflammation and oxidative stress, as well as bacteremia as a result of the transport of oral bacteria to the aorta and other regions. Periodontal microorganisms were found in atherosclerotic plaque samples taken from the patients with myocardial infarction (MI), and the relationship between periodontitis and cardiovascular diseases was revealed. Neutrophil/lymphocyte ratio has been used frequently in cardiovascular diseases as an inflammatory marker in recent years. It was thought that the CRP/albumin ratio, as a biomarker in inflammation and oxidative stress, may be related to the etiopathogenetic process of both diseases. In this study, it was aimed to investigate the relationship between CRP/albumin ratio and neutrophil/lymphocyte level and periodontal disease in the patients with ST-elevation myocardial infarction (STEMI).

**Methods:** Forty patients who applied to Atatürk University Medical Faculty Research Hospital with STEMI were included in the study. The patients who use cigarettes, have diabetes mellitus or inflammatory disease and have fewer than 10 teeth were not included in the study. The patients were divided into two groups as those with and without periodontitis. Blood samples of the patients were taken at the time of application, and clinical periodontal examination was performed within the first 24 hours after MI.

**Results:** Twenty-seven of the patients were male and 13 were female. The mean age of both groups was similar. As a result of the periodontal examination, 22 of the patients had periodontitis and 18 patients had healthy gingiva. The CRP/albumin and neutrophil/lymphocyte ratios were statistically significantly higher in the patients with periodontitis when compared to the patients with healthy gingiva. (p:0.025 for CAR, p:0.045 for NLR) (table-1)

**Discussion:** This is the first study to investigate the relationship between periodontal disease and CRP/albumin and neutrophil/lymphocyte ratios in STEMI patients. According to studies, the risk of cardiovascular disease in the patients with periodontitis is increased by 50-70%. A comprehensive review of the AHA found worse periodontal status on periodontal examinations in cardiovascular events associated with myocardial infarction. Many studies on cardiovascular diseases have shown that CRP/albumin and neutrophil/lymphocyte ratios have prognostic roles.

CRP/albumin and neutrophil/lymphocyte ratios can serve as potential biomarkers to show the relationship between periodontitis and periodontal and systemic diseases such as cardiovascular diseases. Oral hygiene of the patients with MI should be followed closely. The presence of concomitant conditions such as periodontitis causes increased inflammation, which may cause adverse events in MI patients.

**Keywords:** Periodontitis, CRP/albumin, neutrophil/lymphocyte, STEMI

**Table-1**

| Variables | Periodontitis (-) | Periodontitis (+) | p value |
|---|---|---|---|
| Age | 59±9 | 57±8 | 0.535 |
| Troponin I | 374±1021 | 460±1530 | 0.555 |
| CRP | 9.3±9 | 13±8 | 0.081 |
| Albumin | 4.3±0.23 | 4.2±0.4 | 0.57 |
| CAR | 2.1±2 | 4.7±3 | 0.025 |
| Neutrophile | 3.5±2.9 | 5.9±2.4 | 0.045 |
| Lymphocyte | 2.7±1.3 | 3.1±2.2 | 0.059 |
| NLR | 2.6±3.8 | 5.6±2.6 | 0.045 |
| Hb | 15.9±1.71 | 15.4±1.8 | 0.145 |
| Plt | 245±62 | 258±72 | 0.256 |

## [OP-25]  SILENT MYOCARDIAL ISCHEMIA IN PATIENT WITH VARIANT ANGINA

Semanur Vural, Şennur Ünal Dayı, Nazmiye Özbilgin Çakmak

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**OBJECTIVE:** Silent myocardial ischemia (SMI) is defined as the presence of objective evidence of MI in the absence of chest discomfort or another anginal equivalent symptom(e.g.,dyspnea,nausea,diaphoresis).It has a high prevalence in atherosclerotic heart disease and is more common than angina episodes in patients with stable coronary disease.It is also observed in patients with variant angina,whose pathogenesis is thought to be responsible for vasospasm of the coronary arteries with varying degrees of atherosclerotic plaque.

**CASE:** We present a case of transient ST elevation without angina in ambulatory Holter monitoring and narrowing in coronary arteries.A 62-year-old male patient with known coronary artery disease was admitted to the emergency department with syncope and associated head trauma.Medical history was learned that PCI was applied to the LAD 1 month ago.The patient's admission ECG was AF,without a history of anticoagulant use (fig.1).He was evaluated by neurology and neurosurgery,and no pathology was found.His comorbidities included hypertension,DM,and smoking.Ejection fraction was determined as 55% in his TTE,LVH was detected,free wall motion defect and major valve pathology were not observed.Under antiischemic treatment,the patient did not have any anginal complaints,and no change was detected in the ECG.The oral anticoagulant therapy was started because of the patient's CHADsVASC score was 3.His ECG returned to sinus rhythm spontaneously.For arrhythmia screening,24-hour ambulatory Holter monitoring was performed to the patient.In recording, the rhythm was observed as sinus,and ST elevation,which lasted for minutes and resolved spontaneously,was recorded in the morning time(05:05 am and 07:40 am)(fig.2).The patient stated that he was asleep during this time and did not have any complaints.Thereupon,coronary angiography was planned for the patient.The stent in the proximal portion of the LAD artery was found to be open.There was 80%stenosis in the osteal of the first diagonal branch and 70% in the LAD after the second diagona.A 60% stenosis in the Optus margin branch of the CX and a plaque appearance in the RCA were observed.LAD lesion became more prominent after nitrate administration. Coronary vasospasm stimulation test was'nt considered necessary since the responsible lesion was detected.A 2.75X33 MM DES stent was implanted in the LAD lesion,followed by balloon post dilatationin stent and proximal of stent (fig.3)..ST elevation and arrhythmia recordings were not observed in repeated Holter recording.

**CONCLUSION:** Elderly and diabetic patients undergoing CABG don'thave typical symptoms of MI.Holter recording has increased the possibility of detecting silent MI in high-risk patients.Considering the strong relationship of SMI with mortality,in rare clinical cases where the diagnosis is doubtful,early diagnosis with Holter monitoring and subsequent initiation of treatment may contribute to improving the prognosis in this patient group.
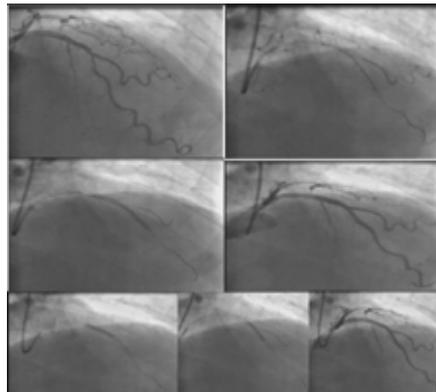
**Keywords:** Coronary artery disease, variant angina, silent ischemia, ambulatory holter recording

### Figure 2



*In patient's ECG recording rhythm was sinus, ST elevation which resolved spontaneously was recorded*

### Figure 3



*The LAD lesion and Coronary angiography image after LAD stenting*

KARDİYOVASKÜLER AKADEMİ KONGRESİ

&

INTERNATIONAL ACADEMY OF YOUNG CARDIOLOGISTS

CUMHURİYETİMİZİN
2023 | 100
1923 2023

20-24 EYLÜL 2023

ELEXUS HOTEL GİRNE, K.K.T.C.

**ORAL PRESENTATIONS**

**[OP-26]   THE RELATIONSHIP BETWEEN TRIGLYCERIDE/GLUCOSE INDEX AND INTRACORONARY THROMBUS BURDEN IN PATIENTS WITH ACUTE MYOCARDIAL INFARCTION**

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**Objective:** Acute myocardial infarction (AMI) and its complications are the leading cause of death in the world. Risk classification in these patients is important in terms of clinical course and treatment plans. Triglyceride glucose index (TGI) indicates insulin resistance and has been associated with cardiovascular diseases, prognosis and adverse events in AMI. After plaque erosion and rupture in AMI, intracoronary thrombus occurs and acute process begins. The amount of intracoronary thrombus is associated with poor prognosis in AMI patients. In this study, we aimed to investigate the relationship between TGI and intracoronary thrombus burden in patients presenting with AMI.

**Patients and Methods:** 392 AMI patients were included in the study. All patients underwent primary percutaneous intervention. The classification determined by the thrombolysis in myocardial infarction (TIMI) study group was used in the analysis of thrombus load. Grade 0: no evidence of thrombus, grade 1: suspicious thrombus (low contrast intensity, hazy appearance, irregular lesion contour), grade 2: definite thrombus and greatest size of thrombus 1/2 vessel diameter, grade 3: definite thrombus and thrombus greatest size >1/2 to <2 vessel diameter, grade 4: definite thrombus and thrombus greatest dimension >2 vessel diameter and grade 5: total thrombotic occlusion. The patients were divided into 2 groups as low thrombus burden (grade 0-3) (n=159) and high thrombus burden (grade 4 and 5) (n=233).

**Results:** Low thrombus burden group was older than high thrombus burden group (64.6±11.3 vs. 60.6 ±11.9; p=0.001). Serum glucose (157.5 ± 72.1 vs 130.9 ± 56.7), triglyceride (148.6 ± 91.0 vs 125.5 ± 64.5), white blood cell count (11.73 ± 3.91 vs 10.19 ± 3.41), neutrophil count (8.79 ± 3.84 vs 7.34 ± 3.41), baseline troponin level (13.22 ± 10.30 vs 6.63 ± 8.28) and TGI level (9.13 ± 0.63 vs 8.82 ± 0.56) were found to be significantly higher in the high thrombus burden group than in the low thrombus burden group. In multivariable logistic regression analysis, age (p = 0.015, Odds Ratio (OR): 0.976, confidence interval (CIs): 0.957 – 0.995), baseline troponin (p<0.001, OR: 1.064, CIs: 1.037 – 1.092) and TGI (p<0.001, OR: 1.968, CIs: 1.353 – 2.864) were found to be independently associated of high thrombus burden. As revealed by the ROC curve analysis; the cut-off value of 9.04 for TGI predicted the high thrombus burden with a sensitivity of 52.4% and specificity of 64.2% (AUC: 0.633; 95% CIs: 0.578 - 0.687; p<0.001)

**Conclusions:** We found that high TGI, troponin level and low age were independent predictors of high intracoronary thrombus burden in patients presenting with AMI.

**Keywords:** triglyceride/glucose index, intracoronary thrombus burden, acute myocardial infarction

**Figure. Receiver operating characteristics (ROC) curves of TGI associated with high thrombus burden**
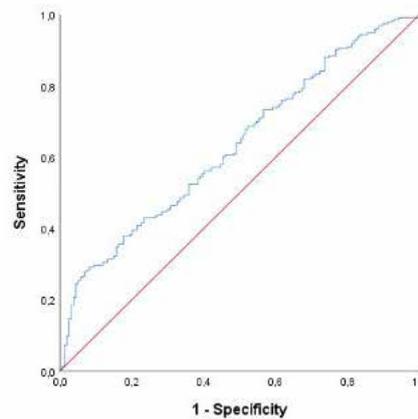


**Table 2. Regression analysis of potential predictor factors for the high thrombus burden grade**

**Table 2.** Regression analysis of potential predictor factors for the high thrombus burden grade

| Variables | Univariable analysis OR (95% CI) | p value | Multivariable analysis OR (95% CI) | p value |
|---|---|---|---|---|
| Age | 0.971 (0.954 – 0.989) | 0.001 | 0.976 (0.957 – 0.995) | **0.015** |
| White blood cell count | 1.127 (1.061 – 1.198) | <0.001 | 1.038 (0.970 – 1.111) | 0.279 |
| Baseline troponin | 1.074 (1.050 – 1.099) | <0.001 | 1.064 (1.037 – 1.092) | **<0.001** |
| TGI | 2.320 (1.623 – 3.316) | <0.001 | 1.968 (1.353 – 2.864) | **<0.001** |
| LVEF | 0.968 (0.949 – 0.988) | 0.002 | 0.987 (0.965 – 1.009) | 0.238 |

OR: Odds ratio, CI: Confidence interval TGI: Triglyceride-glucose index, LVEF: Left ventricular ejection fraction

**Table 1. Baseline clinical, laboratory, echocardiographic and angiographic characteristics of the study groups**

| Variables | Low Thrombus Burden (n: 159) | High Thrombus Burden (n: 233) | p value |
|---|---|---|---|
| Baseline characteristics | | | |
| Age, years | 64.6 ± 11.3 | 60.6 ± 11.9 | 0.001 |
| Sex, male, n (%) | 120 (75.5%) | 176 (75.5%) | 0.988 |
| Diabetes mellitus, n (%) | 55 (34.6%) | 79 (33.9%) | 0.888 |
| Hypertension, n (%) | 75 (47.2%) | 94 (40.3%) | 0.180 |
| Previous history of CAD, n (%) | 45 (28.3%) | 47 (20.2%) | 0.062 |
| Laboratory findings | | | |
| Serum glucose (mg/dL) | 130.9 ± 56.7 | 157.5 ± 72.1 | <0.001 |
| Serum creatinine (mg/dL) | 0.98 ± 0.49 | 0.90 ± 0.31 | 0.080 |
| Total cholesterol (mg/dL) | 182.4 ± 49.4 | 182.3 ± 46.2 | 0.972 |
| LDL-cholesterol (mg/dL) | 124.0 ± 43.8 | 125.6 ± 43.3 | 0.720 |
| HDL-cholesterol (mg/dL) | 40.4 ± 11.2 | 38.8 ± 10.1 | 0.135 |
| Triglyceride (mg/dL) | 125.5 ± 64.5 | 148.6 ± 91.0 | 0.003 |
| Sodium (mmol/L) | 137.1 ± 2.9 | 136.5 ± 3.2 | 0.069 |
| Potassium (mmol/L) | 4.2 ± 0.5 | 4.2 ± 0.4 | 0.897 |
| White blood cell count (10^3/mL) | 10.19 ± 3.41 | 11.73 ± 3.91 | <0.001 |
| Hemoglobin (g/dL) | 13.5 ± 2.0 | 13.9 ± 1.9 | 0.099 |
| Neutrophil count (10^3/mL) | 7.34 ± 3.41 | 8.79 ± 3.84 | <0.001 |
| Lymphocyte count (10^3/mL) | 1.91 ± 0.83 | 2.05 ± 0.95 | 0.130 |
| Platelet count (10^3/mL) | 251.7 ± 79.8 | 255.6 ± 68.4 | 0.611 |
| Baseline troponin (ng/mL) | 6.63 ± 8.28 | 13.22 ± 10.30 | <0.001 |
| TGI | 8.82 ± 0.56 | 9.13 ± 0.63 | <0.001 |
| Angiographic and echocardiographic findings | | | |
| IRA, n (%) | | | |
| LAD | 67 (42.1%) | 92 (39.5%) | 0.599 |
| Cx | 44 (27.7%) | 54 (23.2%) | 0.313 |
| RCA | 43 (27.0%) | 84 (36.1%) | 0.061 |
| Saphenous graft | 5 (3.1%) | 3 (1.3%) | 0.361 |
| CAD severity, n (%) | | | |
| Single vessel disease | 54 (34.0%) | 102 (43.8%) | 0.051 |
| Double vessel disease | 58 (36.5%) | 73 (31.3%) | 0.289 |
| Multi vessel disease | 47 (29.6%) | 58 (24.9%) | 0.306 |
| LVEF, (%) | 50.0 ± 11.38 | 46.6 ± 9.64 | 0.002 |

CAD: Coronary artery disease, LDL: Low-density lipoprotein, HDL: High-density lipoprotein, TGI: Triglyceride-glucose index, IRA: Infarct related artery, LAD: Left anterior descending artery, Cx: Circumflex artery, RCA: Right coronary artery, LVEF: Left ventricular ejection fraction

**[OP-27]**   THE ROLE OF FREQUENTLY USED INDEXES AND MARKERS IN DETERMINING CORONARY ARTERY DISEASE IN PATIENTS UNDERGOING ELECTIVE CORONARY ANGIOGRAPHY

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**Objective:** Coronary artery disease-related (CAD) deaths rank high in the world. Inflammation has been shown to initiate atherosclerotic processes in coronary arteries and play a role in atherosclerotic plaque progression. The SYNTAX scoring (SS) method is widely used, which anatomically evaluates the burden of atherosclerosis in the coronary arteries and determines the extent of CAD. This study examined the effects of commonly used inflammatory markers and indices on CAD severity in patients undergoing elective coronary angiography.

**Method:** 116 patients who underwent elective coronary angiography between September 2022 and February 2023 were included in this cross-sectional study. Patients with acute coronary syndrome, known CAD, heart failure (left ventricular ejection fraction (LVEF)<50), acute infection, and primary hyperparathyroidism were excluded from the study. The stenosis percentages of coronary lesions were determined from the coronary angiographic images using a program presented in the catheter laboratory. The SS was calculated using the scoring system provided in the internet database. The patients were divided into three groups according to their SS (low SS, 0-22; moderate SS, >=23-32; high SS, >=33). In addition, they were grouped into two categories (low-intermediate and high). Electrocardiography was taken at 50 m/s speed and 10 mm/mV amplitude during the hospitalization of all patients. Blood tests were taken. Parathyroid hormone (PTH), systemic immune-inflammation index (SII), neutrophil/lymphocyte (NLR), C-reactive protein/albumin (CAR), monocyte/high-density lipoprotein (MHR), monocyte/lymphocyte (MLR), immature granulocyte (IG)count, platelet/lymphocyte and Tp-e/QT were calculated.

**Results:** There were statistical differences between SS tertiles in terms of age (p=0.018), LVEF (p=<0.001), CAR (p= 0.009), and PTH levels (p=0.006). The three groups were similar in terms of gender (p=0.151), hypertension (p= 0.483), diabetes mellitus (p= 0.568), and smoking (p= 0.828). Among the inflammatory markers, MHR (p= 0.705), SII (p= 0.513), MLR (p= 0.878), NLR (p= 0.940), IG count (p= 0.467), PLR ( p= 0.234) did not show a significant difference. When a regression model including hypertension, diabetes mellitus, CAR, PTH, age, and LVEF was created, age (p=0.025, OR= 1.048, 95%CI 1.006- 1.092) and LVEF (p=0.044, OR = 0.951, 95%CI 0.907-0.999) were found to be independent predictors of CAD severity.

**Conclusion:** Age and LVEF were stronger predictors of CAD severity than inflammatory indexes, IG count, and PTH.

**Keywords:** coronary artery disease, parathyroid hormone, inflammatory index

### A comparison of SYNTAX tertiles with variables

|  | Low SS n= 48 | İntermediate SS n= 36 | High SS n= 32 | P value |
|---|---|---|---|---|
| Age, year | 52.20±10.59 | 57.08±10.40 | 58.68±10.69 | 0.018 |
| Female, n (%) | 29 (60.4) | 22 (61.1) | 13 (40.6) | 0.151 |
| Body mass index, kg/m2 | 30.37±4.37 | 29.30±3.72 | 30.09±4.48 | 0.508 |
| Hypertension, n (%) | 24 (50) | 18 (50) | 20 (62.5) | 0.483 |
| Diabetes mellitus, n(%) | 17 (35.4) | 10 (27.8) | 8 (25) | 0.568 |
| LVEF, % | 58.64±8.90 | 58.16±7.62 | 47.50±10.56 | <0.001 |
| GFR, ml/min/1.73m2 | 87.22±16.56 | 90.77±16.01 | 87.81±14.12 | 0.571 |
| Smoking, n (%) | 12 (25) | 10 (27.8) | 10 (31.3) | 0.828 |
| NLR | 2.48±1.52 | 2.61±1.84 | 2.52±1.59 | 0.940 |
| SII | 834.37±586.43 | 796±714.53 | 679.52±435.09 | 0.513 |
| CAR | 1.30±0.85 | 1.40±1.23 | 2.09±1.43 | 0.009 |
| PTH | 50.11±24.09 | 52.41±23.70 | 67.27±23.79 | 0.006 |
| IG count | 0.035±0.008 | 0.035±0.010 | 0.037±0.009 | 0.467 |
| PLR | 160.96±68.71 | 155.35±94.84 | 132.49±54.85 | 0.234 |
| MHR | 15.10±7.73 | 15.61±6.42 | 16.99±8.52 | 0.705 |
| MLR | 0.29±0.16 | 0.31±0.22 | 0.30±0.15 | 0.878 |
| Tp-e/QT | 0.20±0.04 | 0.20±0.04 | 0.18±0.03 | 0.133 |

Abbreviations: CAR, C-reactive protein /albumin ratio; immature granulocytes, IG; MHR, monocyte / high-density lipoprotein ratio; MLR, monocyte/lymphocyte ratio; NLR, neutrophil/lymphocyte ratio; PLR, platelet/lymphocyte ratio; SII, systemic immune inflammation index

**[OP-28]**  **THE SYSTEMIC IMMUNE-INFLAMMATION INDEX (SII) IS ASSOCIATED ISCHAEMIA WITH NON-OBSTRUCTIVE CORONARY ARTERIES (INOCA)**

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**Background:** Ischemia with the non-obstructive coronary artery (INOCA) is an ischemic heart disease that mostly includes coronary microvascular dysfunction and/or epicardial coronary vasospasm, is due to underlying coronary vascular dysfunction and can be seen more commonly in female patients. The systemic immune-inflammation index (SII) is a new inflammatory index that includes 3 inflammatory cell types that can be easily obtained from a complete blood count, and can more comprehensively represent the immune and inflammatory status in patients (SII, platelet × neutrophil/ lymphocyte ratio). Previous reports showed that SII was significantly associated with CAD severity, elevated Syntax score (SxS), and major adverse cardiovascular and cerebrovascular events (MACCE) in patients with stable angina pectoris undergoing percutaneous coronary intervention (PCI).

**Objective:** This study aims to investigate the relationship between INOCA and SII, a new marker associated with inflammation.

**Methods:** A total of 424 patients (212 patients with INOCA and 212 normal controls) were included in the study. Peripheral venous blood samples were received from the entire study population prior to coronary angiography to measure SII and other hematological parameters.. SII was calculated as total peripheral platelets count (P) × neutrophil-to-lymphocyte ratio (N/L) (SII = P × N/L ratio).

**Results:** The optimal cut-off value of SII for predicting INOCA was 153.8 with a sensitivity of 44.8% and a specificity of 78.77% (Area under curve [AUC]: 0.651 [95% CI: 0.603–0.696, p=0.0265]). To assess whether SII had an additional prognostic value over components, their ROC curves were compared. The AUC value of SII was found to be significantly higher than that of lymphocyte (AUC: 0.607 [95% CI: 0.559–0.654, p = 0.0273]), neutrophil (AUC: 0.559 [95%CI: 0.511–0.607, p=0.028]) and platelet (AUC: 0.590 [95% CI: 0.541–0.637, p = 0.0276]) in INOCA patients.

**Conclusions:** A high SII level was found to be independently associated with the existence of INOCA. The SII value can be used as an indicator to add to the traditional expensive methods commonly used in INOCA prediction.

**Keywords:** Coronary microvascular dysfunction, Systemic Immune-Inflammation Index (SII), Ischaemia with No Obstructive Coronary Arteries (INOCA), Coronary angiography
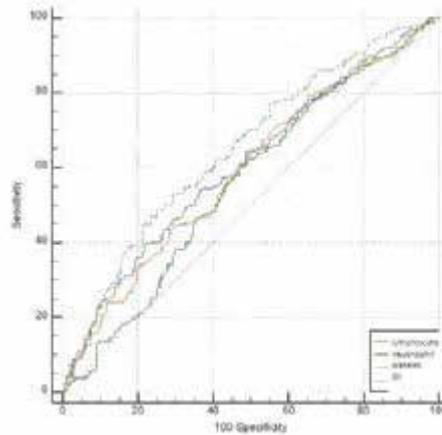
**Figure 1:** ROC curve analysis of SII to predict INOCA.



**Table 1:** Baseline characteristics of control and INOCA groups.

| | Group 0 (Control Group) (n:212) | Group 1 (INOCA Patients) (n:212) | p value |
|---|---|---|---|
| Age (years) | 57±12 | 54±9 | 0.158 |
| Sex, n (%) (Female) | 137(64.6) | 139(65.6) | 0.839 |
| Smoking, n (%) | 96(45.3) | 94(44.3) | 0.845 |
| Family CAD history, n (%) | 33(15.6) | 64(30.2) | <0.001 |
| Hypertension, n (%) | 90(42.5) | 89(42.0) | 0.922 |
| Diabetes, n (%) | 40(18.9) | 43(20.3) | 0.714 |
| Hemoglobin (g/dL) | 13.77±1.54 | 14.91±1.67 | <0.001 |
| RDW | 12.5±1.9 | 13.5±1.6 | <0.001 |
| Platelet (10^3/mL) | 252±66 | 271±71 | <0.001 |

| | Group 0 (Control Group) (n:212) | Group 1 (INOCA Patients) (n:212) | p value |
|---|---|---|---|
| MPV | 8.72±5.29 | 9.92±1.11 | <0.001 |
| Lymphocyte (10^3/mL) | 2.62±0.91 | 2.35±1.04 | <0.001 |
| Neutrophil (10^3/mL) | 4.54±1.44 | 4,92±1.90 | 0.034 |
| PLR | 103,38±34.19 | 126,36±47.48 | <0.001 |
| SII | 169.59(114.84-249.52) | 234.86(162.38-377.12) | <0.001 |
| NLR | 1.75(1.42-2.21) | 2.06(1.55-2.71) | <0.001 |
| MHR | 0.00115 (0.0090-0.0175) | 0.0095 (0.0072-0.0127) | <0.001 |
| Glucose (mg/dL) | 98±23 | 113±40 | <0.001 |
| Total Cholesterol (mg/dL) | 176±41 | 194±46 | <0.001 |
| Triglyceride (mg/L) | 127(90-165) | 144(102-198) | 0.005 |
| LDL-C (mg/dL) | 102±38 | 117±43 | <0.001 |
| HDL-C (mg/dL) | 48±12 | 46±12 | 0.179 |
| Urea (mg/dL) | 28,08±8.097 | 15,04±10.40 | <0.001 |
| Creatine (mg/dL) | 0.71(0.62-0.83) | 0.70(0.60-0.90) | 0.056 |
| hsCRP (mg/L) | 2,3(1.1-4.4) | 4,5(3.1-8.9) | <0.001 |
| EF (%) | 64±4 | 61±8 | <0.001 |

Abbreviations: INOCA: Ischaemia with Non-Obstructive Coronary Arteries, CAD: Coronary Artery Disease, RDW: Red Blood Cell Distribution Width, MPV: Mean Platelet Volume, PLR: Platelet to Lymphocyte Ratio, SII: Systemic Immune-Inflammation Index, NLR: Neutrophil to Lymphocyte Ratio, MHR: Monocyte/HDL-C Ratio, LDL-C: Low Density Lipoprotein Cholesterol. HDL-C: High Density Lipoprotein Cholesterol, hsCRP: high sensitive C-Reactive Protein, EF: Ejection Fraction.

**[OP-29]   VALUE OF ACEF SCORE FOR IN-STENT RESTENOSIS IN PATIENTS WITH ACUTE CORONARY SYNDROME**

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**Introduction:** Despite wide-spread use of drug-eluting stents (DES), in-stent restenosis (ISR) remains to be a challenging problem after percutaneous coronary intervention (PCI). PCI with stent implantation has become a major therapeutic strategy for acute coronary syndrome (ACS) cases. ISR is described as more than 50 percentage stenosis inside or neighboring previously stented segment which causes significant morbidity to patients and expenditure to healthcare providers. Although neointimal hyperplasia has been suggested as major underlying pathophysiology for ISR, its exact cause has not been fully elucidated. Identification of risk factors of ISR has utmost importance in terms of prevention of its occurrence.

Age, creatinine and ejection fraction (ACEF) score has been introduced in order to predict mortality in patients undergoing elective cardiac surgery. Predictive value of ACEF score has been shown in various patients settings including patients undergoing PCI and transcatheter aortic valve implantation. In the present study we aimed to evaluate the value of ACEF score in ACS patients undergoing primary PCI.

**Material-Methods:** A total of 227 patients who were diagnosed with ACS were enrolled. Clinical and demographic data of the patients were obtained from hospital data system. ACEF score was calculated as; age/left ventricular ejection fraction (LVEF) + 1 point if baseline serum creatinine was >2 mg/dl.

**Results:** Mean age of the population was 57.50±13.55 years, 33% of them was diabetic, 88.5% of them was hypertensive and 85.5% of them had hyperlipidemia. 30 (13.2%) patients developed ISR.. Patients who developed ISR were older, had lower values of LVEF, triglyceride, hemoglobin levels, higher values of SYNTAX and ACEF scores, neutrophil, platelet counts (Table 1). ACEF value of 1.45 predicted ISR with a sensitivity of 60% and specificity of 82.4% (AUC: 0.714, p=0.022, 95% CI: 0.557-0.870) (Figure 1). Results of univariate logistic regression analysis showed that age, LVEF, SYNTAX score, hemoglobin level, neutrophil count and ACEF score were the independent predictors of ISR (Table 1).

**Conclusion:** ISR remains as a major problem after stent implantation. Several studies have investigated risk factor for development of ISR. Presence of diabetes mellitus, stent length and small vessel size have been found as predictive factors for ISR. It has been found that multivessel coronary artery disease and elevated levels of CRP are associated with ISR. Li et al. found that incidence of ISR after ACS was 18.2% and it was strongly related to stent number and LVEF. In the present study we aimed to evaluate clinical factors that are related to ISR occurrence. ACEF score which combines three clinical variables in its algorithm had a predictive value for the development of ISR. Its calculation is easy and could be used in ACS patients who are undergoing primary PCI.

**Keywords:** acute coronary syndrome, in-stent restenosis, ACEF score

**FIGURE 1**
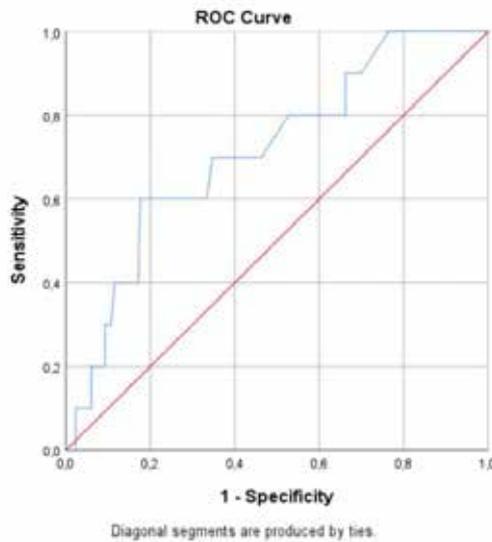


*ROC curve analysis of ACEF score for prediction of in-stent restenosis.*

**TABLE 1**

| | All the patients (n=227) | In stent restenosis (-) (n=197) | In stent restenosis (+) (n=30) | p |
|---|---|---|---|---|
| Age (years) | 57.50±13.55 | 56.15±12.79 | 65.11±13.30 | 0.047 |
| BMI (kg/m2) | 28.74±5.72 | 28.68±5.67 | 29.69±7.27 | 0.456 |
| Gender (n,%) | | | | 0.284 |
| Male | 169 (74.4) | 151 (76.6) | 18 (60) | |
| Female | 58 (25.6) | 46 (23.4) | 12 (40) | |
| Smoking (n,%) | 109 (48) | 100 (50.7) | 9 (30) | 0.351 |
| Diabetes mellitus (n,%) | 75 (33) | 63 (31.9) | 12 (40) | 0.632 |
| Hypertension (n,%) | 201 (88.5) | 174 (88.3) | 27 (90) | 0.883 |
| Hyperlipidemia (n,%) | 194 (85.5) | 170 (86.2) | 24 (80) | 0.616 |
| Ejection fraction (%) | 55.12±8.94 | 56.32±7.63 | 48.33±10.00 | 0.001 |
| SYNTAX score | 12.12±9.14 | 11.54±9.13 | 19.94±12.22 | 0.010 |
| Creatinine (mg/dl) | 0.98±0.58 | 0.93±0.46 | 1.40±1.25 | 0.393 |
| LDL-C (mg/dl) | 123.74±42.62 | 122.91±43.60 | 134.78±27.68 | 0.398 |
| Triglyceride (mg/dl) | 188.82±113.91 | 196.38±1.4.13 | 128.00±63.30 | 0.040 |
| HDL-C (mg/dl) | 40.23±9.74 | 40.03±9.61 | 43.33±15.10 | 0.898 |
| cTroponin (ng/l) | 3764.99±7225.11 | 3733.22±7323.54 | 9654.12725.96 | 0.068 |
| Hemoglobin (g/dl) | 13.45±2.20 | 13.56±2.21 | 11.93±2.21 | 0.015 |
| Neutrophil (109/l) | 6.03±2.18 | 5.95±2.13 | 7.84±2.43 | 0.020 |
| Platelet (109/l) | 260.45±76.30 | 261.76.62 | 306.00±72.01 | 0.044 |
| Systolic blood pressure (mmHg) | 140.43±27.57 | 141.77±27.79 | 124.89±19.78 | 0.108 |
| Diastolic blood pressure (mmHg) | 79.91±14.09 | 80.11±14.30 | 75.11±9.08 | 0.317 |
| ACEF score | 1.11±0.53 | 1.09±0.52 | 1.50±0.64 | 0.022 |
| | | | | |
| UNIVARIATE LOGISTIC REGRESSION ANALYSIS FOR PREDICTION OF IN-STENT RESTENOSIS. | | | | |
| | p | ODDS RATIO | 95% CI | |
| Age | 0.033 | 1.049 | 1.004-1.096 | |
| Ejection fraction | 0.005 | 0.928 | 0.881-0.977 | |
| SYNTAX score | 0.008 | 1.072 | 1.019-1.128 | |
| Hemoglobin | 0.022 | 0.723 | 0.548-0.954 | |
| Neutrophil | 0.013 | 1.390 | 1.073-1.802 | |
| ACEF score | 0.026 | 2.735 | 1.128-6.630 | |

*Clinical characteristics of the patients, comparison of patients with or without in-stent restenosis, univariate logistic regression analysis for prediction of in-stent restenosis.*

### [OP-30]   WHAT COVID-19 INFECTION CHANGES IN ACUTE CORONARY SYNDROME METRICS

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**INTRODUCTION-Aim:** COVID-19 infection is a disease that can cause mortality and morbidity in the acute period as well as in the late period. It is known that endothelial dysfunction due to the disease can last longer than 6 months. Endothelial dysfunction is one of the most important factors underlying acute coronary syndromes. In this study, we aimed to compare the demographic and angiographic characteristics of patients who had acute coronary syndrome within 1 year following COVID-19 infection versus patients with acute coronary syndrome who did not have Covid-19 infection.

**Methods:** A total of 150 patients who underwent coronary angiography in our clinic for acute coronary syndrome between October 2021 and August 2022 were included in the study. Of these, 76 had a history of COVID-19 infection in the last 1 year. 74 patients had no history of COVID or respiratory tract infection.

**Results:** When both groups were compared with each other in terms of demographics, it was observed that they were similar in terms of age, gender, presence of diabetes and smoking. Although the frequency of hyperlipidemia was less in the COVID group (p<0.01), hypertension was more frequent (p=0.035) (TABLE 1).

When the acute coronary syndrome subtypes were examined, it was determined that the patients in the COVID group presented as non-ST myocardial infarction (NSTEMI) rather than ST elevation myocardial infarction (STEMI) compared to those who did not have COVID (p<0.001). It was determined that 38.2% of the patients in the Covid group and 68.9% of the patients in the control group had STEMI.

Thrombus burden, which was determined according to the TIMI thrombus score, was found to be significantly higher in the COVID group (p<0.012). The rate of no-reflow development during percutaneous coronary intervention was found to be significantly higher in the covid group (p<0.001). On the other hand, when the TIMI flow was evaluated, it was found that the distal flow was better in the COVID group (p<0.01).

Demographic and angiographic data of the patients are summarized in Table 1.

**DISCUSSION AND Conclusion:** Despite the fact that patients in the Covid group presented with STEMI, thrombus burden and no-reflow rate were found to be higher. The high thrombus burden and no-reflow rates in the COVID group were associated with viral coagulopathy and endothelial dysfunction, the mechanism of which is not fully elucidated. The lower TIMI current in the control group was attributed to the higher frequency of STEMI in the control group.

As a result, patients with a history of COVID are similar to those without risk factors, and even less, as in hyperlipidemia. Although they are more commonly diagnosed with NSTEMI than with STEMI, complications such as intense thrombus burden, and the no-reflow phenomenon are more common in people who have not had COVID.

**Keywords:** COVID-19, acute coronary syndrome, NSTEMI, STEMI

### table1

|  | Covid (+) N=76 | Covid (-) N=74 | P value |
|---|---|---|---|
| HT(%) | 56.6 | 39.2 | .035 |
| DM(%) | 36.8 | 45.9 | .320 |
| HL(%) | 30.3 | 64.9 | <.001 |
| Smoker(%) | 40.8 | 55.4 | .102 |
| Family History(%) | 18.4 | 28.4 | .178 |
| Male rate (%) | 78.9 | 70.3 | .262 |
| No-reflow(%) | 19.2 | 1.4 | <.001 |
| STEMI(%) | 38.2 | 68.9 | <.001 |
| TIMI | 2.13±1.11 | 0.64±0.69 | <.001 |
| Thrombus Burden | 2.85±1.77 | 2.27±0.82 | .012 |
| Age | 60.96±11.88 | 59.61±10.08 | .453 |
| GFR | 80.96±21.04 | 79.34±19.22 | .366 |
| GRACE | 109.05±26.41 | 109.08±19.22 | .994 |
| LDL(mg/dl) | 117.85±33.53 | 119.72±39.05 | .313 |

*Table1*

**ORAL PRESENTATIONS**

## [OP-32]  FUROSEMIDE-INDUCED STEVEN JOHNSON SYNDROME

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Stevens-Johnson Syndrome (SJS) is a disease of acute onset, usually self-limiting, involving vesiculobullous skin lesions and two mucosal areas.SJS causes death in 3-18% of cases. There is no specific treatment for SJS.

Case presentation:

A 78-year-old female patient presented to the emergency department with dyspnea.She has a history of type 2 diabetes and hypertension; no cardiac comorbidities.Her daily drug treatment was metformin 1000 mg, nebivolol 5 mg 1, perindopril-indapamide 10/2.5 mg, acetylsalicylic acid 81 mg, and atorvastatin 20 mg.ECG was in normal sinus rhythm, and the heart rate was 90. She had 140/90mmHg bp, and 2+ pretibial edema. The patient had progressive orthopnea in the last weeks.EF was 40% on echo.The patient was admitted to the cardiology service with the diagnosis of heart failure.

The patient's own medications were continued. Additionally, furosemide iv 80 mg infusion for 8 hours was given twice daily.The patient's response to the diuretic treatment was good; rales and, pretibial edemas, orthopnea disappeared. However, on the 10th day of hospitalization, red, itchy, painful, erythematous, maculopapular rashes appeared on the body that did not fade with pressure. In addition, exudative, dry lesions appeared in the mouth, lips, and around the eyes(image 1-2). At the same time, the patient had a fever of 38.5 degrees.The patient was diagnosed with Steven Johnson syndrome, and 1 mg/kg/day methylprednisolone iv treatment was started. Furosemide, the newly started drug, was discontinued after the diagnosis of SJS.Then serology tests were performed; HIV and HSV were excluded.After ten days of treatment, mucosal and skin lesions regressed. The patient was discharged with the recommendation of a dermatology polyclinic control regarding late complication follow-up.

Conclusion

Various factors play a role in the etiology of Steven Johnson Syndrome. Among the etiological causes, drugs take the first place (64%), and no underlying cause was detected in 5% of them. About 200 drugs are known to be associated with the development of SJS. It has been reported that the second most common cause of SJS is infectionsi

A case report in the literature describes the association of furosemide use with SJS, but the authors did not determine a definitive association of furosemide with SJS syndrome. In the other case report describing the relationship between repeated dose use of furosemide and SJS, it was observed that the symptoms increased with high doses of furosemide. However, it has been stated that the development of SJS can also be attributed to using sulfozidine and lincomycin. S. Zhuo et al. used FDA Adverse Event Reporting System (PS, SS, I) data for 2016–2021 and reported that when methotrexate and furosemide are combined, the risk of SJS increases.In our case, no medication could cause SJS in the long-term retrospective follow-up of the patient.However, more data are still needed to confirm the relationship between furosemide and SJS.

**Keywords:** Stevens-Johnson Syndrome (SJS), furosemide, heart failure

**SJS image 1**

**SJS image 2**

**[OP-33]**    **PROTECTIVE EFFECTS OF ARBUTIN AGAINST DOXORUBICIN-INDUCED CARDIAC DAMAGE**

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**Aim:** Doxorubicin is an effective antineoplastic agent but has limited clinical application because of its accumulative toxicities, including cardiotoxicity. Cardiotoxicity causes lipid peroxidation, genetic impairment, oxidative stress, inhibition of autophagy, and disruption of calcium homeostasis. As a result of these, heart failure, pericardial effusion and arrhythmias can be observed in patients. Doxorubicin-induced cardiotoxicity can be tried to be mitigated by phytochemicals, which are derived from plants and possess antioxidant, anti-inflammatory, and anti-apoptotic properties. Arbutin, a natural antioxidant found in the leaves of the bearberry plant, has numerous pharmacological benefits, including antioxidant, anti-bacterial, anti-hyperglycemic, anti-inflammatory, and anti-tumor activity. In our study, we aimed to investigate the effect of arbutin on doxorubicin cardiotoxicity.

**Methods:** The study involved male Wistar rats divided into three groups, each containing six rats: a control group, a group treated with doxorubicin to induce cardiac toxicity, a group treated with arbutin daily for two weeks before doxorubicin administration. After treatment, plasma and heart tissue samples were collected for analysis. The samples were evaluated for oxidative stress parameters, including superoxide dismutase, malondialdehyde, and catalase, as well as for cardiac biomarkers, including CK, CK-MB, and LDH. The heart tissues were also analyzed using molecular, histopathological and immunohistochemical methods.

**Results:** Arbutin treatment significantly reduced doxorubicin-induced oxidative stress, inflammation, apoptosis, cardiac biomarkers. Also histopathological and immunohistochemical analyses confirmed that arbutin treatment protected against doxorubicin-induced cardiac damage.

**Discussion:** The study suggests that arbutin has the potential to be used to mitigate doxorubicin-induced cardiotoxicity in cancer patients.

**Keywords:** Arbutin, doxorubicin, cardiotoxicity, oxidative stress, inflammation

### Figure-1
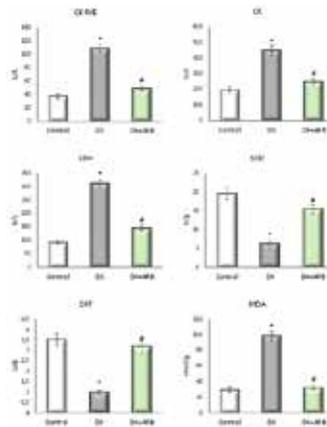


*Serum levels of cardiac markers and oxidative stress markers in control and treatment groups. * p<0,001 vs control group, # p<0,001 vs DX group. CK-MB: creatinine kinase-MB, CK: creatinine kinase, LDH: lactate dehydrogenase, SOD: superoxide dismutase, CAT: catalase, MDA: malondialdehyde, DX: doxorubicin, ARB: arbutin*

### Figure-2
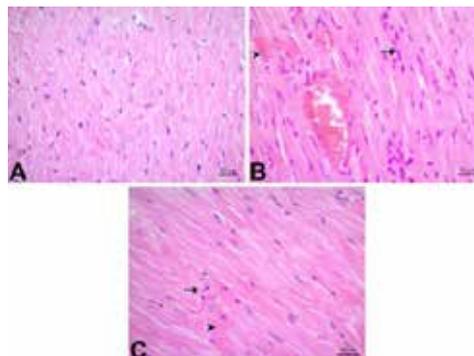


*Histopathological microphotograph of control and treatment groups stained with hematoxylin and eosin (H&E). A. Control group: Normal architecture of myocardium, B. DX treated group: Severe mononuclear cell infiltrates (arrow) and severe hemorrhage (arrowhead), C. DX+ARB treated group: Mild mononuclear cell infiltrates (arrowhead) and mild hemorrhage (arrowhead).*

**[OP-34]    SOLUBLE ST2 IN ACUTE PULMONARY EMBOLISM**

Muhammet Uyanik

*Samsun Carsamba Devlet Hastanesi*

**Purpose:** Suppression of tumorigenicity receptor (ST2) is a member of the IL-1 superfamily. It consists of two components, ST2L, which is the membrane form, and sST2, which is soluble in blood. Soluble ST2 (sST2) is a cardiovascular injury–related biomarker. sST2 is also secreted response to mechanical tension from myocyte and has prognostic value for heart failure. However, biopsy studies have shown that the alveoli are the main source of serum sST2. The extent to which sST2 is elevated in acute pulmonary embolism (PE) and whether sST2 can discriminate between high-risk and low-risk patients are unknown.

**Methods:** Patients whose diagnosis was confirmed by computed tomography pulmonary angiography (CTPA) were included in the study. Except for PE, other diseases causing sST2 elevation were excluded. Echocardiographic pulmonary artery pressure, CBC, creatinine, CRP, sST2, and D-dimer tests were performed on the patients and the control group at the time of admission.

**Results:** After pre-assessment, 66 patients confirmed acute PE who met the study criteria and 62 patients for the control group were included. sST2 levels were positively correlated with the Pulmonary Embolism Severity Index (PESI). sST2 level was associated with increased mortality and prolonged hospitalization (P<0.05).

**Conclusions:** Among patients diagnosed with acute PE, sST2 showed superior overall prognostic performance and similar sensitivity over D-dimer. It is a candidate biomarker for predicting high-risk patients for acute PE. Unravelling the role of sST2 may open the door to understanding the acute effects of PE and its chronic complications such as pulmonary hypertension.

**Keywords:** ST2, pulmonary embolism, pulmonary hypertension

**[OP-35]    THE EFFECT OF SODIUM GLUCOSE CO-TRANSPORTER-2 INHIBITORS ON SYSTEMIC IMMUNE INFLAMMATORY INDEX LEVELS IN HEART FAILURE WITH REDUCED EJECTION FRACTION**
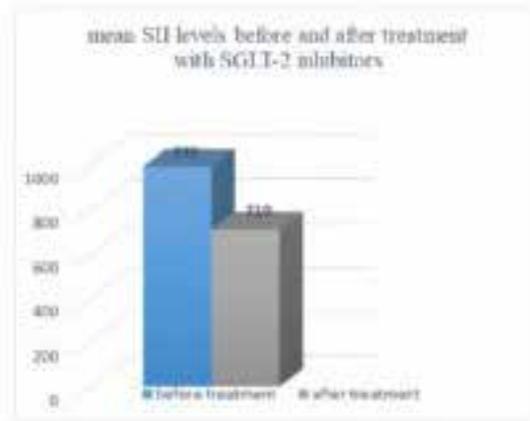
Ozge Ozcan Abacioglu, Nermin Yıldız Koyunsever, Armagan Acele

*Adana City Training and Research Hospital, Department of Cardiology, Adana, Turkey*

**Introduction:** Sodium glucose co-transporter-2 (SGLT2) inhibitors are antidiabetic agents that prevent glucose reabsorption and increase fluid excretion along with osmotic diuresis and natriuresis. They reduce hospitalization in heart failure (HF) patients by causing decrease in extravascular and intravascular volume like diuretics. In this study, we aimed to investigate the effects of SGLT-2 inhibitors on the systemic immune inflammatory index (SII) in heart failure patients with type 2 diabetes mellitus (DM) and reduced ejection fraction (rEF), in order to demonstrate the theory that they have positive effect on chronic inflammation that increases due to both congestion and hyperglycemia. Material-Methods: SGLT-2 inhibitors were started in 154 consecutive patients with rEF accompanied by DM, who were followed up in our clinic. SII values before treatment and 3-6 months after the start of treatment were analyzed. SII was obtained by multiplying the neutrophil by the platelet and dividing by the lymphocyte. Results: The study consisted of 154 patients with rEF, mean age 63±9 years (61 female, 93 male). The subjects included in the study were in NYHA II-III class and were receiving optimal HF treatment (Angiotensin-converting enzyme inhibitors 96%, beta blockers 92%, mineralocorticoid receptor antagonists 74%, angiotensin receptor/neprilysin inhibitors 9%). The mean SII before treatment was 992.6 (214.3-8892.0) and the mean SII 3-6 months after treatment was 710.4 (54.3-3645.0). Mean SII values decreased by 28.4% with SGLT2 inhibitors (Figure 1). This rate was 19.1 % in empagliflozin (n=79) and 35.9 % in dapagliflozin (n=75). Discussion: It has been shown in our study that SGLT-2 inhibitors, which have been proven to reduce hospitalization and provide clinical improvement in HF patients with rEF by studies such as DAPA-HF, EMPAREG OUTCOME and DEFINE-HF, also have a positive effect on chronic inflammation and may have prognostic importance in HF with rEF.

**Keywords:** glucose co-transporter, inflammatory index, reduced ejection fraction

**Figure 1**

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ORAL PRESENTATIONS

**[OP-36]** THE EFFECTIVENESS OF THROMBOLYTIC THERAPY IN THE PRESENCE OF SEVERE INTRACORONARY THROMBUS

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**Introduction:** Intracoronary intense thrombus is a rare but potentially serious complication in acute coronary syndromes (ACS). Unfortunately, there is no consensus on its treatment. This case presentation describes the management of a patient presenting with ACS and a heavy intracoronary thrombus burden.

**Case:** A 74-year-old male patient with a history of triple coronary bypass surgery, hypertension, type 2 diabetes mellitus, and chronic kidney insufficiency presented to the emergency department with chest pain. The ECG showed ST depression in leads V1-6, and as the chest pain persisted, the patient was taken to the angiography laboratory. The left main coronary artery (LMCA) was totally occluded, the right coronary artery (RCA) was totally occluded at the mid-segment, left internal mammary artery (LIMA)-left anterior descending artery (LAD) graft was patent, and there was total occlusion in the distal segment of the ascending aorta (AO)-RCA and 90% stenosis in the mid-segment of AO-optus marginalis (OM), with a heavy thrombus. A 2.5x23mm and 3.0x19mm stent were implanted in the total lesion of AO-RCA in a kissing manner. The AO-OM lesion was dilated with a 2.0x15mm balloon and intracoronary aggrastat was administered, but the thrombus persisted, leading to the patient's chest pain relief. Aggrastat maintenance dose was continued in the coronary intensive care unit. As the patient's chest pain worsened again, 100 mg alteplase was administered, and the chest pain subsided. Follow-up angiography revealed significant regression of the thrombus, but an isolated 90% stenosis was observed in the mid-segment. Two stents, 3.5x16mm and 4.0x8mm, were placed together to cover the lesion, and the procedure was concluded.

**Conclusion-Discussion:** Intravascular alteplase may be considered as an option for patients with severe intracoronary thrombus who cannot undergo interventional procedures.

**Keywords:** Severe, coronary, trombus, thrombolytic

**AO-OM greft**



*after the alteplase infusion*

**AO-OM greft**



*severe thrombus before the alteplase infusion*

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ORAL PRESENTATIONS

**[OP-37]**  **DEMONSTRATION OF SUBCLINICAL LEFT VENTRICULAR ELECTRICAL AND MECHANICAL DYSFUNCTION IN OVERWEIGHT SUBJECTS BY FRONTAL QRS-T ANGLE AND 3D-SPECKLE TRACKING ECHOCARDIOGRAPHY**

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**Background:** Overweightness is a considerable step in the process leading to obesity. There are no sufficient studies on the effect of cardiomyopathy defined in obese patients about overweight subjects. We thought that it may be useful to examine the myocardial involvement in overweight individuals electro-mechanically with more sensitive techniques before the development of obesity cardiomyopathy.

**Aim:** The aim of the present study was to demonstrate whether or not there are subclinical left ventricular electrical and mechanical dysfunctions in overweight patients using frontal QRS-T (fQRS-T) angle (electrically) and 3D-speckle tracking echocardiography (mechanically).

**Methods:** A total of 80 overweight patients and 80 age- and sex-matched normal weight individuals were enrolled into the study. 3D-STE examinations of the patients were performed. Electrocardiographic recordings were obtained for fQRS-T angle assessment.

**Results:** The LV-GLS and LV-GCS were significantly depressed in the overweight group than in the normal weight group (-14.5 ± 3.4 vs. -21.7 ± 3.6, p<0.001; -15.2 ± 4.6 vs. -24.3 ± 4.8, p<0.001, respectively). The fQRS-T angle was found to be increased in the overweight group (142.5 ± 39.2 vs. 114.7 ± 43.5, p = <0.001). Statistically significant positive linear correlations were observed between BMI with LV-GLS, LV-GCS, and fQRS-T angle. LV-GLS and LV-GCS were found to be disrupted linearly as BMI increased (r=0.718 for BMI and LV-GLS, r=0.653 for BMI and LV-GCS). As BMI increased, it was found that the fQRS-T angle increased (r=0.692 for BMI and fQRS-T angle).

**Conclusion:** Our results support that, overweight individuals, despite their being apparently healthy, may have subclinical LV myocardial mechanical and electrical dysfunction.

**Keywords:** Overweightness, body mass index, left ventricular dysfunction, 3D-speckle tracking echocardiography, frontal QRS-T angle

**Figure 1. A) LV-GLS value of a patient with overweight group, B) LV-GLS value of a healthy person from the normal weight group**
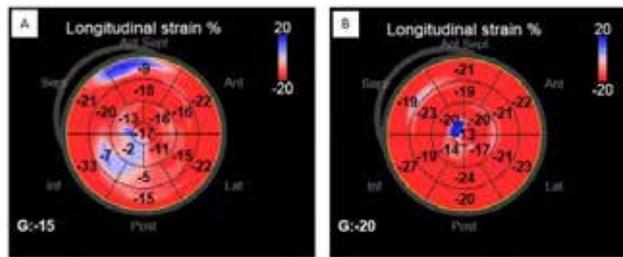


**Figure 2. A) LV-GCS value of a patient with overweight group, B) LV-GCS value of a healthy person from the normal weight group**
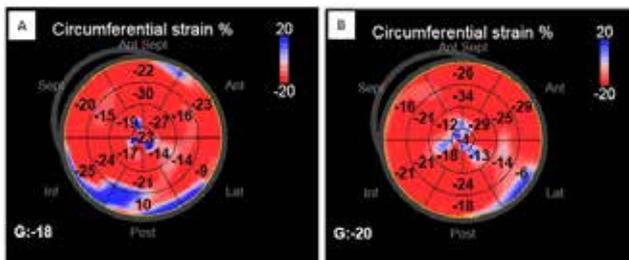


**Table 3. Correlations between BMI with 3D-STE parameters and fQRS-T angle**

|  | BMI<br>r P |
| --- | --- |
| LV-GLS | 0.718 <0.001 |
| LV-GCS | 0.653 <0.001 |
| LV-GAS | 0.221 0.314 |
| LV-GRS | -0.224 0.143 |
| fQRS-T angle | 0.692 <0.001 |

*BMI: body mass index, STE: speckle tracking echocardiography, fQRS-T: frontal QRS-T, LV: left ventricular, GLS: global longitudinal strain, GCS: global circumferential strain, GAS: global area strain, GRS: global radial strain*

**ORAL PRESENTATIONS**

**[OP-38]  EVALUATION OF BIPOLAR DISORDERS AND SCHIZOPHRENIA PATIENTS WITH ECHOCARDIOGRAPHIC GLOBAL LONGITUDINAL STRAIN**

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**Background:** Cardiovascular diseases are the leading cause of death in patients with bipolar disorder (BD) and schizophrenia. Studies examining cardiac structure and function in patients with BD and schizophrenia using echocardiography and cardiac strain imaging are insufficient. Moreover, despite the proven increased burden of cardiovascular disease in psychiatric diseases such as BD and schizophrenia, there is unfortunately a gap in early preventive treatment. In this study, we aimed to use echocardiographic global longitudinal strain (GLS) to compare cardiac structure and function between patients with BD, schizophrenia, and mentally healthy adults.

**Methods:** This study recruited 92 patients diagnosed with BD (n:47) and schizophrenia (n:45). As the control group, 53 healthy volunteers without a history of psychiatric illness were included. Transthoracic echocardiography was performed for all patients.

**Results:** There was no difference in GLS values between patients with schizophrenia and bipolar disorder (p: 0.862). GLS values of both groups were found to be statistically significantly lower than the healthy control group (-21.7 ±1.6 vs. -15.9 ±1.5 vs. -16.1 ±1.6, p<0.001).

**Discussion:** To the best of our knowledge, this is the first study to compare BD and schizophrenia patients with tissue speckle tracking echocardiography (echocardiographic GLS ) in the evaluation of cardiac structure and function among themselves and with a healthy control group. The main finding of our study was that it was associated with decreased GLS values in patients with BD and schizophrenia patients compared to the healthy group. However, no significant difference was found between BD and schizophrenia patients in terms of GLS values.

Evidence has suggested that the subendocardial layer is most vulnerable to ischemic insults. Moreover, meta-analysis and large-scale epidemiological studies have illustrated that the reduced global longitudinal strain predicts the risk of future major cardiovascular events, including myocardial infarction and heart failure. Thus, analyses of the longitudinal strain in our study could detect subclinical changes in cardiac systolic function among BD and schizophrenia patients. In our study, it was found to be associated with decreased GLS values in patients with psychiatric disorders compared to the healthy group. Nevertheless, no significant difference was found between BD and schizophrenia patients in terms of GLS values.

**Conclusion:** As a result, decreased GLS values were found in patients with psychiatric disorders compared to the healthy group in our study. Interestingly, different GLS values were also found among patients with psychiatric disorders, with statistical significance. Consequently, we think that echocardiographic GLS evaluation, which is a simple, accessible, and inexpensive test, will help in early diagnosis and early preventive treatment in these patient groups.

**Keywords:** Schizophrenia, bipolar disorder, speckle tracking echocardiography, global longitudinal strain, cardiovascular disorders

**Table 1:** Comparison of demographic, psychiatric and echocardiographic properties variables between patients with bipolar disorder, schizophrenic and healthy controls.

| | Healthy Control (n: 52) | Schizophrenic Patients (n: 44) | Bipolar Disorder Patients (n: 47) | p value |
|---|---|---|---|---|
| Age (years) | 42±10 | 42±10 | 44±12 | 0.460 |
| Sex, n (%) (Female) | 25 (48.1) | 11 (25) | 23 (48.9) | 0.031 |
| Smoking, n (%) | 14 (26.9) | 24 (54.5) | 17 (37) | 0.020 |
| Hypertension, n (%) | 1 (1.9) | 1 (2.3) | 5 (10.9) | 0.078 |
| Diabetes, n (%) | 9 (17.3) | 4 (9.1) | 3 (6.5) | 0.211 |
| Hyperlipidemia, n (%) | 24 (46.2) | 16 (36.4) | 15 (32.6) | 0.366 |
| Hemoglobin (g/dL) | 14.7±1.7 | 15.1±2 | 14.7±1.5 | 0.385 |
| Glucose (mg/dL) | 105.3±35.2 | 100±27.7 | 100±27.4 | 0.613 |
| Creatine (mg/dL) | 0.7±0.2 | 1±0.2 | 0.7±0.2 | 0.113 |
| Total cholesterol (mg/dL) | 187.5 (160-223.5) | 173 (148.1-203) | 160 (145-194) | 0.052 |
| LDL-C (mg/dL) | 114.42±36.75 | 103.82±40.16 | 100.84±36.80 | 0.186 |
| HDL-C (mg/dL) | 46.9±10.8 | 43.6±10 | 45.1±11.1 | 0.328 |
| LVEF (%) | 65±4 | 64±3 | 65±4 | 0.367 |
| LVEDD (mm) | 47±4 | 48±5 | 48±4 | 0.295 |
| LVESD (mm) | 31±4 | 32±5 | 32±5 | 0.571 |
| IVSD (mm) | 9±1 | 9±1 | 9±1 | 0.479 |
| PWD (mm) | 7.6±1.1 | 7.6±1 | 7.6±1.2 | 0.997 |
| Mitral valve E/A ratio | 1.1±0.2 | 1.2±0.4 | 1.1±0.3 | 0.307 |
| LV GLS (%) | -21.7±1.6 | -15.9±1.5 | -16.1±1.6 | <0.001 |

Abbreviations: LDL-C: Low-Density Lipoprotein Cholesterol, HDL-C: High-Density Lipoprotein Cholesterol, LVEF: Left Ventricular Ejection Fraction, LVEDD: Left Ventricular End Diastole Diameter, LVESD: Left Ventricular End Systole Diameter, IVSD: Interventricular Septum Diameter, PWD: Posterior Wall Diameter, LV GLS: Left Ventricular Global Longitudinal Strain.

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ORAL PRESENTATIONS

### [OP-39]   LEFT ATRIAL APPENDAGE STRAIN RATE PREDICTS THROMBUS FORMATION IN ATRIAL FIBRILLATION

Muge Akbulut[1], Seda Tan Kurklu[1], Halil Gulyigit[1], Emre Ozerdem[1], Volkan Kozluca[1], Kerim Esenboga[1], Emir Baskovski[1], Ayse Irem Demirtola[2], Cemre Tekin Cebeci[3], Irem Dincer[1]

[1]Ankara University
[2]Istanbul Basaksehir City Hospital
[3]Sivas Numune Hospital

**Introduction:** The left atrial appendage [LAA] is the source of emboli in nearly 90% of the cases with AF. In AF, impaired contractility of LAA results in spontaneous echo contrast [SEC] and subsequently thrombus formation in the cavity, leading to embolism. We aimed to evaluate LAA contractility by speckle tracking analysis and investigate the relationship between LAA contractility and thrombus risk in AF. Methods: 78 consecutive patients were included. All patients underwent a comprehensive TEE examination. Speckle tracking analysis of LAA was performed from the recorded images. Results: No correlation was observed between LAA SEC grade and left atrial appendage peak global, systolic or positive strain. Both LAA emptying velocity and strain rate significantly predicted the LAA SEC severity. Discussion: LAA peak global, systolic and positive strain values had no impact on LAA SEC severity. In contrast, LAA strain rate is closely related to LAA SEC grade, especially when taken together with left atrial appendage emptying velocity. A novel score called the appendage score [AS] was defined based on the above mentioned parameters that correlated well with LAA SEC severity.
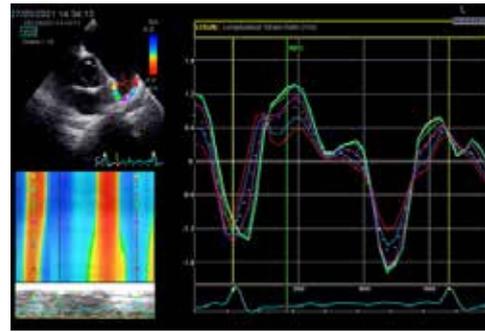
**Keywords:** atrial fibrillation, left atrial appendage, speckle tracking analysis, spontaneous echo contrast, thromboembolism

**Figure 1a. Left atrial appendage strain analysis**
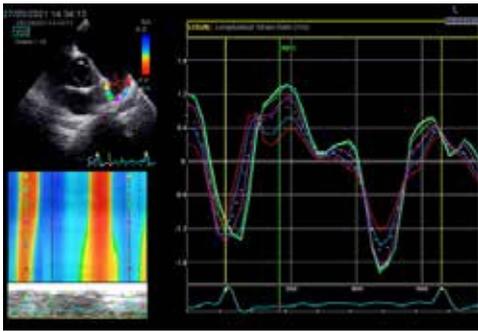


*Left atrial appendage strain analysis*

**Figure 1b. Left atrial appendage strain rate analysis.**



*Left atrial appendage strain rate analysis.*

**Table 1. Demographic and Clinical Characteristics of Patients.**

| | |
|---|---|
| Age [years] [mean±SD] | 65,5±9,79 |
| Sex [female, %] | 23 [51,1%] |
| Persistent AF [%] | 34 [75,6%] |
| Paroxysmal AF [%] | 11 [24,4%] |
| NOAC [%]<br>Warfarin<br>Apixaban<br>Edoxaban<br>Dabigatran<br>Rivaroxaban | 3 [6,7%]<br>13 [28,9%]<br>14 [31,1%]<br>4 [8,9%]<br>11 [24,4%] |
| Diabetes Mellitus [%] | 14 [31,1%] |
| Hypertension [%] | 32 [71,1%] |
| Atherosclerotic heart disease [%] | 10 [22,2%] |
| Prior stroke history [%] | 0 |
| Heart Failure [%] | 5 [11,1%] |
| eGFR [mean±SD] | 76,2±21,3 |
| CHA2DS2VASc score [mean±SD] | 2,64±1,52 |

*Demographic and Clinical Characteristics of Patients.*

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**[OP-40]   MITRAL ANNULAR CALCIFICATION MAY PREDICT POSTOPERATIVE PARAVALVULAR LEAK IN PATIENTS WITH TRANSCATHETER AORTIC VALVE IMPLANTATION**

Aykun Hakgör, Arzu Yazar

*Medipol Mega University Hospital Dept. of Cardiology*

**Objective:** Relationship between severe mitral annular calcification (MAC) and progression of aortic stenosis (AS) has already been documented. Moreover, the amount of aortic annular calcification is determinant in the development of postoperative paravalvular leak (PVL) in patients with transcatheter aortic valve implantation (TAVI). In this study, the relationship between the presence of MAC and the development of PVL after the TAVI procedure was evaluated.

**Method:** Retrospectively evaluated 200 patients (median age of 80 (75 – 85), female 96) who underwent TAVI for severe AS were included in the study. Self-expandble Corevalve (N=85), Portico (N=20) and balloon-expandble Sapien (N=95) bioprosthesis transcatheter heart valves were used. In the preprocedural transthoracic echocardiographic (TTE) evaluation, the presence of MAC was noted (MAC(+) N=103, MAC(-) N=97) in all patients. Patients with more than mild mitral valve stenosis or previous mitral valve intervention were excluded from the study. Number of patients and percentages with and without PVL and MAC were given in table-1.

**Results:** Although the presence of MAC is associated with advancing age (p=0,03) in the patient group, it does not differ with other comorbidities and gender (p>0,05 for all). A significant correlation was found between the patients with and without MAC in pre-procedural TTE, in terms of the presence of PVL in the control TTE performed in the early postoperative period (OR 2,64; 95% CI 1,46 – 4,78; p=0,01). At the same time, the need for balloon predilatation and postdilatation during the procedure was seen with a higher frequency in patients with MAC. There was no statistically significant difference between presence of MAC in TTE and in-hospital death or other major adverse cardiac events (p>0,05 for all).

**Conclusion:** Presence of MAC in the TTE performed before TAVI, might increase the risk of PVL development and the degree of leakage that occurs after valve implantation.

**Keywords:** mitral annular calcification, aortic stenosis, transcatheter aortic valve implantation, paravalvular leak

### Table-1

| | | | PVL | | |
|---|---|---|---|---|---|
| | | | PVL (–) | PVL (+) | Total |
| echo_MAC | MAC (–) | Count | 47 | 50 | 97 |
| | | % within echo_MAC | 48.5% | 51.5% | 100.0% |
| | MAC (+) | Count | 27 | 76 | 103 |
| | | % within echo_MAC | 26.2% | 73.8% | 100.0% |
| Total | | Count | 74 | 126 | 200 |
| | | % within echo_MAC | 37.0% | 63.0% | 100.0% |

*Number of the patients and percentages with and without MAC and postoperative PVL.*

**[OP-41]   THE RELATIONSHIP BETWEEN THE PRESENCE OF CROCHETAGE SIGN AND ECHOCARDIOGRAPHIC DEFECT SIZE IN PATIENTS WITH SECUNDUM ATRIAL SEPTAL DEFECT**

Ayse Colak, Zeynep Kumral

*Dokuz Eylul University Faculty of Medicine, Department of Cardiology, Izmir*

Introduction

The crochetage sign is defined as a notch on the rising edge or peak of the R wave in the limb leads on 12-lead electrocardiography (ECG). This sign was a superior ECG marker for detecting an atrial septal defect (ASD). The sensitivity and specificity of this sign for a secundum ASD progressively increase with the number of inferior leads involved and are more prominent in patients with larger defect sizes and left-to-right shunts. The presence of crochetage sign was associated with defect size, however, data on this observation in adult patients with secundum ASD was limited in the literature. Therefore, in this study, we aimed to evaluate the relationship between the presence of crochetage sign and echocardiographic defect size in adult patients with secundum ASD.

Methods

We retrospectively analyzed 70 patients with secundum ASD who underwent percutaneous ASD closure. Preoperative ECGs were evaluated to determine the presence of a crochetage sign. The defect size was determined via transesophageal echocardiography. The relationship between the presence of the crochetage sign and defect size was evaluated.

Results

The mean age of the study population was 45.1 ± 14.2 years and 56.3% (n=40) of the patients were female. The crochetage sign was detected in 34 (47.9%) patients. Incomplete right bundle branch block (RBBB) was present in 3 (4.2%) patients and RBBB was present in 10 (14.1%) patients. The crochetage sign was present in one limb lead in 4 patients, two limb leads in 14 patients, and three limb leads in 9 patients. The mean defect size was 22.2 ± 9.3 mm in patients with the crochetage sign and 17.3 ± 7.4 in patients without the crochetage sign (p=0.02). Although statistically significant, the was a weak correlation between the defect size and the presence of crochetage pattern (r=0.28, p=0.019). However, there was a strong correlation between defect size and the number of inferior leads involved (r=0.71, p<0.0001). Receiver operating characteristics analysis revealed that the area under curve (AUC) of the defect size for predicting the presence of Crochetage sign was 0.67 (95% CI 0.538-0.800, p=0.016), and the best cut-off value of 21.5 mm, sensitivity and specificity of 55% and 72%, respectively (Figure 1).

Conclusions

The presence of crochetage sign on 12 lead ECG in adult patients with secundum ASD is associated with larger echocardiographic defect size.

**Keywords:** Crochetage sign, atrial septal defect, electrocardiography

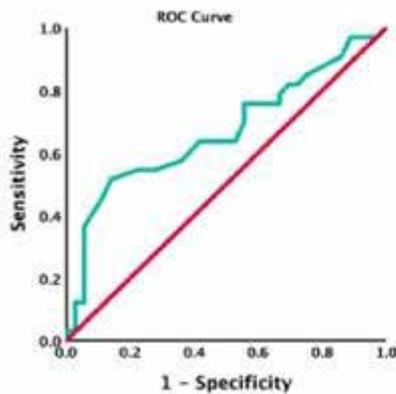**Receiver-operator-curve analysis of defect size for predicting the presence of Crochatage sign.**



Figure 1. Receiver-operator-curve analysis of defect size for predicting the presence of Crochatage sign.

**[OP-42]   THE ROLE OF LEFT VENTRICULAR OUTFLOW TRACT PRESYSTOLIC WAVE IN THE DIFFERENTIATION OF NON-OBSTRUCTIVE HYPERTROPHIC CARDIOMYOPATHY AND ATHLETE'S HEART**

Dilek Cahide Haznedar Kirci, Gulay Uzun, Muhammet Rasit Sayin

*SBÜ, Trabzon Ahi Evren GKDC EAH, Trabzon, Türkiye*

**Introduction:** Hypertrophic cardiomyopathy (HCMP) is the most important cause of sudden cardiac death in young athletes, and therefore its diagnosis is crucial. HCMP and athlete's heart can be distinguished from each other by various echocardiographic measurements. However, the differentiation may become difficult if there is no marked increase in the left ventricular wall thickness and the left ventricular outflow tract obstruction.

**Presystolic Wave (PSW) is a late diastolic activity, which can be frequently observed in the Doppler assessment of the left ventricular outflow tract. The aim of this study was to evaluate the use of PSW, assessed by Doppler echocardiography, in the differentiation of HCMP and athlete's heart.**

**Materials-Methods:** A total of 52 subjects were included in the present study, of which, 27 had HCMP and 25 were athletes. The pulsed Doppler assessment of the left ventricular outflow tract was performed on the ventricular face from the immediate proximal of the aortic valve on the apical five-chamber view (Figure 1). All patients were assessed for the presence of PSW, and the velocity of this wave was recorded in PSW positive subjects.
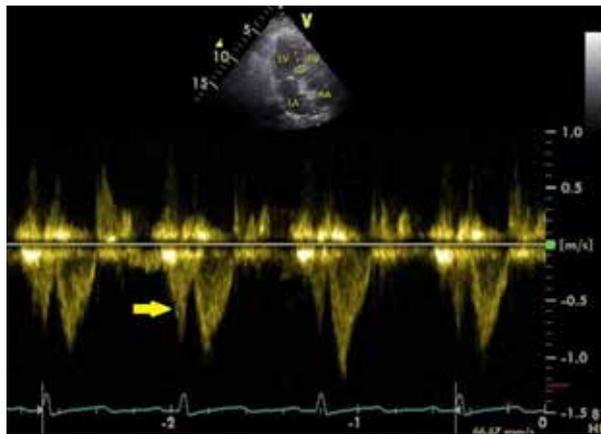
**Results:** The clinical, demographic and echocardiographic features of the patients are listed in Table 1. The frequency of PSW was found to be higher in patients with HCMP [n = 12 (44%)] than in athletes [n = 4 (16%)] (p = 0.026). PSW velocity measurements were observed to be higher in the HCMP group; however, there was no statistical significance [53 ms (36–84)], [68 ms (35–193)], (p = 0.362).

**Discussions:** Although PSW is not expected to occur in the left ventricular outflow tract under normal conditions, PSW wave can be encountered in different patient groups, with diastolic dysfunction. In our study too, HCMP patients had deterioration in their left ventricular diastolic functions, and this may have caused PSW to be observed more frequently in patients with HCMP.

In our study, the frequency and velocity of PSW were higher in the HCMP group compared to the athlete group. The current findings indicated that more frequent PSW was caused by higher left ventricular wall thickness and stiffness, accompanied by left ventricular diastolic dysfunction, and higher mitral A wave velocity in HCMP patients. Although there is a need for scaling-up such studies, PSW can be used as a distinguishing parameter in the differentiation of HCMP and athlete's heart, along with other accompanying findings.

**Keywords:** Hypertrophic Cardiomyopathy, Athlete's Heart, Presystolic Wave

**Figure 1**

**Clinical, demographic and echocardiographic features of the patients**

|  | Control, n:25 | HCM, n:27 | p |
|---|---|---|---|
| Age (years) | 26 (18–59) | 50 (20–75) | <0.001 |
| Female (n) | 7 (28%) | 6 (22%) | 0.436 |
| Body Mass Index (kg/m2) | 24.6 (19.1–32.2) | 27.9 (20.3–36.4) | 0.001 |
| Systolic Blood Pressure (mmHg) | 110 (90–130) | 120 (100–135) | 0.002 |
| Diastolic Blood Pressure (mmHg) | 70 (60–90) | 70 (60–85) | 0.222 |
| Hearth Rate (beat/min) | 70 (50–96) | 66 (53–98) | 0.309 |
| IVS (mm) | 11 (8–15) | 19 (13–28) | <0.001 |
| PW (mm) | 9 (8–14) | 14 (11–24) | <0.001 |
| LVED (mm) | 45 (31–54) | 43 (33–57) | 0.236 |
| LVES (mm) | 31 (23–47) | 29 (22–40) | 0.024 |
| LVM (g) | 153.4 (84.8–261.8) | 314.2 (207.7–684.1) | <0.001 |
| LVMI (g/m2) | 84.7 (46.8–128.35) | 168.1 (95.3–367.81) | <0.001 |
| LA (mm) | 34 (24–39) | 36 (20–48) | 0.032 |
| AO (mm) | 26 (17–41) | 24 (20–31) | 0.734 |
| AO VEL ( m/s) | 128 (96–187) | 153 (73–271) | 0.001 |
| MITRAL E (mm/s) | 78 (39–140) | 70 (40–104) | 0.374 |
| MITRAL A (mm/s) | 54 (40–120) | 71 (35–145) | 0.003 |
| MITRAL E/A | 1.5 (0.63–2.24) | 0.93 (0.60–2.07) | 0.019 |
| EDT (msn) | 227 (80–374) | 242 (150–380) | 0.420 |
| SEPTAL SM (cm/s) | 11 (8–19) | 6 (3–14) | <0.001 |
| SEPTAL EM (cm/s) | 16 (2–29) | 6 (3–11) | <0.001 |
| SEPTAL AM (cm/s) | 10 (4–20) | 7 (3–17) | 0.002 |
| SEPTAL E/EM | 6.5 (4.0–15.6) | 12.6 (5.6–27.6) | <0.001 |
| LATERAL SM (cm/s) | 9 (6–14) | 7 (3–12) | <0.001 |
| LATERAL EM (cm/s) | 10 (5–19) | 7 (4–14) | <0.001 |
| LATERAL AM (cm/s) | 10 (5–15) | 8 (3–16) | 0.197 |
| LATERAL E/EM | 6.5 (4.0–15.6) | 8.6 (5.5–20.7) | 0.017 |
| PSW (n) | 4 (16%) | 12 (44%) | 0.026 |
| PSW Velocity (m/s) | 53 (36–84) | 68 (35–193) | 0.362 |
| PSVEL /MITRAL A | 0.69 (0.63–1.47) | 0.95 (0.45–2.41) | 0.332 |

IVS: Interventricular septum, PW: Posterior wall, LVDd: Left ventricular end diastole diameter, LVES: Left ventricular end systole diameter, LVM: Left ventricular mass, LVMI: Left ventricular mass index, LA: Left atrium, AO: Aort, AO VEL: Aort velocity, EDT: E wave deceleration time, SM: Systolic myocardial velocity, EM: Early diastolic myocardial velocity, AM: Late diastolic myocardial velocity, PSW: Presystolic wave

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**[OP-43]   A DIFFERENT APPROACH TO THE VALVE-IN-VALVE TAVR: TRANSSEPTAL VALVE-IN-VALVE**

Ali Can Özkan, Mehmet Akif Erdöl, Ahmet Korkmaz, Ahmet Göktuğ Ertem, Çağrı Yayla, Adnan Burak Akçay

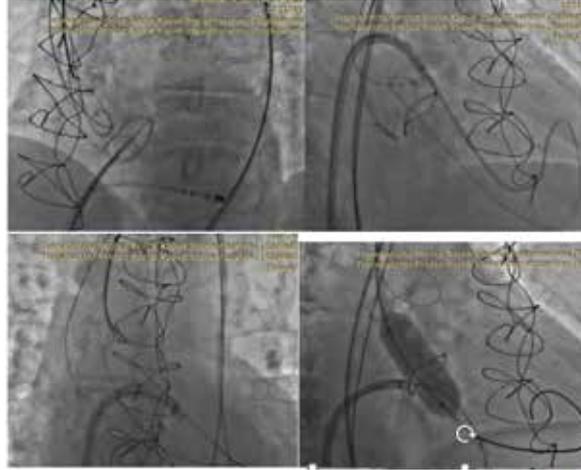*Cardiology, Ankara Bilkent City Hospital, Saglik Bilimleri University, Ankara*

**Background:** Antegrade transseptal approach was utilized in the first human case of transcatheter aortic valve replacement (TAVR) performed in 2002 and in the early phase of TAVR.[1,2] Although the antegrade approach was utilized, several major shortcomings of this approach became evident. Specifically, this included procedural complexity requiring transseptal access, as well as interference with and possible injury to the mitral leaflet by a stiff wire or from passage of the exposed valve frame. In this case, we present a valve-in-valve case whose aortic valve cannot be crossed retrogradely then the successful passage through the antegrade transseptal access.

**Case:** A 78-year old female patient underwent sorın bıocor 21 bıoprosthetıc aortıc valve surgery 7 years ago. Echocardiography was performed due to exercıse dyspnea and a grade of 90/65 mmhg was found on the aortıc valve. After that valve-ın-valve tavr planned for the patıent. The 5f pıgtaıl catheter placed through the left radıal artery to the non coronary cuspıce. Then, 7f sheath was placed rıght and left femoral artery and veın. Amplatz superstıff wıre from rıght femoral artery and back-up meıer wıre from the left femoral artery was placed ın the aorta to pass the serıous tortıosıty ın the aorta. Bıoprosthetıc aortıc valve cannot be passed as retrograd through many trıals wıth hydrophılıc and normal flat wıre. After that, through the rıght femoral veın, ıt was passed from the rıght atrıum to the left atrıum wıth sl catheter and septostomy needle. Agılıs nxt steerable ıntroducer was placed ın the left atrıum. Wıth the help of al1 dıagnostıc catheter, 300 cm noodle wıre was passed from left ventrıcle (lv) to aorta. Noodle wıre delıvered from lv to assendan aorta by assıstance of left femoral artery was caught wıth wıre snare. Predılatatıon was made to the valve wıth a 10x4 cm balloon over agılıs catheter. Then the wıre was externed from the left femoral artery wıth snare. 14 f myval sheath was placed ın the left femoral artery regıon. Over externalızed wıre, pıgtaıl was left on lv. Backup meıer wıre was left to lv. Predılatatıon was made wıth 18 mm balloon (paced wıth 200/mın temporary pace.). Then the 21.5 sıze myval tavı valve ıs placed. Mıld paravalvular leak was observed. There was no complıcatıons after the procedure. After procedure, maxımum gradıent was measured as 21 mmhg.
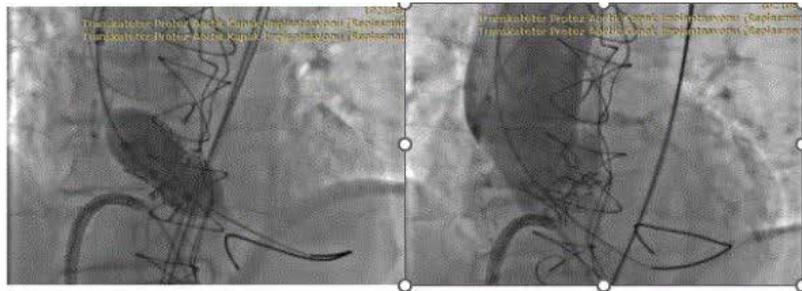
**Conclusion:** The antegrade transseptal approach can be a suitable alternative access option for selected patients.

**Keywords:** TAVR, Transseptal Approach, Valve-in-valve

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**[OP-44]   APPLICATION OF DK CRUSH TECHNIQUE FOR STENTING IN A PATIENT WITH ANTERIOR ST-ELEVATION MYOCARDIAL INFARCTION FOLLOWING PRECISE OSTIAL STENTING OF THE LAD WITH TYPE 1 DUAL LAD**

Muhammed Kemal Kahyalar

*Sincan Eğitim ve Araştırma Hastanesi*

**SUMMARY:**We present a case of 50-year-old male admitting with chest pain and shortness of breath and he was diagnosed with anterior ST-elevated myocardial infection(STEMI)and underwent coronary angiography(CA) and it was found that he had type1 dual LAD(left anterior descending coronary artery).Dual LAD(especially typeI)has been usually reported to have no clinical significance.However,it is important to know the anatomic variations of this anomaly in patients with coronary artery disease in whom percutaneous revascularization will be performed.

**Introduction:** According to the literature,the prevalence of Coronary Artery Anomalies is 0.2-1.3% of patients who underwent CA and in 0.3% of autopsy series.In order to classify angiography-based dual LAD anomalies,Spindola-Franco defined 4 types of dual LAD anomalies.Type1 is the most common type.In this case,we present a patient with anterior STEMI who was successfully treated with DKcrush method for Medina 1,1,1 lesions detected as dual LAD during procedure.

**CASEREPORT:**A 50-year-old male patient presented with the complaints of retrosternal chest pain and shortness of breath associated with exertion for a few days.He has a history of diabetes mellitus.On examination, there were no significant findings other than bilateral rales in the lung bases, and tachycardia.Electrocardiography(ECG)was consistent with subacute anterior STEMI and transthoracicachechocardiography(TTE)EF(ejection fraction) was 25% akinetic at the apex, anterior and septum walls.The patient was processed for primary percutaneous coronary intervention(PCI).CA revealed 100% occlusion of the LAD osteal.Primary PCI was planned for the LAD.LAD osteal lesion was passed with a wire,and predilatation and then precise osteal stenting were applied to the lesion.When TIMI-3 flow developed in the vessel,which was thought to be a developed diagonal branch in the poses taken,it was understood that the long LAD coronary anomaly of the vessel was type I dual LAD.We observed that the short LAD reached to anterior interventricular septum(AIS)before cardiac apex.On the other hand,long LAD reached to left ventricular anterior wall and entered AIS and ended at cardiac apex.Short and long LAD coronary arteries were successfully opened with bifurcation procedure with double kissing crush(DKC)method.The patient's complaints subsided during hospitalization and STelevation decreased to isoelectric line.The patient's EF was 45% before being discharged. At first month control,cardiac walls were evaluated as normokinetic and EF was 60% with TTE.

**DİSCUSSİON:**Coronary anomalies should be considered during PCI inSTEMI patients.In our case,precise LAD osteal stenting was followed by detection of type 1 dual LAD and successful patency was achieved with the DKC method.In conclusion,knowing the coronary anomalies in patients undergoing percutaneous intervention in acute coronary syndromes is important for successful myocardial revascularization.

**Keywords:** Dual left anterior descending artery(LAD), coronary artery anomaly, double kissing crush (DKC), ST-elevated myocardial infection (STEMI), coronary angiography(CA)

| Dual LAD 2 | TİP 1 DUAL LAD |
|---|---|



*After DKC method*



*After LAD osteal Precise stenting,TIMI-3 flow was seen in long LAD artery*

**[OP-45]  ASSESSING THE ASSOCIATION BETWEEN THE ATHEROGENIC INDEX OF PLASMA AND CORONARY PLAQUE BURDEN: A RETROSPECTIVE INTRAVASCULAR ULTRASOUND ANALYSIS**

Aslan Erdoğan, Arda Şişman, Ayşe Irem Demirtola

*Cam&Sakura City Hospital*

**Background:** In the context of atherogenesis and the development of coronary artery disease, inflammation and lipid metabolism are known to be significant contributing factors. This study aimed to explore the potential association between the Atherogenic Index of Plasma (AIP) and plaque burden in patients who underwent intravascular ultrasound (IVUS) examination.

**Methods:** A retrospective analysis was conducted on a cohort of seventy-six consecutive patients who had undergone IVUS between June 2020 and May 2023. AIP, calculated as the logarithm of plasma triglyceride divided by high-density lipoprotein cholesterol, was utilized as a measure of atherogenicity. Plaque burden, expressed as a percentage, was determined by dividing the total plaque area by the total vessel area. Multivariate regression analysis and Spearman's correlation analysis were employed to investigate the relationship between AIP and high plaque burden.

**Results:** The median age of the overall population was 59 years (interquartile range: 55-68), with males comprising 72.4% of the sample. Univariate regression analysis revealed that age, diabetes mellitus (DM), smoking, and AIP were significant predictors of plaque burden. Furthermore, multivariate regression analysis indicated that AIP and DM independently predicted high plaque burden (odds ratio [OR] = 1.53, 95% confidence interval [CI]: 1.12-2.02, p = 0.021). Spearman's correlation analysis demonstrated a positive correlation between the AIP index and high plaque burden (rho: 0.682, p < 0.05).

**Conclusion:** This study provides evidence that the AIP index, a surrogate marker of atherosclerosis, may serve as a predictive tool for assessing plaque burden in patients undergoing IVUS examination. These findings contribute to our understanding of the association between lipid metabolism, inflammation, and atherogenesis, potentially aiding in risk assessment and disease management.

**Keywords:** atherosclerosis, atherogenic index of plasma, inflammation,

**Keywords:** atherosclerosis, atherogenic index of plasma, inflammation

**correlation analysis**
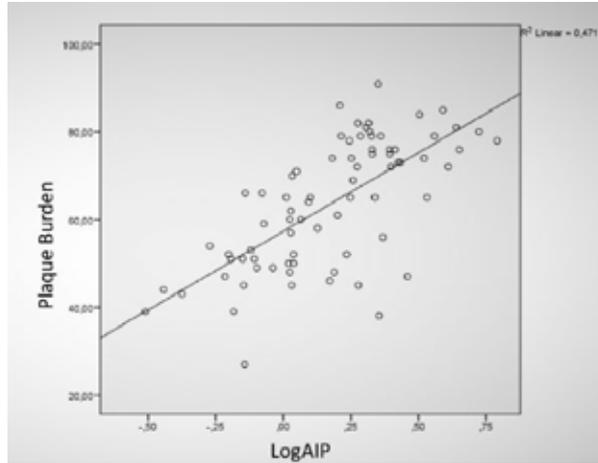


**Univariate and multivariate regression analysis for predicting plaque burden**

| | Univariate Analysis | Multivariate Analysis |
|---|---|---|
| Variable | OR CI(95%) p | OR CI (95%) p* |
| Age | 1.03 (1.01-1.05) 0.049 | 0.98 (0.96-1.00) 0.280 |
| Smoking | 1.05 (1.02-1.25) 0.031 | 1.01 (0.99-1.05) 0.080 |
| DM | 1.34 (1.05-1.52) 0.029 | 1.03 (1.01-1.45) 0.044 |
| TG/HDL | 1.75 (1.41-2.5) <0.001 | 1.53 (1.12-2.02) 0.021 |

**[OP-46]** DO WE KNOW ENOUGH ABOUT RADIATION EXPOSURE AND ITS SIDE EFFECTS IN INVASIVE CARDIOLOGICAL PROCEDURES?

Saadet Aydin

*Bakircay University, Faculty Of Medicine, Department of Cardiology*

**Introduction:** Minimizing radiation exposure during X-ray fluoroscopically guided procedures is critical to patients and medical personnel health. Different invasive cardiological procedures vary in fluoroscopy and recording time. In this study, differences in radiation exposure of patients in different invasive cardiological procedures and possible side effects were investigated.

**Material-Methods:** This study included 137 consecutive patients who went elective invasive cardiological procedures. These procedures were performed by the General Electric Innova 3100 angiographic system (Buc Cedex, France). The radiation exposure levels of patients in different invasive cardiological procedures and various possible skin side effects were prospectively investigated. In addition, before and after the operators' training on radiation, the process radiation levels were compared. The data were statistically evaluated using the SPSS 21 statistical program.

**Results:** Of the 137 patients, 61 (45.5) of them were female and 76 (55.5%) of them were male (mean age was $62.7 \pm 11.6$; mean BMI was $28.9 \pm 4.9$). There is positive correlation between fluoro dose (mGy) and BMI of the patients ($r=0.396$, $p<0.001$) (Figure-1). Also, more radiation exposure levels were observed in male than in female ($p<0.05$). Within 1 month after the procedure, various degrees of itching (6.6%), pigmentation (1.5%), erythema (5.1%),

drying (5.8%) and ulcerated lesions (0.7%) were observed on the skin of the patients. Higher levels of radiation dose exposure were detected in those with skin lesions than in those without (for all comparisons, $p<0.001$). Mean patients radiation exposure levels in different invasive cardiological procedures are shown in Table. After the seminar training of the physicians

on radiation protection, it was determined that the procedure radiation doses (mGy) decreased statistically significant ($2404 \pm 354.4$, $772.6 \pm 86.8$; $p<0.001$, respectively). It was also shown that fluoro time, total DAP, record DAP and fluoro DAP levels were statistically significantly decreased after radiation protection training (for all comparisons, $p<0.001$) (Figure-2).

**Conclusion:** In this study, more radiation exposure levels were observed in male and overweight patients. At the same time exposure increased with age. These conditions can be explained by more frequent and serious cardiac problems in elderly obese male patients. Also, patients with further invasive procedures in terms of PTA, PCI, and PCI with CABG had higher radiation doses and durations. However, after the radiation protection training, it was observed that the process radiation levels decreased due to the increased sensitivity of the operators on this issue. At the same time, we understand that it is necessary to be sensitive in terms of complications that may develop due to radiation. For more detailed information about this issue, large-scale randomized studies are needed.

**Keywords:** radiation, invasive, cardiology

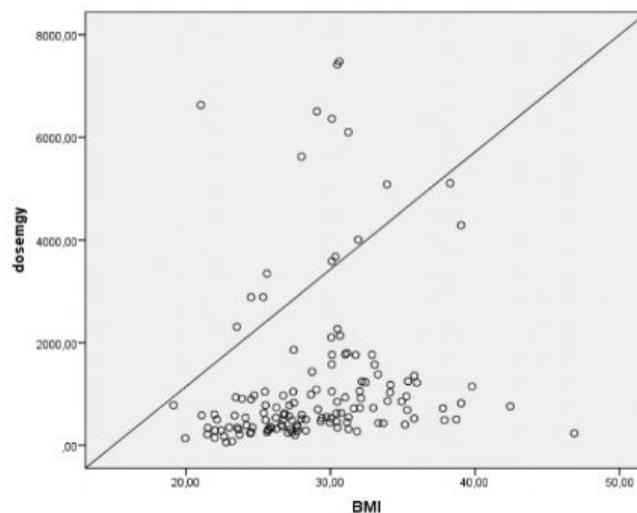**Figure 1.Correlation between fluoro dose (mGy) and BMI of the patients**



**Figure 2.Mean levels of radiation parameters in procedures according to radiation protection training**

| Protection training | Fluoro Time (sn) | Dose (mGy) | Total DAP (cGy cm2) | Record DAP (cGy cm2) | Fluoro DAP (cGy cm2) |
|---|---|---|---|---|---|
| (-) (n=39) | 999.7±1091.1 | 2404.2±2212.9 | 17550.5±15683.7 | 4578.2±3640.3 | 12971.8±12979.1 |
| (+) (n=98) | 287.6±363.9 | 772.6 ±859.8 | 5655.2±6049.4 | 2444.5±1534.5 | 3220.4±4975.5 |

**Table.Radiation exposure levels of patients in different invasive cardiological procedures**

| | Fluoro Time (sn) | Dose (mGy) | Total DAP (cGy cm2) | Record DAP (cGy cm2) | Fluoro DAP (cGy cm2) |
|---|---|---|---|---|---|
| Diag. Fem. CAG (n=90) | 238.3±254.8 | 671.6±514.2 | 4967.7±3896.6 | 2310.1±1126.3 | 2668.2±3200.5 |
| Diag. Fem. CAG (n=90) | 224.0±0.0 | 738.0±0.0 | 5097.0±0.0 | 2023.0±0.0 | 3074.0±0.0 |
| PCI (n=27) | 1026.6±887.1 | 2807.4±2264.2 | 19861.7±15764.5 | 5099.9±3312.5 | 14761.3±13581.9 |
| Right Heart Cath. (n=2) | 930.0±728.3 | 2554.5±2451.5 | 23687.5±22461.2 | 2821.0±3428.1 | 20865.5±19033.1 |
| Peripheric Ang. (n=3) | 268.7±121.5 | 950.6±370.9 | 7153.0±2592.8 | 3659.3±647.4 | 3493.0±1947.9 |
| PTA (n=3) | 2716.0±2482.0 | 2161.3±3019.5 | 16033.6±19385.1 | 3906.6±5204.6 | 12127.0±14671.4 |
| Pacemaker Imp. (3) | 106.6±43.0 | 338.6±219.1 | 2559.0±1200.6 | 1260.6±1099.7 | 1298.0±737.3 |
| CABG Ang. (n=8) | 831.5±631.1 | 2129.8±2389.0 | 15701.2±16845.5 | 4794.6±5216.4 | 10906.1±12152.3 |

**[OP-47]** **DOUBLE CHECK IN TRANSSEPTAL PUNCTURE: ENHANCING SAFETY AND REDUCING COMPLICATIONS IN CLINICAL PRACTICE: A SINGLE CENTER EXPERIENCE**

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*Clinic of Cardiology, Cam & Sakura City Hospital, Istanbul, Turkey*

**Background:** Transseptal puncture(TSP) is a common procedure used in the diagnosis and treatment of a variety of heart conditions, such as atrial fibrillation, mitral valve disease, and pulmonary hypertension. It involves puncturing the wall that separates the two upper chambers of the heart, the left and right atria, to gain access to the left side of the heart. During TSP, it is important to ensure that the puncture is made in the correct location and that no complications occur. However, it carries risks such as pericardial effusion or tamponade (0.5-1.5%), stroke or embolism (0.2-0.5%).

**Objective:** The aim of this study is to share the results of using a secondary verification method in our clinic to minimize complications of TSP, a cornerstone procedure in electrophysiology.

**Methods:** The procedure of TSP can be performed with the support of intracardiac echocardiography (ICE) or transesophageal echocardiography(TEE), or with only fluoroscopy without imaging support. Pressure monitoring or contrast injection are common methods used to confirm the passage to the left atrium. In our single-center records, we used the double verification method after passing from the fossa ovalis to the left atrium with a needle. Initially, we ascertained the left atrial (LA) access by administering 5 cc of contrast. As a secondary verification measure, we introduced a soft guide wire (floppy) through the needle, ensuring its advancement towards the pulmonary veins. Subsequently, we performed the LA passage with a dilator. In this way, in addition to double verification, by considering the anterior/posterior direction of the passage and by applying more force during the advancement of the dilator, especially in lipomatous septums, we prevented trauma to the left atrium during sudden passage.

**Results:** Between May 2020 and January 2023, records were obtained for 449 patients in the arrhythmia department. The average age was 42 ± 21, and there were 231 male patients (51%). Cryoablation for PVI isolation was performed on 212 patients (47.2%), while 176 patients (39.1%) underwent radiofrequency ablation. Among those treated with RF for PVI, 48 patients had a double transseptal puncture. For 47 patients (10.4%) where a successful route could not be achieved via the retroaortic path, SVT ablation was performed, and 14 patients (3.3%) underwent cardioneural ablation. In all patients where access was obtained via the left transseptal route, no complications such as tamponade, pericardial effusion, or other potential issues associated with transseptal access were observed.

**Conclusion:** After contrast administration, using a guidewire for secondary verification in transseptal punctures can serve as a useful method to avoid serious complications.

**Keywords:** Transseptal punture, tamponad, ablation

**First verification:** Confirming the presence of the needle in the left atrium using contrast.



**Second verification:** Advancing the guidewire to the pulmonary veins both confirms the LA entry and minimizes potential needle trauma during transseptal puncture.
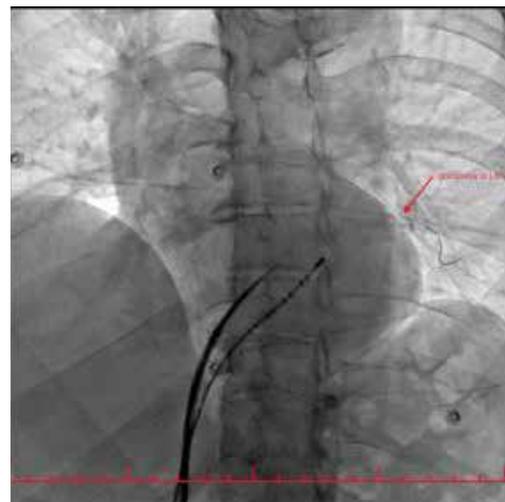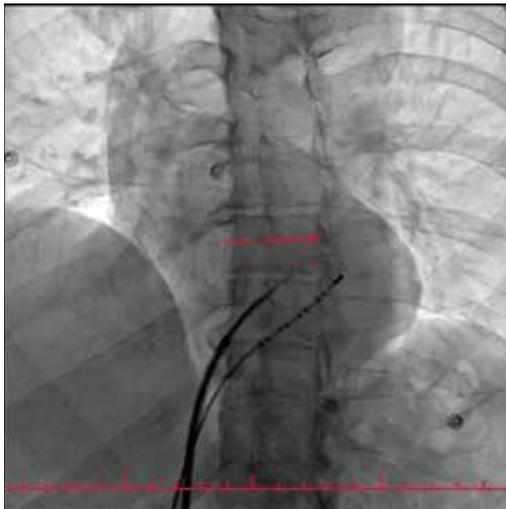
**[OP-48]** EFFECT OF PERCUTANEOUS CORONARY INTERVENTION WITH LONG PREDILATATION PERIOD ON CORONARY FLOW IN PATIENTS WITH ACUTE ST SEGMENT ELEVATION MYOCARDIAL INFARCTION

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[2]Cardiology, Istanbul Faculty of Medicine, Istanbul University, Istanbul, Turkey

**Objective:** Coronary artery disease ranks first when the causes of death are examined worldwide. After the diagnosis of STEMI is established, prompt revascularization is urgent. It is known that the better the coronary flow and perfusion are, the better the long-term results of the patient. In our study, it was aimed to compare the effects of balloon angioplasty with long and short-term predilation on coronary flow in primary PCIs in STEMI with some determining parameters.

**Methods:** 62 patients who applied to our clinic with the diagnosis of STEMI and underwent primary PCI were included in our study. Predilation was performed with a short-term balloon under 30 seconds in 31 patients, and a long-term balloon over 30 seconds in the other 31 patients. ST segment resolutions, laboratory parameters, troponin follow-ups and peak hours were observed in the ECG of both groups after the procedure. Parameters such as TIMI score, TIMIfc and MBG of the revascularized responsible vessel after the procedure were evaluated.

**Results:** Participants in both groups were found to be similar in terms of features other than the investigated parameters. ($p>0.05$) In the time graph of the troponin value after the procedure, it was observed that those who ballooned for a long time reached the troponin peak value in the earlier hours. Percentages of ECG improvement over time in the long-term balloon group at 1,3 and 6 hours ($78.71\pm21$, $92.26\pm1$, $96.77\pm1$, respectively) compared to the short balloon group ($60.97\pm2$, 81, respectively). $94\pm1$, $92.90\pm1$) was higher. ($p<0.05$) In the logistic regression analysis performed to determine the factors affecting TIMIfc and MBG flow, the explanatory power of the model was between 28.7% and 43.7% for R2 and between 28.8% and 46.0% for R2, respectively. While increasing age affected TIMIfc and MBG negatively, increasing balloon time had a positive effect on TIMIfc and MBG flow. ($p<0.05$)

**Conclusion:** In our study, in primary PCI applied to patients presenting with STEMI, long-term balloon predilation improved parameters such as TIMI, TIMIfc, MBG compared to short-term predilation, thus providing a better coronary flow and perfusion, and reaching the troponin peak value faster. showed a faster resolution. If similar findings are demonstrated in larger studies, standardizing the balloon duration will be beneficial in terms of STEMI and subsequent prognosis.

**Keywords:** STEMI, predilatation, long, coronary, flow

**Logistic Regression Analysis to Determine Factors Affecting TIMIfc Flow in predilation with long and short balloon**



**Time graph of Troponin value in predilation with long and short balloon**
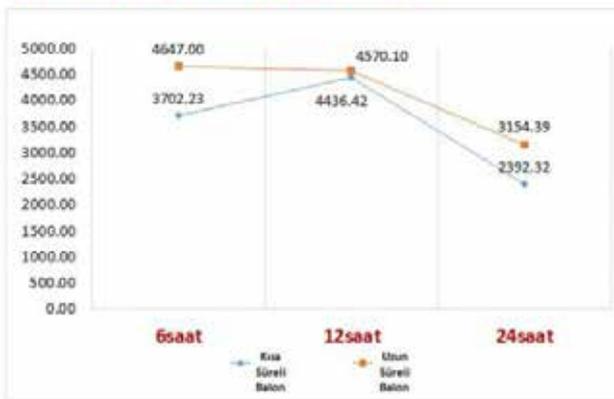
**[OP-49]   ASSESMENT OF UNDEFINED MYOCARDIAL INFARCTION USING CARDIAC MRI IN PATIENTS WITH END-STAGE RENAL DISEASE**

Ihsan Yuce[1], Mustafa Keles[2], Mecit Kantarci[3]

[1]Izmir Ozel Avrupa Cerrahi Tıp Merkezi
[2]MMT Amerikan Hastanesi
[3]Atatürk Üniversitesi Tıp Fakültesi

**Aims and Objectives:** Undefined myocardial infarction (UMI) is characterized with presence of myocardial scarring in subjects who had no history of myocardial infarction (MI). Data derived from population-based studies showed that mortality rate of patients with UMI is nearly 45-55 %. This rate is high as of patients with MI or may be higher. Nevertheless, end-stage renal disease (ESRD) comprises high risk of UMI. In our study, we assessed the cardiac viability of patients with ESRD. We aimed to detect the UMI frequency, to reveal the other ischemic events, to introduce the effectiveness of cardiac magnetic resonance (CMR) imaging in the risk population and to compare the imaging findings with electrocardiography (ECG) and laboratory results.

**Methods-Materials:** Our study consisted of 20 patients referred to radiology department from nephrology clinic for CMR examination between June 2010 and December 2011. Sixty percent of the patients were female (n: 12, mean age: 44.5) and forty percent of were male (n: 8, mean age: 52.6). In all patients, resting left ventricle (LV) functions and assessment of myocardial early and late contrast enhancement were evaluated and risk groups were determined. All examinations were performed with a 1.5 Tesla magnetic resonance imaging (MRI) scanner (Siemens, Magnetom Avanto, Forchheim, Germany). ECG and laboratory test were also performed in all patients. Patients were followed clinically for an average of 18 ± 4 months.

**Results:** In our study group, pathological findings were detected in six patients (30%). Scar tissue was (high risk) detected in three (15%) (Figure 1-2), hibernation was (moderate risk) detected in three (15%) patients. There were no pathology (low risk) detected in the remaining 14 patients. There was a statistically significant difference in terms of mortality between patients in high and low risk groups (p<0.05). Comparing ECG and troponin levels did not show significant difference.

**Conclusion:** Our study showed that in patient population, CMR is successfully able to make risk group classification and reveal the ischemic events even those can not be demonstrated with ECG and laboratory tests. CMR, which is capable of demonstrating the coronary ischemia and defining the UMI, now emerges as a non-invasive imaging technique in patients with ESRD.
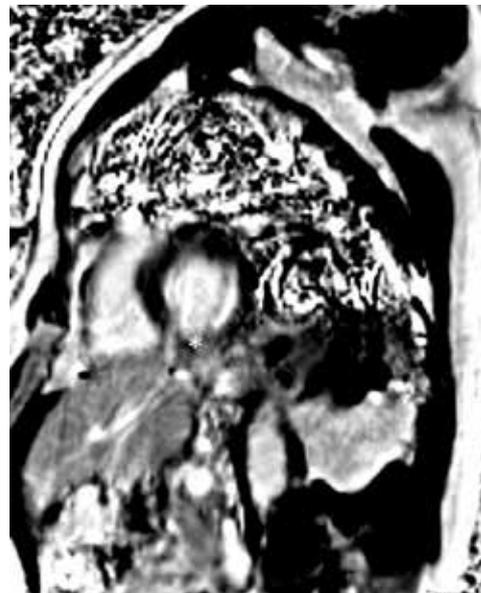
**Keywords:** Cardiac MR, end stage renal disease, viability

### Figure 1
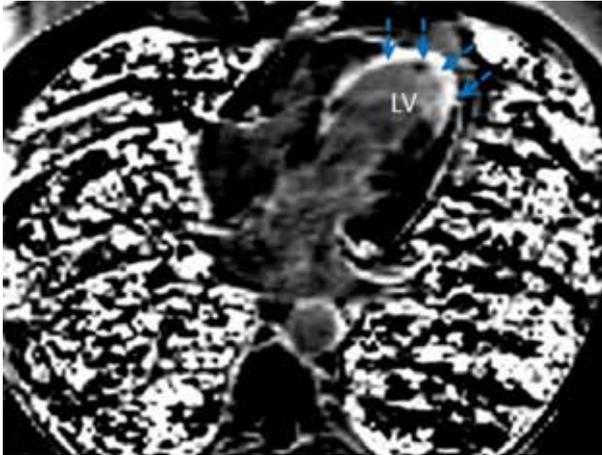


*Delayed enhancement cardiac MR image shows scar tissue in left ventricular apex (blue dashed arrows). LV: left ventricle.*

### Figure 2



*Another patient's MR image shows scar tissue in left ventricular mid- inferior segment (asterisk).*

**[OP-50]**  **ASSESSMENT OF ARTERIAL ENDOTHELIAL DYSFUNCTION IN PATIENTS WITH VENOUS THROMBOEMBOLISM**

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*Cukurova University, Faculty of Medicine, Department of Cardiology*

**Objective:** In this study, we aimed to determine arterial endothelial function and cardiovascular risk in patients with a history of venous thromboembolism (VTE) using non-invasive diagnostic methods such as flow-mediated dilatation (FMD) and pulse wave velocity (PWV).

**Methods:** The study included 100 venous thromboembolism patients over 18 years of age and 102 volunteers without a history of venous thromboembolism who were admitted to the Cardiology Department of Çukurova University Balcalı Hospital. Physical examination was performed and demographic data, body mass index, hypertension, diabetes mellitus, hypertension, diabetes mellitus, cancer history, covid history, flow-mediated dilatation and pulse wave velocity parameters were evaluated. Patients under 18 years of age, those with a history of coronary artery disease and heart failure, and smokers were excluded.

**Results:** Two groups were included as case group (history of VTE) and control group. The mean age of those included in the study was 47.4±16.8 years and 120 (59.4%) of them were female. No significant difference was found between the groups in terms of age and gender. Between the case and control groups, flow-mediated dilatation rates were found to be significantly lower in the case group compared to the control group (VTE: 12.5±5.8 Control: 18.7±4.3 p<0.001). PWV value was higher in the case group than in the control group (VTE: 7.92±1.9 control: 5.86±0.7 p<0.001). In addition, all individuals in the case and control groups were divided into two groups as those with FMD percentage below 10% and those without FMD. Age, HT, BMI and history of VTE were significantly different in the group with significantly reduced flow-mediated dilatation. In logistic regression analysis in which flow-mediated dilatation below 10% was modeled as the dependent variable and age, HT, DM and history of VTE were modeled as independent variables, history of VTE (OR: 6.30; 1.20-33.07 95% confidence interval) and age (OR: 1.16; 1.09-1.22 95% confidence interval) were independently associated with FMD deterioration.

**Conclusion:** The main conclusion of this study is that VTE is associated with impaired arterial endothelial function and may be a risk factor for cardiovascular diseases.
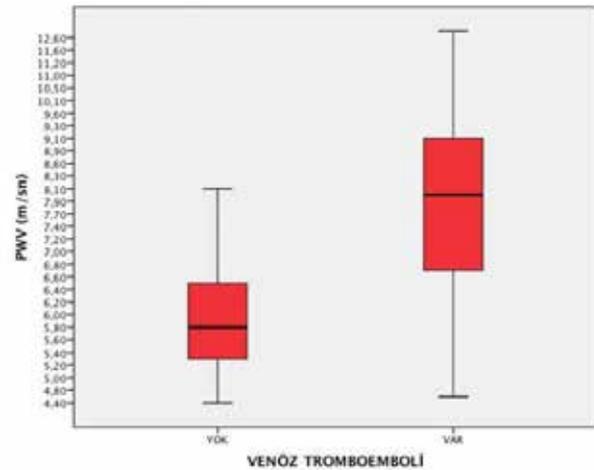
**Keywords:** flow-mediated dilatation, endothelial dysfunction, venous thromboembolism
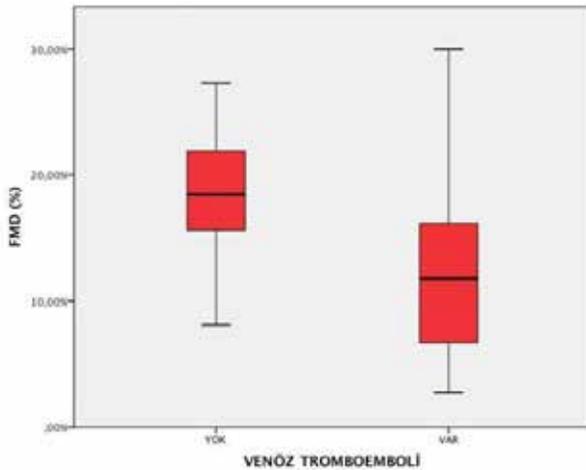
**Figure 1**



*Boxplot- FMD*

**Figure 2**



*Boxplot-PWV*

**[OP-51]   CARDIOLOGY SERVICES IN ADIYAMAN CITY CENTER AFTER THE FEBRUARY 6 EARTHQUAKES**

Yusuf Hosoglu, Ayşe Hosoglu

*Adıyaman University Training and Research Hospital*

**Introduction:** On February 6, 2023, two major earthquakes hit 14 provinces in Turkey. According to official figures, these earthquakes resulted in the death of 50,783 people, and around 100,000 people were injured. Despite the damaged state of Adıyaman Training and Research Hospital (ATRH), it continued to provide services immediately after the earthquakes.

This presentation aims to compare the cardiology services provided at ATRH during the period from February 6, 2023, to June 1, 2023, when health-care services approached normalcy after the earthquakes, with the services provided during the same period in the previous year.

**Methods:** Patient data from the cardiology department of ATRH after the February 6 earthquakes will be collected and compared with the data from the same period before the earthquake retropsectively. The study will analyze the number of outpatient and inpatient treatments, types, and quantities of procedures performed in the angiography laboratory.

**Results:** After the February 6 earthquakes, various changes were observed in the cardiology services in Adıyaman. The ATRH was the only healthcare facility in Adıyaman center that continued to operate after the earthquake. The cardiology department was initially closed, and the coronary intensive care unit primarily admitted trauma patients. Despite damages in the angiography unit, the first angiographic procedure was performed on February 9, 2023. Until 45 days after the earthquake, only STEMI cases were followed up among acute coronary syndrome patients, while other cases were transferred to neighboring provinces after stabilization. Invasive interventions were performed without surgical support until June 1, 2023. On June 1, 2023, the cardiology department was reopened, and elective angiography procedures were resumed.

The number of patients visiting cardiology clinics in the earthquake-affected region significantly decreased. Moreover, there was a decline in the number of patients receiving inpatient care in the cardiology department and coronary intensive care unit. The reduction in the number of outpatient and inpatient cases was also reflected in a substantial decrease in the number of invasive procedures performed.

**Discussion:** The changes in cardiology services demonstrate the impact of the February 6 earthquakes. The number of affected individuals, damages to healthcare facilities, disruptions in routine healthcare services due to healthcare workers' personal losses and injuries, all contributed to the ob-served setbacks. Additionally, deaths, the migration of earthquake survivors, and difficulties in reaching the hospital resulted in a significant decrease in patient numbers.

The data analyzed were solely from ATHR, limiting the generalizability of the results.

**Conclusion:** This study showed significant changes in cardiology services in Adıyaman after the earthquakes on February 6.

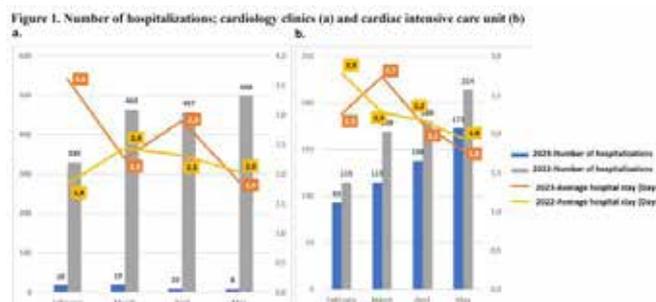**Keywords:** Cardiology services, earthquake, STEMI

**Figure 1**



*Figure 1. Number of hospitalizations; cardiology clinics (a) and cardiac intensive care unit (b)*
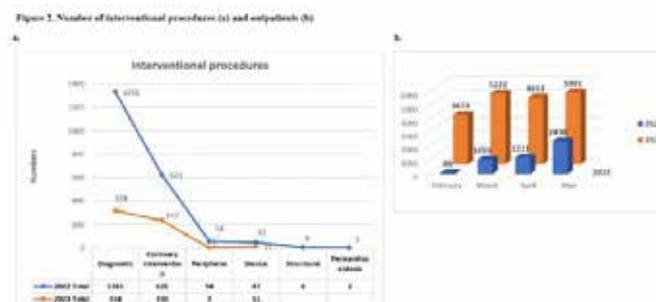
**Figure 2.**



*Figure 2. Number of interventional procedures (a) and outpatients (b)*

**[OP-52]    IMMEDIATE PERICARDIAL PROTAMINE ADMINISTRATION DURING UNCONTROLLABLE ACUTE IATROGENIC HEMORRHAGIC CARDIAC TAMPONADE: A SAFETY AND FEASIBILITY STUDY**

Başar Candemir[1], <u>Büşra Kuru</u>[1], Ibrahim Ersöz[2], Şeyhmus Atan[1], Yakup Yunus Yamantürk[1], Irem Cenan Büyükçakır[1], Volkan Kozluca[1], Osman Beton[3]

[1]Ankara University Faculty Of Medicine
[2]Afyonkarahisar Health Sciences University
[3]Cyprus International University

**Aims:** Cardiac tamponade (CT) is the most common life-threatening complication of interventional electrophysiology. Urgent drainage by percutaneous pericardiocentesis and anticoagulation reversal are required. Immediate direct protamine administration to the pericardial space to the patient has not been described. This study was designed to assess the efficacy and safety of immediate intrapericardial protamine administration (IPPA) in CT as a complication of interventional electrophysiologic procedure.

**Methods:** A retrospective case series of IPPA performed for CT was collected. Urgent drainage by percutaneous pericardiocentesis and IPPA were performed to achieve hemodynamic stabilization without emergent surgery.

**Results:** Eleven cases of IPPA were included in two tertiary heart centre. Electrophysiological procedures were performed for ventricular tachycardia (n =3), atrial fibrillation (n = 3), left accessory pathway (n = 1), and premature ventricular contraction (n =4) with transseptal (n = 10), retro aortic (n =3). Pericardial drainage was performed by percutaneous pericardiocentesis for all 11 patients. Surgical haemostasis was not required for our cohort. The mean volume of drained pericardial fluid was 486 (200-1200) mL Mean IPPA dosage was 209 (100-800).Mean systemic protamine dosage was 86 (50-100)mg. One patient lost due to CT.

**Conclusion:** IPPA is a feasible, safe, and useful technique for salvage therapy in ACT in interventional electrophysiology.

**Keywords:** cardiac tamponade, pericardial effusion, protamine

**Table1:** Details of Cardiac Tamponade in the study population

| Case | AGE | SEX | Type of Ablation | Anticoagulant/ Antiplatelet | Catheter | IV Protamine Dosage | Drained Pericardial Fluid | Transfusion | EF | Time To Removal of Pericardial Drain |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 49 | M | PAF | Rivaroxaban | CFSC | 100 | 200 | NO | 60 | 2 |
| 2 | 71 | F | VES | ASA | IRRIGATED | 100 | 450 | NO | 60 | 2 |
| 3 | 73 | F | PAF | Rivaroxaban | CFSC | 100 | 350 | NO | 60 | 2 |
| 4 | 70 | M | VT | Rivaroxaban+ASA+Clopidogrel | CFSC | 600 | 700 | NO | 50 | 2 |
| 5 | 40 | F | WPW | No | NON-IRRIGATED | 100 | 400 | NO | 60 | 1 |
| 6 | 62 | F | PAF | Edoxaban | CFSC | 100 | 600 | YES | 25 | 1 |
| 7 | 81 | M | VES | ASA | IRROGATED | 100 | 450 | NO | 30 | 1 |
| 8 | 63 | M | VT | Edoxaban | CFSC | 800 | 1200 | YES | 25 | EXITUS |
| 9 | 55 | F | VT | ASA | CFSC | 100 | 250 | NO | 30 | 2 |
| 10 | 62 | M | VES | ASA | CFSC | 100 | 350 | NO | 25 | 2 |
| 11 | 71 | M | VT | ASA | CFSC | 100 | 400 | NO | 40 | 4 |

CFSC:Contact Force-Sensing Catheters, PAF: Paroxysmal atrial fibrillation, PVC: Premature ventricular contraction, WPW: Wolf Parkinson White syndrome, M: Male, F: Female, ASA: Acetylsalicylic acid, EF: Ejection fraction, IV: Intravenous,

**Figure 1**

| | No | Yes | % |
|---|---|---|---|
| Cardiothoracic surgery | 11 | 0 | 100/0 |
| Allogenic Blood transfusion | 9 | 2 | 81,8/18,1 |
| Mortality | 10 | 1 | 9,1 |

*Cardiac Tamponade Outcomes*

**[OP-53]** IMPACT OF HAT2CH2 SCORE ON THE SEVERITY OF ACUTE PULMONARY EMBOLISM

Faruk Aydınyılmaz, Sidar Şiyar Aydın, Murat Özmen

*Department of Cardiology, Erzurum City Hospital*

**Objective:** Acute pulmonary embolism (APE) is a common clinical disease associated with high mortality rates, especially in patients with hemodynamic instability. It has been shown that cardiovascular risk factors such as hypertension (HT), age, and chronic obstructive pulmonary disease (COPD) are associated with an increased risk of VTE and consequent PTE. The HAT2CH2 score, which includes HT <1 point>, age >75 years <1 point>, stroke or transient ischemic attack <2 points>, COPD <1 point>, and heart failure <2 points>, was developed to identify patients likely to progress to sustained forms of atrial fibrillation. The aim of this study is to determine whether this scoring system, created for the risk of atrial fibrillation development, can predict prognosis in patients with pulmonary embolism since it includes common risk factors and diseases.

**Method:** 144 patients diagnosed with acute pulmonary embolism in the emergency department were included in the study. HAT2CH2 scores were calculated during the hospitalization of the patients. In-hospital and 6-month mortality follow-ups were performed. Patients with and without mortality were compared according to demographic, clinical and laboratory characteristics.

**Results:** Mortality was observed in 24 patients at 6-month follow-up. The HAT2CH2 score was significantly higher in the mortality group (2.46+1.14 vs 1.48+1.25;p=0.001). In the multivariate Cox regression analysis, HAT2CH2 score was found to be an independent predictor of mortality. (OR:1.586 %95CI: 1.212-2.057; P =0.001) A significance correlation was also found between the HAT2CH2 score and the CHADSVASC score in the study population. (Pearson correlatin co-efficient: 0.743; p <0.001)

**Conclusion:** According to the results of the study, high HAT2CH2 score was determined as a poor prognosis criteria in acute pulmonary embolism and was an independent risk factor. Studies suggest that VTEs of unknown origin and cardiovascular disorders may share common risk factors. Platelet activation triggered by atherosclerosis and coagulation cascade causing fibrin cycle form the basis of the pathogenesis. There may be an increased risk of PTE as a result of inflammation and increased comorbidities in COPD patients, increased risk of deep vein thrombosis due to decreased mobility in stroke patients, and impaired hemostasis, platelet and endothelial dysfunction due to decreased cardiac output in heart failure patients. According to the study results, the HAT2CH2 score was also highly correlated with the CHADS2VASC score, which was previously shown with an increased mortality risk. (Although it contains common parameters, there are different diseases such as DM and the scoring system is different (i.e. age)).

**Keywords:** HAT2CH2 score, acute pulmonary embolism, mortality

**Cumulative survival analysis of HAT2CH2 score according to the Cox regression analysis**
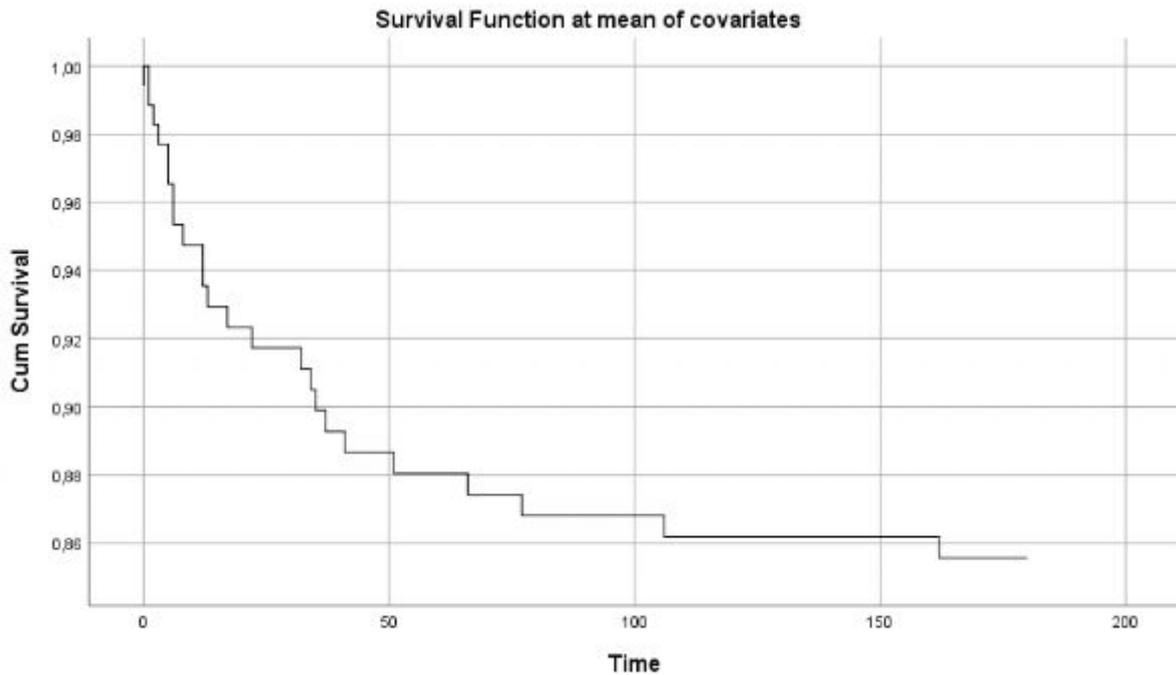
**[OP-54]** **MEDIATION: AN EFFICIENT WAY TO RESOLVE MEDICAL MALPRACTICE DISPUTES**

Deniz Ergene

*Izmir Bar Association, Izmir*

**Background:** Mediation is a process where disputing parties come together to resolve their disputes through negotiation and where an impartial third party -i.e. a mediator- facilitates the negotiations. Mediators -as expert negotiation facilitators- enhance communication between disputing parties, help them evaluate their interests and assist them in negotiating a mutually acceptable agreement. Resorting to mediation is in principle voluntary, yet in some jurisdictions -such as in Türkiye- it is made compulsory for some types of medical malpractice disputes. A significant portion of medical malpractice disputes are related to miscommunication, rather than medical negligence. Mediation can effectively unblock communication between physicians and patients, and help them resolve their disputes without having to go to court. Amicable resolution of medical malpractice disputes saves time, money and traumatic emotions for both physicians and patients. Moreover, confidentiality feature of mediation keeps disputes out of mass media, thereby protecting the reputation of physicians.

**Purpose:** Most physicians are reluctant about participating to mediation despite all the benefits it provides for them. The purpose of this article is to put forward a mediation strategy proposal for physicians to follow, so that they can reap the most benefit from mediation.

**Method:** When putting the strategy proposal together we made use of studies and researches conducted in US and EU law, where medical malpractice mediation has a long history.

**Results:** Physician's first strategy should be to be present in mediation. Courtrooms may be uncharted territory for physicians but mediation does not have to be. It is not an adjudication process, but mere negotiation. Hence it is best conducted personally, as opposed to be represented by lawyers. The second strategy should be to take mediation as the last opportunity to directly communicate with patients before disputes go to court. Communication not only means that physicians express that they did their best, but it also implies that they hear about the sufferings of their patients. Communication is particularly valuable in medical malpractice disputes, for in such disputes non-monetary demands -e.g. understanding and compassion- have a considerable weight. Therefore, the third strategy of the physicians should be to say they are sorry without admitting guilt. Medical complications are sometimes unavoidable. The fact that physicians are not responsible for complications does not prevent them from expressing compassion for the sufferings of their patients. In mediation physicians can freely express their compassion for their patients, without the fear of admitting legal liability. Because things said or done during mediation cannot be admitted as evidence at court.

**Conclusion:** Mediation does not solve every medical malpractice dispute but it may be an effective dispute resolution mechanism, if physicians employ the right strategy.

**Keywords:** medical malpractice, legal dispute, mediation, negotiation, amicable resolution

**[OP-55]    PATIENT EXPERIENCING HEMOPTYSIS DURING PREGNANCY**

Caglar Emre Cagliyan

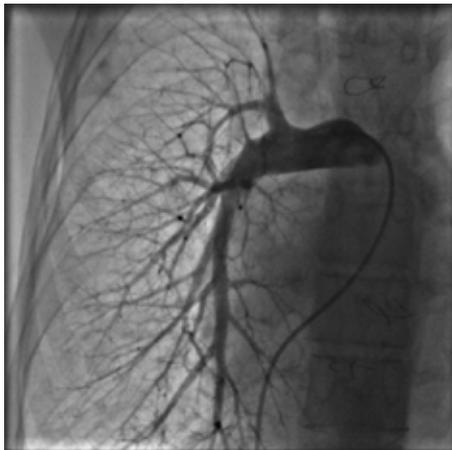*çukurova university faculty of medicine cardiology department*

A 28 year old patient, who was pregnant (primigravida, 26 weeks) had admitted to our emergency department with complaint of hemoptysis. She had no sign of dyspnea, she told about breathlessness with exertion in the last 15 days. She had history of undergoing cardiac operation (3 times at ages 3, 5 and 8) due to heart defect closure. She had immediately undergone pulmonary scintigraphy, which demonstrated severe perfusion defect in the right lung. She was hospitalized with a diagnosis of "pulmonary emboli and high risk pregnancy". Anti-coagulation treatment with low molecular weight heparin was initiated in the intensive care unit. After 5 days of hospitalization, patient was discharged. During the hospitalization, patient was stable and no signs of breathing disorder was observed. Patient has gave birth to a healthy child 3 months later. She continued to go to routine follow-up visits to our pulmonology clinic. Two years after delivery, she had complaints of recurring hemoptysis and dyspnea with exertion. Pulmonary angiography performed with computerized tomography showed marked reduction of right pulmonary arterial vasculature. Combined with the patients' past history of pulmonary emboli, she was consulted to our clinic with a diagnosis of "chronic thromboembolic pulmonary hypertension (CTEPH)". In the transthoracic echocardiography, there was moderate dilation of right heart chambers with a systolic pulmonary artery pressure of 55 mmHg. When we have questioned her previous medical history, we have learned that she had undergone 3 cardiac operations due to ventricular septal defect (VSD): Pulmonary banding at the age of 3, VSD closure and de-banding at 5 and tricuspid valve repair at the age of 8. We decided to perform cardiac catheterization and pulmonary angiography to the patient.

In the pulmonary angiography, there was a stenosis in the ostium of right pulmonary artery (RPA) and flow of RPA was significantly reduced (Figure 1), whereas flow of left pulmonary artery (LPA) was significantly increased. When we evaluate the intrapulmonary pressures, selective RPA pressure (29/6 mmHg) was significantly lower than the LPA pressure (41/10 mmHg). There was also a 20 mmHg gradient between right ventricle and main pulmonary artery and pulmonary vascular resistance was calculated as 2,52 Wood Units.

The inequality of flow between two pulmonary arteries seems to be due to a late complication of pulmonary banding procedure. In the first hemoptysis episode during pregnancy with signs of reduced right pulmonary artery perfusion in V/Q scan have directed the physicians to a straightforward "pulmonary emboli" diagnosis. However, when we retrospectively reevaluate the clinical presentation, hemoptysis without signs of dyspnea is not very likely in patients with pulmonary emboli. In spite of developments in technology and imaging systems, careful evaluation of patient history is the most important step in patient evaluation.

**Keywords:** Pulmonary emboli, ventricular septal defect, pulmonary banding

<div align="center">

**Figure 1**



*Right pulmonary artery flow*

**Figure 2**



*Left pulmonary artery flow*

</div>

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**ORAL PRESENTATIONS**

[OP-56]   PROGNOSTIC NUTRITIONAL INDEX CAN PREDICT NO-REFLOW PHENOMENON AFTER SAPHENOUS VEIN GRAFT INTERVENTION IN PATIENTS WITH ACUTE CORONARY SYNDROME

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**OBJECTİVE:** The No-Reflow Phenomenon (NRP) is a common complication of saphenous vein graft (SVG) interventions. Because of its association with high mortality and morbidity, it would be useful to show independent predictors of NRP before SVG intervention to prevent the development of NRP. A new inflammatory marker, the prognostic nutritional index (PNI), has been studied in many cardiovascular diseases. We sought to investigate the effect of PNI on the development of NRP in patients who had a previous coronary artery by-pass graft (CABG), presented with acute coronary syndrome (ACS) and underwent SVG intervention.

**Method:** This cross-sectional study was performed in our hospital between September 2019 and January 2021. The study included 120 patients who applied to our center with ACS, had a previous history of CABG, and were treated with saphenous grafts intervention. The relationship between PNI and NRP development evaluated after angiography was determined by univariate and multivariate regression analysis.

**Results:** In our study, the sample size was divided into patients with and without NRP. In terms of demographic characteristics, the mean age of the group that did not develop NRP was higher (p:0,018). The rate of ACE inhibitor use was found to be significantly higher in the NRP group (p:0,035). Total ischemia time (0,019) and angiographic thrombus grade (0,001) were found to be significantly higher in the NRP group. When the relationship between NRP development and PNI levels was investigated, it was found that the number of patients who developed NRP increased significantly as the PNI level decreased (T1: 78,6%; T2: 47,2%; T3: 21,4%; p<0,001) (Table-1). The results of the logistic regression analysis between the groups that developed and did not develop no-reflow are given in Figure-1. Thrombus grade, ACE inhibitor use, PNI levels, being over 65 years of age, and total ischemia time were associated with NRP development. In multivariate logistic analysis with these parameters, being over 65 years of age (OR= 0,272, 95% CI: 0,101-0,732) and high PNI levels (OR= 0,046, 95% CI: 0,012-0,179) were found to be negative independent predictors for NRP. In addition, excess thrombus grade was found to be a positive independent predictor for NRP (OR=4297, 95% CI: 1.,485-12,435). Accordingly, high PNI values predict that the probability of developing NRP is less. In addition, in the ROC analysis, the predictive power of PNI for the procedure without NRP was evaluated as 'moderate' (AUC: 0,747, CI: 0,653-0,841; p<0,001). According to this analysis, the sensitivity of PNI values of 50 and above in predicting the procedure without NRP was determined as 73.9% and the specificity as 68%.

**Conclusion:** This study showed that PNI, calculated according to serum albumin level and lymphocyte count, is an independent predictor of NRP development in patients presenting with ACS and undergoing SVG intervention.

**Keywords:** No-reflow, prognostic nutritional index, saphenous vein graft, intervention

**Figure-1**
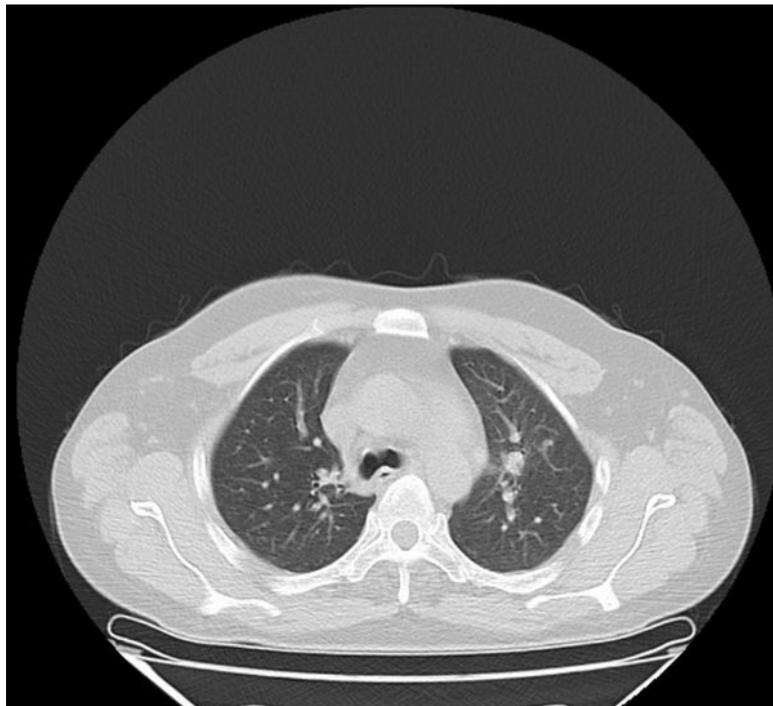


_Comparison of demographic data and angiographic data according to the development of the no-reflow phenomenon. Data are presented as median (interquartile range) or number (percentage) of patients. BMI, body mass index; DM, diabetes mellitus; eGFR, estimated glomerular filtration rate; HL, hyperlipidemia; HT, hypertension; LDL, low-density lipoprotein; LVEF, left ventricular ejection fraction; PCI, percutaneus coronary intervention; PNI, prognostic nutritional index; SD, standard deviation_

**Figure-2**



| Variable | OR in univariate analysis | P value | OR in multivariate analysis | P value |
|---|---|---|---|---|
| Age≥ 65 | 0,335 (0,157- 0,716) | 0,005 | 0,272 (0,101- 0,732) | 0,010 |
| ACE iah | 2,356 (1,054-5,267) | 0,037 | 0,490 (0,178-1,348) | 0,167 |
| Total ischemia time,h | 1.07 (1.01-1.13) | 0,015 | 1.07 (0.99-1.16) | 0.085 |
| Thrombus grade≥ 4 | 3,800 (1,726-8,368) | 0,001 | 4,297 (1,485- 12,435) | 0,007 |
| PNI tertiles | | | | |
| T1 (PNI <47.12) | - | - | - | - |
| T2 (47.12 ≤ PNI ≤51.50) | 0,244 (0,080-0,744) | 0,013 | 0,178 (0,047- 0,677) | 0,011 |
| T3 (PNI>51.50) | 0,074 (0,025-0,225) | <0,001 | 0,046 (0,012-0,179) | <0,001 |

**Figure-1:** Statistical model of our study group. **A)** ROC curve analysis evaluating the power of the prognostic nutritional index to predict the procedure without no-reflow phenomenon **B)** Univariate and multivariate logistic regression analysis to identify independent predictors of the no-reflow phenomenon. Abbreviations: OR, odds ratio; PNI, prognostic nutritional index

Statistical model of our study group. A) ROC curve analysis evaluating the power of the prognostic nutritional index to predict the procedure without no-reflow phenomenon B) Univariate and multivariate logistic regression analysis to identify independent predictors of the no-reflow phenomenon. Abbreviations: OR, odds ratio; PNI, prognostic nutritional index

**[OP-57]    REVERSIBLE PULMONARY HYPERTENSION ASSOCIATED WITH MYASTHENIA GRAVIS**

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**Introduction:** Myasthenia Gravis(MG) is a chronic autoimmune disease that causes weakness in skeletal muscles by antibodies.Respiratory failure in this disease is seen as a life-threatening complication. However, its relationship with pulmonary hypertension is unclear.

**Case Report:** A 35-year-old male patient with no comorbidities presented to us with exertional dyspnea and fatigue. From his history, it was learned that he had respiratory arrest with the diagnosis of COVID-19 10 months ago, followed by a 2-week intubation period, and then followed up with inhaler treatments. Electrocardiogram was in sinus rhythm. Patient had no cardiac therapy. Chest X-ray of the patient was evaluated as normal. NT-proBNP value in blood parameters was found as 221 pg/mL.

Transthoracic echocardiography(TTE) showed normal left ventricular functions, enlarged right ventricular chamber sizes,moderate to severe tricuspid regurgitation, borderline right ventricular functions (TAPSE:18 mm,RV Sm:12 cm/s). There was no suspicion of a left-to-right shunt on color flow Doppler. Estimated systolic pulmonary artery pressure (63 mmHg) was found to be high. Transesophageal Echocardiography confirmed that there was no left-to-right shunt.

HRCT and VPS was normal. Pulmonary function tests of the patient revealed FEV1/FVC: 81% and normal DLCO levels. The patient's 6-minute walking test was measured as 300 meters. O2 saturation was measured as 92% before the walking test and 86% after the test. Pulmonary artery pressures were measured as an average of 47/26/33 mmHg in repeated measurements. Pulmonary vascular resistance (PVR) 3.7 Wood Unit, Right Atrial Pressure 5 mmHg, Cardiac Output 5.9 Lt/min in the right heart catheterization of the patient. Vasoreactivity test was negative. Left ventricular end diastolic pressure was 11 mmHg. The patient in the intermediate risk group was treated with macitentan 10 mg 1*1, which will be evaluated as Primary Pulmonary Hypertension. The diagnosis of MG was made by consulting with Neurology, because NYHA FC 2-3 continued in the follow-ups of the patient, drooping eyelids, development of chronic fatigue, and fatigue during the waking hours. Macitentan treatment was interrupted and IV Immunoglobulin and Pridostigmine were started. In the follow-up one month later, her complaints relieved and she was observed as NYHA FC 1. Estimated sPAP value in the patient's control TTE was evaluated as 30 mmHg.

**Conclusion:** In our case, we presented our patient, who started PAH-specific treatment with the diagnosis of pulmonary hypertension, but was diagnosed with MG after the symptoms did not resolve and there were additional findings. In our patient, PAP values regressed after IV immunoglobulin and Pridostigmine treatment, giving us the opportunity to see a rare case in the literature for reversible pulmonary hypertension, also suggesting that there may be an increase in MG findings due to Macitentan.

**Keywords:** Myasthenia Gravis, Neuromuscular Disease, Pulmonary Hypertension
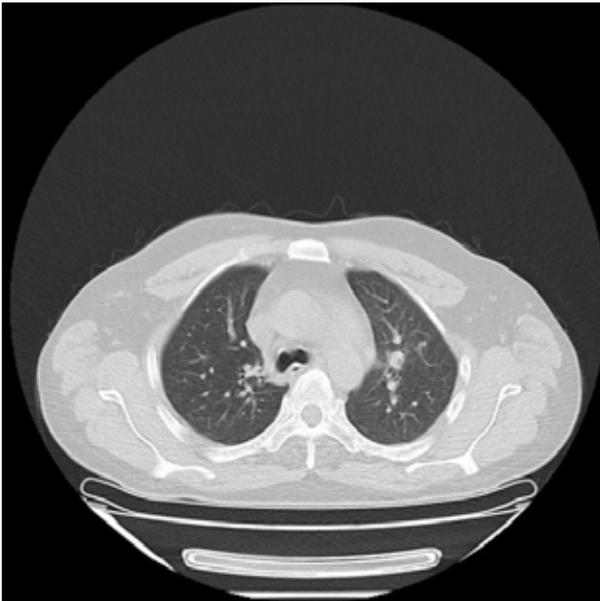
| CT | VPS |
|----|-----|
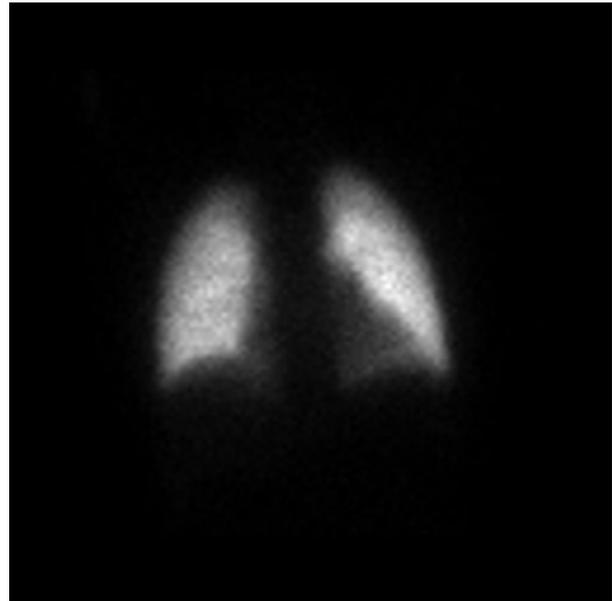
**[OP-58]**   SUBARACHNOID HEMORRHAGE COMPLICATED BY NEUROGENIC PULMONARY EDEMA AND TAKOTSUBO CARDIOMYOPATHY

Ayse Parali Ak, Gonul Aciksari, Feyza Aksu, Merve Kapcik, Mustafa Calıskan

1Istanbul Medeniyet University, Goztepe Prof. Dr. Suleyman Yalcin City Hospital, Department of Cardiology, Istanbul, TURKEY

**Backgound:** Takotsubo cardiomyopathy wich is also called stress induced cardiomyopathy, is a reversible left-ventricular (LV) dysfunction characterized by apical ballooning with no significant coronary artery stenosis. The precise pathophysiology of TCM is still not fully understood. Stress-induced catecholamine release has been proposed to be the most likely cause of TCM. Takotsubo cardiomyopathy is a well-known complication of subarachnoid hemorrhage(SAH). SAH may have be a triggering factor for takotsubo cardiomyopathy occurrence in such patients through an increase in the catecholamine surge. ST-segment elevation is seen with this syndrome, and it may look like acute ST-elevation myocardial infarction.

The following report shows a case, in which subarachnoid haemorrhage mimics an acute ST elevation myocardial infarction.

**Case presentation:** A 49 -year-old female was brought to the emergency department with loss of consciousness (grade 6 on the Glasgow Coma Scale) and agonal respiration. Tracheal intubation was performed. Her medical history is unremarkabl without hyperlipidemia. The initial electrocardiography (ECG) showed an elevation of ST segment in leads V1 through V4 with inverted T waves in the leads D1 and AVL. Point-of-care ultrasonography showed left apical ballooning and hypokinesia. On based of these findings with ST-elevation myocardial infarction being the most likely diagnosis.The patient was transferred to the coroner anjiography unite with initiated with antithrombotic treatment. On coronary angiography no hemodynamically significant lesions of the coronary arteries was detected. Computed tomographic (CT) angiography of the head revealed a massive subarachnoid hemorrhage.Chest computed tomography showed obvious bilateral consolidation. Upon re-evaluation at our center, we suspected that the patient had been misdiagnosed and that the most likely diagnosis was subarachnoid hemorrhage complicated by neurogenic pulmonary edema and takotsubo cardiomyopathy. The patient was transferred to the neurology intensive care unit for further evulation and treatment.

**conclusion:** Takotsubo cardiomyopathy is a commonly observed complication among patients with subarachnoid hemorrhage. This case illustrates that takotsubo cardiomyopathy should always be on the differential diagnosis in patients presenting with what appears to be acute ST-segment elevation miyocard infarction. Clinicians should be aware of neurogenic stress cardiomyopathy because early diagnosis and treatment are the main goal for accure definitve dioagnosis and tratment.
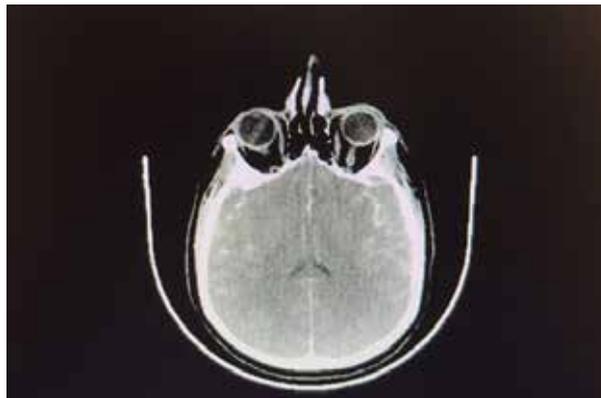
**Keywords:** Subarachnoid hemorrhage, takotsubo cardiomyopathy, ECG abnormalities, Neurogenic PulmonaryEdema

**Figure 1.**
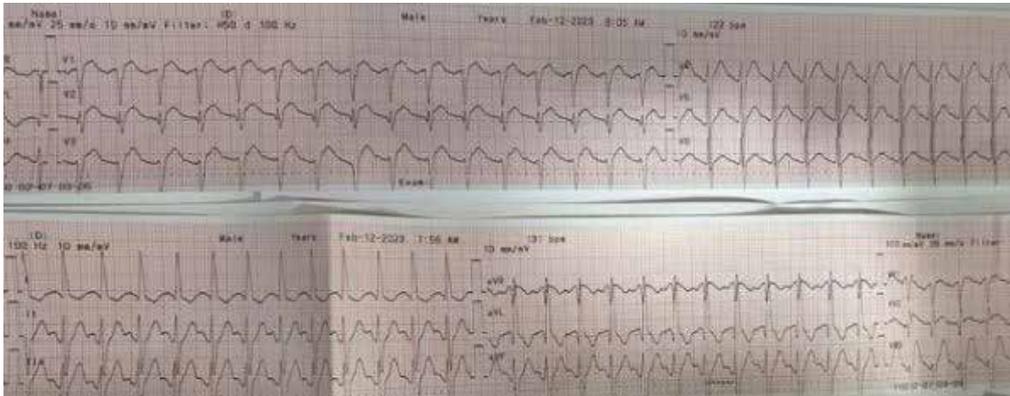


*ECG showing ST elevations in the leads V1 through V3, I and aVL*

**Figure 2.**



*A brain computed tomography (CT) scan revealed extended subarachnoid hemorrhage*

**[OP-59]**   THE MODIFIED GLASGOW PROGNOSTIC SCORE IS ASSOCIATED WITH SURVIVAL MORTALITY IN PATIENTS UNDERGOING MITRAL VALVE SURGERY DUE TO RHEUMATIC SEVERE MITRAL STENOSIS

Mert Evlice

*Department of Cardiology, Health Sciences Hamidiye University -Adana City Training and Research Hospital, Adana/ Turkey*

**Backround:** The modified Glasgow prognostic score (mGPS) is a scoring system obtained by using inflammatory (C-reactive protein) and nutritional (albumin) parameters together, and it has been shown to have prognostic value in various cardiac pathologies in previous studies. In this study, we aimed to investigate the usability of the Glasgow Prognostic Score (mGPS) in predicting 1-year mortality in patients who underwent mitral valve surgery (MVS) due to rheumatic severe mitral stenosis (MS).

**Methods:** Patients who underwent MVS with the diagnosis of severe, symptomatic rheumatic MS in our hospital between January 2021 and May 2022 were included in this single-center study retrospectively. Demographic, clinical, and laboratory data were obtained by reviewing patient files. Blood samples were collected, and the laboratory measurements of serum values of CRP and albumin were performed before the operation. All patients were categorized into three groups based on the GPS score as follows: GPS 2, elevated CRP (> 10 mg/ L) and hypoalbuminemia (< 3.5 g/L); GPS 1, elevated CPR or hypoalbuminemia; GPS 0, neither elevated CPR nor hypoalbuminemia.

Thirty patients who underwent simultaneous surgery for severe mitral insufficiency, severe aortic regurgitation, or severe aortic stenosis, and 18 patients who underwent concurrent procedures in addition to MVS, such as coronary artery bypass grafting, ascending aortic surgery, were excluded from the study. The remaining 232 patients were divided into two groups as survivors and non-survivors according to 1-year mortality parameters. High mGPS calculated with pre-procedural data was determined as a predictor of 1-year mortality.

**Results:** Of the 232 patients, only 28 (12.1%) reached their primary endpoint at one-year follow-up. Compared to the patients who did not reach the endpoints, these 28 patients were not different in terms of age, preoperative mitral valve area, left atrial diameter, and ejection fraction (P>0.05 for all). mGPS, N-terminal pro-brain natriuretic peptide, estimated systolic pulmonary artery pressure, and mean transmitral valve gradient were parameters that showed statistically significant differences between the groups. Multivariate analysis showed that GPS was an independent predictor of primary endpoints (p=0.001, odds ratio 3.54, 95% confidence interval 1.93 - 6.49) (Figure 1).

**Conclusions:** mGPS is independently associated with 1-year mortality in patients in patients undergoing mitral valve surgery due to rheumatic severe mitral valve stenosis. It can be used as an indicator of mortality in patients undergoing mitral valve surgery due to rheumatic severe mitral valve stenosis. mGPS can offer a simple, evidence-based, objective and discriminatory method for assessing inflammation, nutritional and liver congestion status in patients with severe mitral valve stenosis. It can guide clinicians in taking preventive measures to reduce mortality before mitral valve surgery.

**Keywords:** mitral valve surgery, modified Glasgow prognostic score, rheumatic mitral stenosis

**Figure 1**
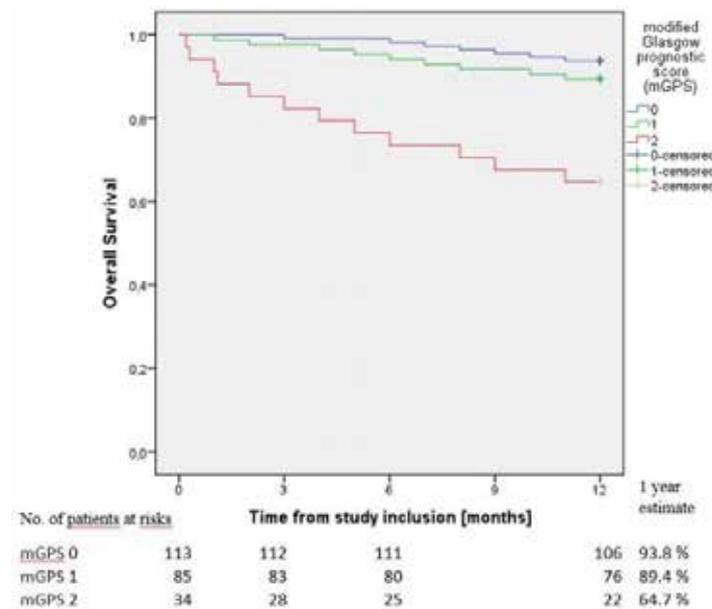


*Kaplan–Meier analysis of overall survival in patients undergoing mitral valve surgery due to rheumatic severe mitral valve stenosis according to the modified Glasgow prognostic score (mGPS). Groups were compared by the log-rank test.*

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ELEXUS HOTEL GİRNE, K.K.T.C.

**[OP-61]** RELATIONSHIP BETWEEN FUNCTIONAL CAPACITY AND SERUM ELABELA LEVELS IN HEART FAILURE PATIENTS WITH REDUCED EJECTION FRACTION

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**Objective:** Elabela/Toddler (ELA-32) is a newly discovered endogenous ligand of the apelin receptor (APJ). ELA levels are known to increase in heart failure (HF) patients. New York Heart Association (NYHA) classification predicts prognosis for heart failure (HF) patients. However, the relationship between increased ELA levels and prognosis in HF patients is not known. We aimed to investigate whether its plasma levels are related to functional class in patients with heart failure with reduced ejection fraction (HFrEF).

**Methods:** This cross-sectional study included 52 patients with HFrEF. 31% (16/52) of the patients were female gender, mean age was $68\pm12$ and mean ejection fraction was %$25\pm5$

We collected a blood sample at hospital admission to measure ELA-32 levels. Patients were divided into 2 groups according to NYHA functional classification: I-II, a better functional classification, or III-IV, a poorer functional classification.

**Results:** Baseline characteristics and HF medications were similar between the groups, as presented in Table 1. In patients with poorer functional classes, ELA-32 levels were higher than the patients with better functional classes (ELA-32; $13.02\pm3.18$ ng/ml vs $7.74\pm1.59$ng/ml, p<0.001). A significant increase in ELA-32 levels was detected in advanced NYHA classes (NYHA Class; n(%); mean ELA-32 levels ng/ml) (NYHA I; n= 9 (17%); $6.1\pm0.7$, NYHA II; n= 18 (35%); $8.5\pm1.2$, NYHA III; n=15 (29%); $11.1\pm1.7$, NYHA IV; n=10 (19%); $15.9\pm2.6$) (p<0.001). In the receiver operating characteristics curve analysis, we found that a serum ELA-32 level of 9.25 ng/mL had a 92% sensitivity and 82% specificity for prediction of the poorer functional capacity. Area under curve (AUC) was 0.952 with 95% confidence interval 0.952 to 0.998, p< 0.001. However, ELA-32 levels was positively correlated with NT-pro BNP levels (r;0.791, p<0.001) and NYHA functional class (r;0.880, p<0.001).

**Conclusion:** Incresad ELA-32 levels were associated with poorer functional classes in patients with HFrEF.

**Keywords:** Heart failure, Elabela, NYHA Class

ROC curve for poorer NYHA classes
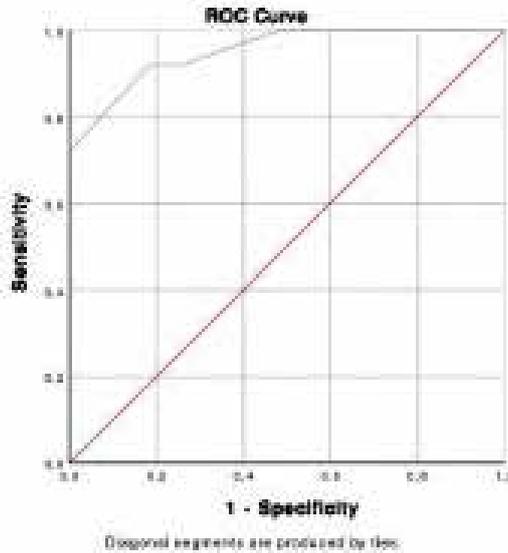
**Baseline characteristics and HF medications according to NYHA classes**

| Baseline characteristics (n) | Better NYHA Classes (NYHA I-II) N=27 (52%) | Poorer NYHA Classes (NYHA III-IV) N=25 (48%) | P |
|---|---|---|---|
| Age | 66±13 | 68±12 | 0.460 |
| Female Gender | 7 (26%) | 9 (36%) | 0.627 |
| Presence of Hypertension n (%) | 7 (26%) | 5 (20%) | 0.859 |
| Presence of DM n (%) | 2 (7%) | 2 (12%) | 0.662 |
| Presence of CAD n (%) | 5 (19%) | 6 (24%) | 0.886 |
| Presence of COPD n (%) | 3 (11%) | 7 (28%) | 0.167 |
| Smoking n (%) | 10 (37%) | 6 (24%) | 0.473 |
| Systolic blood pressure | 111±12 | 114±16 | 0.469 |
| Diastolic blood pressure | 71±7 | 70±7 | 0.339 |
| Heart Rate | 82±11 | 82±10 | 0.958 |
| Elabela | 7.7±1.6 | 13±3.1 | <0.001 |
| NtProBNP | 3098 (107-5676) | 6743 (767-35000) | <0.001 |
| Glucose | 110±17 | 103±19 | 0.207 |
| Creatinin | 0.7±0.2 | 0.8±0.2 | 0.274 |
| Sodium | 137±4 | 136±3 | 0.139 |
| Potassium | 3.9±0.6 | 3.9±0.6 | 0.721 |
| AST | 21 (13-68) | 21 (10-153) | 0.934 |
| Albumin | 4.3±0.3 | 4.1±0.4 | 0.051 |
| Hemoglobin | 12±1.8 | 11.2±2.2 | 0.197 |
| CRP | 1.8 (0.5-19.3) | 1.7 (0.06-7) | 0.734 |
| Left ventricle ejection fraction | 26±5 | 24±5 | 0.189 |
| Left atrium diameter | 40±4 | 40±5 | 0.889 |
| HF Mediactions n(%) | Better NYHA Classes (NYHA I-II) N=27 (52%) | Poorer NYHA Classes (NYHA III-IV) N=25 (48%) | p |
| ACE/ARB | 11 (41%) | 13 (52%) | 0.592 |
| ARNI | 4 (15%) | 4 (16%) | 1.000 |
| Beta blocker | 13 (48%) | 13 (52%) | 1.000 |
| Spirinolactone | 2 (4%) | 2 (4%) | 1.000 |
| Digoxin | 2 (7%) | 4 (16%) | 0.411 |
| Ivabradin | 1 (4%) | 1 (4%) | 1.000 |

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**[OP-63]  A NEW MARKER IN DETERMINING THE PROGNOSIS IN CORONARY ARTERY PATIENTS UNDERGOING PCI: THE SCORE COMBINING PLASMA FIBRINOGEN AND SYSTEMIC IMMUNE-INFLAMMATION INDEX**

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**Background:** We aimed to develop a novel prognostic score (F-SII score) using plasma fibrinogen and systemic immune-inflammation index (SII) to predict the clinical outcomes in patients with coronary artery disease (CAD) after percutaneous coronary intervention (PCI).

**Methods:** Patients diagnosed with CAD and undergoing PCI between January 2018 and 2020 were included in the study. The F-SII score was 2 for patients with fibrinogen>=4.12 g/L and SII index>=423.1, whereas that for patients with one or neither was 1 or 0, respectively. The primary endpoint was defined as mortality (including all-cause mortality (ACM) and cardiac mortality (CM)), and the secondary endpoint was major adverse cardiovascular events (MACE) and major adverse cardiovascular and cerebrovascular events (MACCE).

**Results:** Multivariate Cox regression analyses showed that the hazard ratios (HRs) for ACM increased 1.756 times, 3.764 times in F-SII=1 and F-SII=2 groups compared with that in F-SII=0 group, respectively. For CM, the HRs increased 1.721 times, 2.650 times, respectively. And for MACCE, the HRs increased 1.423 times in F-SII=2 group compared with that in F-SII=0 group.

**Conclusion:** This study indicates that baseline F-SII may serve as a useful predictive factor for adverse long-term outcomes in CAD patients who underwent PCI.

**Keywords:** systemic immune-inflammation index, fibrinogen, coronary artery disease, percutaneous coronary intervention

### Univariate and multivariable Cox regression analysis for outcomes

| Outcomes | Non-adjusted | | Adjusted | |
|---|---|---|---|---|
| | HR(95%CI) | p | HR(95%CI) | p |
| **ACM** | | | | |
| Fibrinogen level(≥4.12 vs.< 4.12 g/L] | 2.924 (1.922-4.447] | <0.001 | 2.205(1.368-3.562) | 0.001 |
| SII (≥523.1 vs.< 523.1] | 2.221(1.541-3.100 ) | <0.001 | 2.065(1.410-3.022) | <0.001 |
| F-SII (1 vs.0] | 1.661(1.122-2.459] | 0.021 | 1.756(1.168-2.642) | 0.017 |
| F-SII (2 vs.0] | 4.849(3.026-8.095] | <0.001 | 3.764(2.148-6.584) | <0.001 |
| **CM** | | | | |
| Fibrinogen level(≥4.12 vs.< 4.12 g/L] | 2.571(1.487-4.444] | 0.001 | 1.591 (0.815-3.104] | 0.174 |
| SII (≥523.1 vs.< 523.1] | 2.219(1.399-3.519] | 0.001 | 1.894 (1.169-3.068] | 0.009 |
| F-SII (1 vs.0] | 1.885(1.030-2.755] | 0.028 | 1.721 (1.031-2.875] | 0.018 |
| F-SII (2 vs.0] | 4.523(2.394-8.546] | <0.001 | 2.650 (1.227-5.723] | 0.013 |
| **MACE** | | | | |
| Fibrinogen level(≥4.12 vs.< 4.12 g/L] | 1.352(0.993-1.840] | 0.055 | 1.199 (0.847-1.697] | 0.305 |
| SII (≥523.1 vs.< 523.1] | 1.085(0.890-1.322] | 0.420 | 1.008 (0.998-1.019] | 0.120 |
| F-SII (1 vs.0] | 1.022(0.831-1.256] | 0.838 | 1.006 (0.809-1.252] | 0.954 |
| F-SII (2 vs.0] | 1.368(0.944-1.981] | 0.098 | 1.172 (0.771-1.781] | 0.458 |
| **MACCE** | | | | |
| Fibrinogen level(≥4.12 vs.< 4.12 g/L] | 1.423(1.090-1.857] | 0.019 | 1.328 (0.988-1.784] | 0.060 |
| SII (≥523.1 vs.< 523.1] | 1.217(1.023-1.448] | 0.016 | 1.142 (0.951-1.372] | 0.156 |
| F-SII (1 vs.0] | 1.168(0.974-1.401] | 0.094 | 1.129 (0.931-1.368] | 0.217 |
| F-SII (2 vs.0] | 1.592(1.159-2.187] | 0.008 | 1.423 (1.002-2.022] | 0.038 |

### [OP-64]   A NEW CORRECTED FORMULA FOR CORRECT ESTIMATION OF CENTRAL AORTIC PRESSURE FROM PERIPHERAL CUFF MEASUREMENTS

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[2]Mustafa Kemal University, Department of Cardiology

**Introduction:** Mean arterial pressure (MAP) has a critical importance on tissue perfusion. Calculation of the exact MAP is gained from intra-aortic pressure. The area under the curve of the pressure–time waveform of one entire cardiac cycle with the time-weighted integral is the correct way to calculate MAP. In clinical practice, the most used formula was suggested by Gauer which uses systolic (SBP), diastolic (DBP), and pulse (PP) pressures gathered via an iliac artery (MAP= DBP + 0.333 x PP). However, its results are not reliable as blood pressures are higher. Therefore, we derived a corrected formula for the calculation of MAP from cuff blood pressure recordings: $MAP = DBP_{cuff} + [0.33 + (0.43 - 0.0038 \times DBP_{cuff})] \times PP_{cuff}$.

**Material and methods:** 149 patients (70 males, 79 females) were included in this study. Intra-aortic and cuff blood pressure tracings were obtained simultaneously. 6 F diagnostic catheters (Pig-tail) were placed in the aortic root for calculation of the mean aortic pressures. MAP was computed by the area-under-the-pressure-time curve method. The PP coefficient of the standard formula is 0.333 for all calculations, PP coefficient deviation of the standard formula was calculated with the formula of PP coefficient - 0.333. These two formulas were compared according to R, R2, mean square residuals (MSR), and root mean square error (RMSE) using linear regression analysis and Akaike information criterion (AIC). We finally tested the accuracy of the four formulas using multivariate linear regression analysis.

**Results:** The measured intra-aortic mean pressure was 111.5 ± 13.0 mmHg. The calculated intra-aortic mean pressure by standard formula and the corrected formula were 105.8 ± 13.5 and 111.3 ± 12.1, respectively. The pulse pressure coefficient deviation of the standard formula was found to be most strongly correlated with diastolic blood pressure (R = -0,393, P < 0.001) compared with other variables such as systolic blood pressure (R = -0,285, P < 0.001) and age (R = -0,174, P < 0.035) according to bivariate correlation analysis. The R, R2, and AIC of the corrected formula were better than the standard formula ((0.905 vs 0.887), (0.818 vs 0.787), and (858.9 vs 1002.7), respectively). Measured MAP was independently predicted by only the corrected formula in the multivariate linear regression analysis (beta = 0.975, p < 0.001).

**Conclusion:** To the best of our knowledge, this is the first study for the calculation of the mean aortic pressure from cuff measurements and the corrected formula has better accuracy than the standard formula for the estimation of the MAP.

**Keywords:** aortic pressure, arterial pressure, mean arterial pressure

**Figure 1**
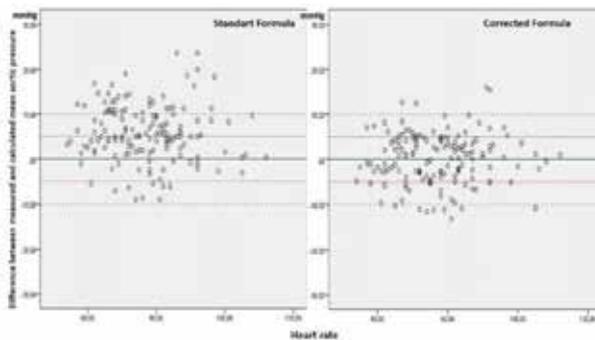


*Differences between measured and calculated mean aortic pressures according to heart rate for the standard formula and the corrected formula.*

**Figure 2**
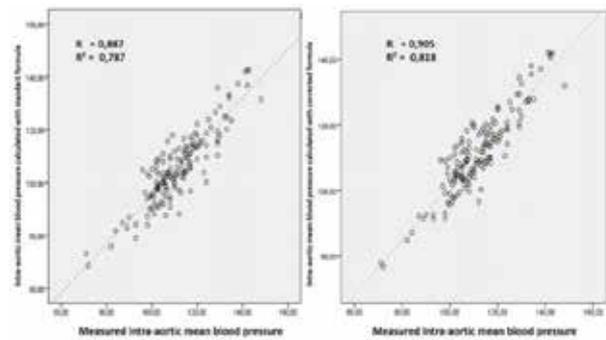


*Comparison of intra-aortic mean blood pressure of standard formula and corrected formula according to R and R2*

**Table 1**

| Accuracy parameter | Standart formula | Corrected Formula |
|---|---|---|
| R | 0.887 | 0,905 |
| R² | 0.787 | 0,818 |
| Mean square residuals (mmHg²) | 36,506 | 31,104 |
| Root mean square error (mmHg) | 6,042 | 5,577 |
| Akaike information criterion (AIC) | 1002,746 | 858,912 |

*Comparison of accuracy parameters of different formulas to predict mean arterial pressure*

# KARDİYOVASKÜLER AKADEMİ KONGRESİ

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## INTERNATIONAL ACADEMY OF YOUNG CARDIOLOGISTS

CUMHURİYETİMİZİN

2023 | 100 (1923-2023)

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ELEXUS HOTEL GİRNE, K.K.T.C.

**[OP-66]** IN ELDERLY PATIENTS UNDERGOING PERCUTANEOUS CORONARY INTERVENTION, THE RELATIONSHIP BETWEEN N-TERMINAL PRO-B-TYPE NATRIURETIC PEPTIDE AND PROGNOSIS

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**Objective:** N-terminal pro-B-type natriuretic peptide (NT-proBNP) is an important marker of myocardial cell necrosis, especially used to assess the severity and progression of heart failure. Many studies have found that NT-proBNP is associated with prognosis in coronary artery disease. The aim of our study is to determine the relationship between NT-proBNP and prognosis in patients aged 80 and over who underwent percutaneous coronary intervention (PCI).

**Methods:** Our study included 226 patients aged 80 years and older, with initial NT-proBNP levels, who underwent PCI between January 2019 and June 2021. Patients were divided into groups according to their NT-proBNP levels. The primary endpoint was 1-month and 1-year mortality. Patients were selected consecutively and analyzed retrospectively. Only stable coronary artery patients undergoing PCI were included in the study. Patients who presented with acute coronary syndrome and did not have NT-proBNP levels at presentation were excluded from the study.

**Results:** The median NT-proBNP was 1265 (401-2455) pg/ml. The 1-month mortality rates were significantly different between the groups (8.9%, 14.9%, 26.8%, p=0.032, respectively). The basic characteristics of the patients are given in Table-1. According to NT-proBNP levels, 1-month and 1-year mortality rates were found to be significantly lower in patients in the 1st quartile compared to the 4th quartile group(Figure-1). In the receiver-operating characteristic (ROC) analysis, the best cut-off value for predicting death at 1 month was 1425 pg/ml. (area under the curve (AUC):0.678, 95% CI(0.579-0.778), p=0.001, sensitivity: 70%, specificity: 64%) (Figure-2).

**Conclusion:** NT-proBNP levels measured at hospital admission were found to be an independent predictor of all-cause mortality in elderly patients aged 80 years and older who underwent PCI. In addition, NT-proBNP > 1425 pg/ml was associated with 1-month all-cause mortality.
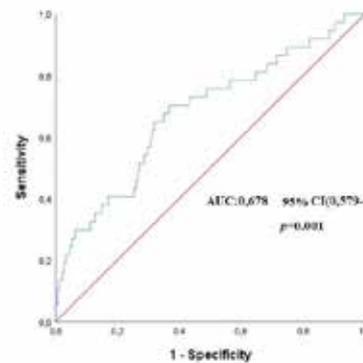
**Keywords:** N-terminal pro-B-type natriuretic peptide (NT-proBNP), Percutaneous coronary intervention (PCI), Coronary artery disease

### Figure-1
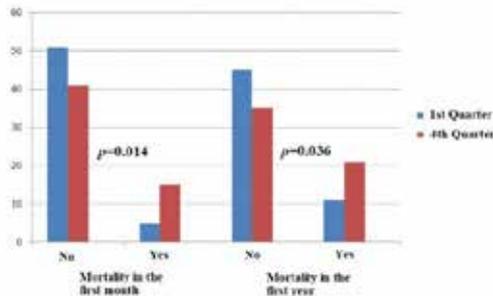


*Mortality comparison according to the first and last quarter values of NT-proBNP*

### Figure-2



*ROC analysis of NT-proBNP in predicting all-cause death in the first month*

### Table-1

| Parameters | 1st Quarter (<401 pg/ml) n:56 | 2nd and 3rd Quarter (401-2455 pg/ml) n:114 | 4th Quarter (>2455 pg/ml) n:56 | P value |
|---|---|---|---|---|
| Age, years | 85±3.7 | 84.5±3.3 | 84.5±3.8 | 0.680 |
| Female, n (%) | 28(50) | 70(61.4) | 30(53.6) | 0.321 |
| Glucose (mg/dl) | 147±37 | 156±44 | 153±40 | 0.424 |
| Urea(mg/dl) | 31.9±11.0 | 32.2±19.5 | 32.2±15.9 | 0.973 |
| Creatinin(mg/dl) | 0.97±0.35 | 0.94±0.35 | 0.98±0.36 | 0.205 |
| LDL cholesterol (mg/dl) | 136±36 | 126±29 | 131±33 | 0.169 |
| HDL cholesterol (mg/dl) | 36.1±8.3 | 34.3±6.1 | 34.6±7.8 | 0.298 |
| Trıglycerıde (mg/dl) | 164±44 | 176±54 | 167±45 | 0.294 |
| Hemoglobin (g/dL) | 12.9±1.8 | 12.7±1.8 | 13.2±2.0 | 0.395 |
| Diabetes, n (%) | 20(35.7) | 48(42.1) | 23(41.1) | 0.720 |
| Hypertension, n (%) | 27(48.2) | 52(45.6) | 29(51.8) | 0.749 |
| WBC (103/mm3) | 10.4±3.5 | 10.8±3.4 | 10.9±3.8 | 0.766 |
| Ejection fraction, % | 44.0±9.5 | 46.2±8.8 | 46.8±9.7 | 0.217 |
| C-reactive protein (mg/L) | 5.4±3.4 | 5.6±4.2 | 6.1±4.0 | 0.614 |
| Mortality in the first month, n (%) | 5(8.9) | 17(14.9) | 15(26.8) | 0.032 |
| Mortality in the first year, n (%) | 11(19.6) | 27(23.7) | 21(37.5) | 0.070 |

*Basic characteristics of patients according to NT-proBNP levels*

**[OP-67]**   INCREASED EPICARDIAL ADIPOSE TISSUE VOLUME MAY ADVERSELY AFFECT OUTCOMES IN PATIENTS UNDERGOING TRANSCATHETER AORTIC VALVE IMPLANTATION

Kerem Özbek[1], Mustafa Dağli[2], Ahmet Balun[3], Zehra Güven Çetin[1], Bekir Demirtaş[1], Eren Çamur[2], Mustafa Çetin[1], Hülya Çiçekçioğlu[1]

[1]Department of Cardiology, Bilkent City Hospital, Ankara Turkey
[2]Department of Radiology, Bilkent City Hospital, Ankara Turkey
[3]Department of Cardiology, Bandirma Onyedi Eylul University, Bandırma, Balikesir

**Objective:** Epicardial adipose tissue (EAT) influences the etiology of cardiovascular diseases by secreting inflammatory cytokines. Transcatheter aortic valve implantation (TAVI) is the primary treatment option for severe aortic stenosis in adults. Since inflammatory cytokines are involved in the development of aortic stenosis, we investigated the effects of EAT on the outcomes of patients undergoing TAVI.

**Materials:** The medical records of 334 patients who underwent TAVI for symptomatic severe aortic stenosis between March 2018 and December 2022 were evaluated after applying the exclusion criteria. Major adverse cardiac and cerebrovascular endpoints (MACCE) were defined according to the Valvular Academic Research Consortium criteria. The patients were divided into two groups: those with and without MACCE.

**Results:** Mean EAT volume was higher in patients with MACCE than those without MACCE (120.7 ± 43.9 vs. 96.1 ± 39.8, $p < 0.001$). Univariate Cox proportional-risk analysis revealed that creatinine and albumin levels, mean systolic pulmonary artery pressure, and EAT volume were significantly associated with MACCE. Multivariate Cox proportional-hazard analysis showed that EAT volume (hazard ratio [HR]: 1.012; 95% confidence interval [CI], 1.006-1.018; $p < 0.001$) and albumin level (HR: 0.925; 95% CI, 0.866-0.987; $p = 0.018$) were significantly independently associated with MACCE. Receiver operating characteristic (ROC) analysis showed that a cutoff EAT volume of 103.5 mL predicted post-TAVI MACCE with sensitivity and specificity of 57.7% and 57.4%, respectively (area under the curve, 0.653; 95% CI, 0.574–0.732; $p < 0.001$)

**Conclusion:** The EAT volume and 1-year outcomes may be related in patients undergoing TAVI for severe aortic stenosis.

**Keywords:** Epicardial adipose tissue, Transcatheter aortic valve replacement, Aortic valve stenosis, Prognosis, Mortality

**Figure 1**
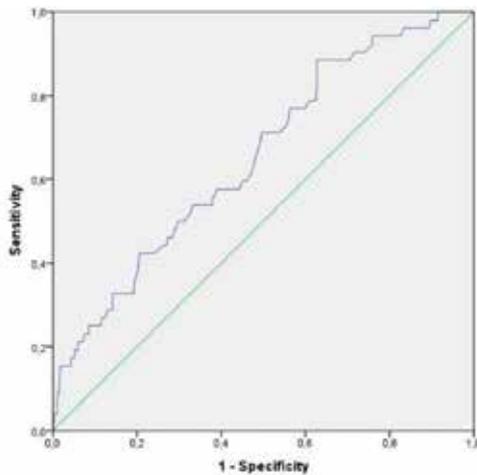


ROC analysis showing that a cutoff value of 103.5 ml for the EAT volume predicted post-TAVI MACCE with a sensitivity and specificity of 57.7% and 57.4%, respectively (AUC, 0.653; 95% CI, 0.574–0.732; p < 0.001).

**Figure 2**
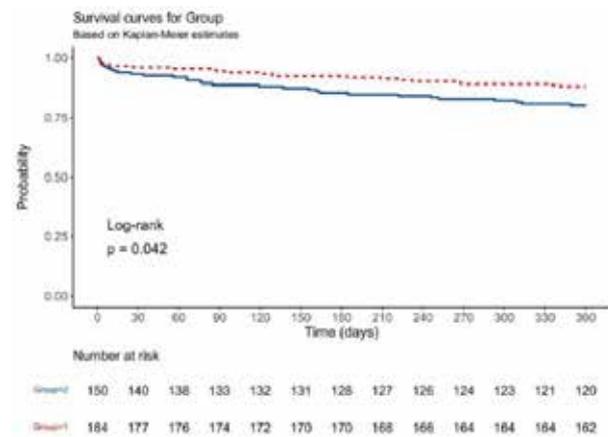


Kaplan–Meier survival plot for patients classified by EAT volume values

**Procedural and postprocedural clinical outcomes of the groups (one-year follow-up)**

| Variables | All (334) | MACCEs (-) (282) | MACCEs (+) (52 | p |
|---|---|---|---|---|
| Pacemaker, urgent, n (%) | 45 (13.5 | 35 (12.4) | 10 (19.2) | 0.186 |
| Pacemaker need in follow-up n (%) | 7 (2.1) | 0 (0) | 7 (13.5) | <0.001 |
| Acute renal failure, n (%) | 9 (2.7) | 3 (1.1) | 6 (11.5) | <0.001 |
| Major bleeding, n (%) | 2 (0.6) | 0 (0) | 2 (3.8) | 0.001 |
| Stroke, intra-procedure, n (%) | 8 (2.4) | 2 (0.7) | 6 (11.5) | <0.001 |
| Ischemic stroke, n (%) | 7 (2.1) | 0 (0) | 7 (13.5) | <0.001 |
| Hemorrhagic Stroke, n (%) | 0 (0) | 0 (0) | 0 (0) | - |
| Acute myocardial infarction, n (%) | 1 (0.3) | 0 (0) | 1 (1.9) | 0.020 |
| All-cause death 1 month, n (%) | 12 (3.6) | 0 (0) | 12 (23.1) | <0.001 |
| All-cause death, 1 year, n (%) | 23 (6.9) | 0 (0) | 23 (44.2) | <0.001 |

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ORAL PRESENTATIONS

**[OP-68]   IS ANKLE BRACHIAL INDEX A USEFUL PROGNOSTIC PARAMETER FOR PREDICTION OF THE EARLY COMPLICATIONS OF ACUTE ST-ELEVATION MYOCARDIAL INFARCTION**

Rustem Yilmaz

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**Objective:** Ankle Brachial Index (ABI), obtained by manually measuring the systolic blood pressures of the brachial and posterior tibial arteries, is an independent indicator of the number of coronary vessels affected by coronary artery disease and is also directly associated with cardiovascular mortality. In this study, the relationship between ABI and early complications of acute ST-elevation myocardial infarction (STEMI) was investigated.

**Methods:** 47 patients admitted to the coronary care unit (CCU) due to STEMI were enrolled. ABI was obtained by manually measuring systolic blood pressures of the brachial and posterior tibial arteries (or dorsalis pedis artery) as soon as patients arrived at the CCU. The patients were then divided into two groups as ABI = 0.9 and below (group 1) or >0.9 (group 2). Patients presenting with the absence of peripheral pulse and cardiogenic shock were excluded from the study. Subjects were categorized according to age, gender, coronary risk factors, STEMI location, and complications during hospital stay.

**Results:** A total of 47 patients participated in the study, of which 16 (35%) were group 1 and 31 (65%) were group 2. Early STEMI complications developed in 6 (37%) of group 1 patients, 2 of whom were cardiogenic shock and 4 were acute pulmonary edema. In group 2 patients, 3 (10%) patients developed early STEMI complications, 2 of which were acute pulmonary edema and 1 was acute stent thrombosis. Complications in the early phase of STEMI were significantly higher in group 1 than group 2 (p<0.05). Conclusion: By measuring the ABI in each patient with STEMI, prognosis and early complications can be predicted.

**Keywords:** Acute myocardial infarction; ankle brachial index; early STEMI complications.

**Keywords:** ankle brachial index, acute st-elevation myocardial infarction, early myocardial infarction complications

**Table 1. Comparison of demographic and clinical features of patients with Group 1 (ABI = 0.9 and below) and Group 2 (ABI>0.9)**

| | | ABI<=0,9 | | ABI>0,9 | | p-value |
|---|---|---|---|---|---|---|
| AGE | | 68±9,5 Mean±SD | | 59,22±11,9Mean±SD | | 0,014 |
| | | Count | Column N % | Count | Column N % | p-value |
| WOMEN: 0, MEN: 1 | 0 1 | 4 12 | 25,0% 75,0% | 10 21 | 32,3% 67,7% | 0,606 |
| HT NO: 0, YES: 1 | 0 1 | 7 9 | 43,8% 56,3% | 14 17 | 45,2% 54,8% | 0,927 |
| DM NO: 0, YES: 1 | 0 1 | 9 7 | 56,3% 43,8% | 18 13 | 58,1% 41,9% | 0,905 |
| SMOKİNG NO: 0, YES: 1 | 0 1 | 5 11 | 31,3% 68,8% | 12 19 | 38,7% 61,3% | 0,614 |
| EARLY MI COMPLICATION NO: 0, YES:1 | 0 1 | 10 6 | 62,5% 37,5% | 28 3 | 90,3% 9,7% | 0,022 |
| CARDİOGENİC SHOCK NO: 0, YES: 1 | 0 1 | 14 2 | 87,5% 12,5% | 31 0 | 100,0% 0,0% | 0,044 |
| ACUTE PULMONARY ODEMA NO:0, YES:1 | 0 1 | 12 4 | 75,0% 25,0% | 29 2 | 93,5% 6,5% | 0,071 |
| MI LOCATİON ACUTE INFERIOR MI: 0 ACUTE ANTERIOR MI: 1 | 0 1 | 10 6 | 62,5% 37,5% | 16 15 | 51,0% 49,0% | 0,368 |
| DEATH NO:0, YES: 1 | 0 1 | 13 3 | 81,3% 18,8% | 31 0 | 100,0% 0,0% | 0,013 |
| ONE VESSEL: 0, TWO VESSEL: 1, THREE VESSEL: 2 | 0 1 2 | 1 5 10 | 6,3% 31,3% 62,5% | 12 15 4 | 48,4% 12,9% 90,3% | 0,001 |
| ACUTE STENT THROMBOSİS NO:0, YES:1 | 0 1 | 16 0 | 100,0% 0,0% | 30 1 | 96,8% 3,2% | 0,468 |
| | | | | | | |
| | | | | | | |

*Abbreviations; HT: Hipertension, DM: Diabetes Mellitus, MI: Myocardial Infarction, ABI: Ankle Brachial Index*

**[OP-69]**   PREDICTION OF CLINICAL OUTCOMES AFTER PERCUTANEOUS CORONARY INTERVENTION: MACHINE-LEARNING ANALYSIS OF THE NATIONAL INPATIENT SAMPLE

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[2]Department of Cardiology, University Hospital of Split, Split, Croatia
[3]Department of Cardiology, Bursa Education and Research Hospital, Health Sciences University, Bursa,Turkey; Department of Cardiology, Thoraxcenter, Erasmus MC, Erasmus University, Rotterdam, The Netherlands
[4]Keele Cardiovascular Research Group, Keele University, Keele, UK

**Objective:** The goal of this study was to create a multiclass machine-learning (ML) model that could predict all-cause mortality, ischemia and hemorrhagic events in unselected hospitalized patients receiving PCI.

**Method:** This retrospective study included 1,815,595 unselected weighted hospitalizations with PCI from the National Inpatient Sample (2016-2019). Five most common ML algorithms (logistic regression, support vector machine (SVM), naive Bayes, random forest (RF), and extreme gradient boosting (XGBoost)) were trained and tested with 101 input features. The study endpoints were different combinations of all-cause mortality, ischemic cerebrovascular events (CVE) and major bleeding. An area under the curve (AUC) with 95% confidence interval (95% CI) was selected as a performance metric.

**Results:** The study population was divided into three groups: a training cohort of 1,186,880 PCI discharges, a validation cohort of 296,725 hospitalizations (for calibration), and a test cohort of 331,990 PCI discharges. The study outcomes were present in 98,180 (5.4%) of the hospital entries. Logistic regression, SVM, naive Bayes, and RF model demonstrated AUCs of 0.83 (95% CI 0.81-0.84), 0.84 (95% CI 0.83-0.85), 0.80 (95% CI 0.79-0.82), and 0.82 (95% CI 0.81-0.83), retrospectively. The XGBoost classifier outperformed the other models with an AUC of 0.86 (95% CI 0.85-0.87) and optimal calibration. The most important features were Elixhauser comorbidity score, ST-segment elevation myocardial infarction, acute renal failure, myocarditis and cardiomyopathy, dyslipidemia, Charlson comorbidity index, any acute myocardial infarction, personal/family history of disease, moderate renal failure.

**Conclusion:** On the basis of 101 features, we developed the multi-task XGBoost classifier to predict various combinations of all-cause death, ischemic CVE, and major bleeding. Using routinely gathered administrative data, such models could be beneficial for benchmarking and risk prediction.

**Keywords:** Machine Learning, Percutaneous Coronary Intervention, Thrombosis, Bleeding, Precision Medicine

**Calibration curve for the XGBoost classifier**
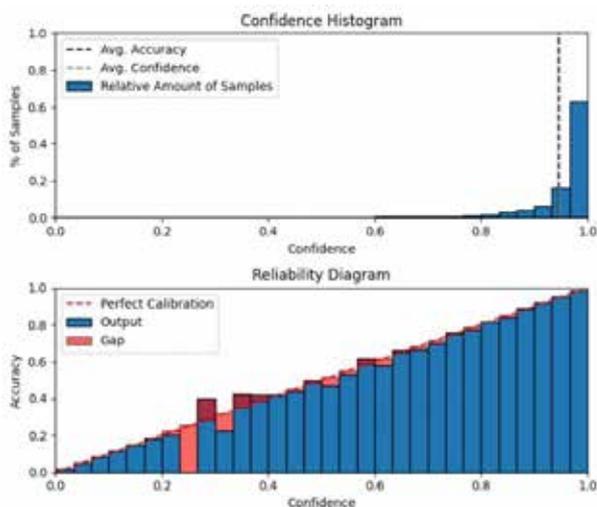


**ROC-AUC curve for the XGBoost classifier**
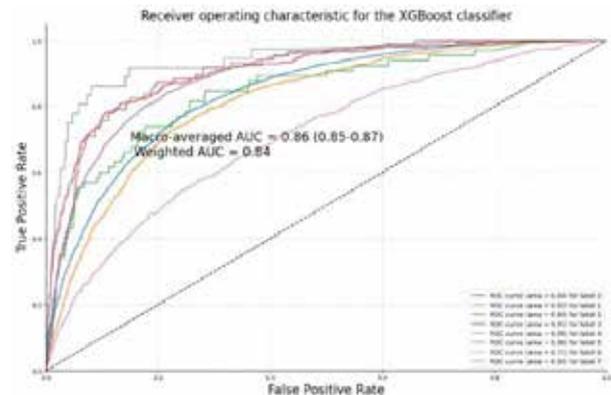


*The receiver operating characteristics for the best XGboost model. AUC, an area under the curve; ROC, the receiver operating characteristics; XGBoost, extreme gradient boosting.*

**[OP-70]**   **PREDICTORS OF MAJOR ADVERS EVENTS IN PATIENTS WITH CORONARY PERFORATION TREATED WITH COVERED STENTS**

Aysel Akhundova, Umeyir Savur, Oguz Karaca, Başak Çatalbaş

*Medipol Mega University Hospital, Istanbul, Turkey*

**Background:** Coronary artery perforation (CAP), is a rare, life-threatening complication of percutaneous coronary intervention (PCI). PTFE-coated stents are highly successful and lifesaving in the threatment of coronary perforation, specially in the proximal and mid-segment perforation of the vessel. However, its use is limited in tortuous, calcific vessels or distal perforation due to difficulty advance and low flexibility. The incidence of thrombosis and restenosis in the PTFE-covered stent is higher than in standard stents. The aim of this study was to evaluate the clinical outcomes of PTFE covered stents for coronary artery perforation.

**Materials and Methods:** We evaluated total of 38 patients who were treated with PTFE-coated stents for coronary perforation from January 2012 to January 2022 at single high-volume center- Medipol University Hospital in Turkey. The primary endpoint was the composite of major adverse cardiac events (MACEs).

**Result:** The one- year outcomes of the patients who had implanted PTFE-coated stents after CAP were investigated. A total of 38 patients were included, 22 (84%) male and 16 (16%) females. Mean age was 69.7 ± 11.4 years..MACE developed in 37% of the population (14 patients) in follow-up. The target vessel revascularisation (TVR) rate at one year was 36.8% (14 patients), the target lesion revascularisation (TLR) rate at one year was 21% (8 patients), the incidence of death was 10.5% (4 patients), of myocardial infarction 21.1% (8 patients).

**Conclusions:** Today, althought the majority of coronary perforation cases are successfully treated with a PTFE-coated stents, the one- year outcome of MACE in f CS implanted patients is high. This results showed that such patients should be under clously follow-up.

**Keywords:** Coronary artery perforation, covered stent, myocardial infarction

### Predictors of adverse events

|  | Hazard Ratio | 95% Confidence Interval | p value |
|---|---|---|---|
| Female gender | 1.252 | 1.012 – 1.492 | 0.036 |
| Previous PCI | 2.245 | 1.145 – 4.387 | 0.042 |
| Stent diameter | 0.960 | 0.936 – 0.994 | 0.135 |

*On multivariate analysis in our study, female sex and Previous PCI were an independent predictor of overall adverse events*

**[OP-71]** PROGNOSTIC AND PREDICTIVE PERFORMANCE OF IMMUNE-NUTRITIONAL SCORING SYSTEMS IN PATIENTS WITH PERIOPERATIVE MYOCARDIAL INJURY DURING NON-CARDIAC SURGERY

Pelin Karaca Özer, Mustafa Lütfi Yavuz, Fakhriyya Ismayilova, Emre Yalçın, Berk Batuhan Bayraktar, Samim Emet, Ali Elitok, Aytaç Öncül

*Istanbul University, Istanbul Faculty of Medicine, Department of Cardiology*

**Purpose:** Perioperative myocardial infarction/injury (PMI) is an important complication of non-cardiac surgery that usually has a clinically silent presentation but is associated with a poor prognosis. This study aims to investigate how to predict PMI after non-cardiac surgery and whether pre-operative risk scores contribute to the prediction of PMI and prognosis.

**Methods:** We included 396 consecutive patients for whom cardiology consultation was requested before non-cardiac surgery between December 2022 and March 2023. An absolute increase in high- sensitivity cardiac troponin (hs-cTn) concentration of more than the upper limit of normal on days 1 or 2 after surgery compared to the pre-operative level is defined as PMI. Patients who did not have follow-up of hs-cTn value on days 1 or 2 after surgery were excluded from the study. Immune-inflammatory-nutritional operative risk scores were calculated according to the preoperative blood values of all patients. The total cholesterol (TC) level, serum albümin (Alb) content, neutrophil-to-lymphocyte ratio (NLR) and lymphocyte-to-monocyte ratio (LMR) were determined to calculate the Naples prognostic score (NPS). The sum of the scores of the four parameters is the NPS. The CONUT score consists of Alb and TC concentrations and lymphocyte count. The Prognostic Nutritional Index (PNI) was calculated as follows:(10×Alb+0.005×lymphocyte count). The systemic inflammation score (SIS) score consists of Alb concentration and LMR.

**Results:** A total of 246 patients were included in the study. PMI was detected in 12.2% of the patients (n=30). Mean age was higher in the PMI group (71.2±14.2 vs. 64.1±13.6; p=0.004), hypertension and peripheral arterial disease were more frequent (p=0.024, p=0.028; respectively). Pre-operative urea, creatinine, pro-BNP, d-dimer, hs-cTn, CRP, neutrophil, monocyte levels were significantly higher than those in the PMI group; Alb, TC levels were lower. The rate of high-risk surgery was higher in the PMI group than in the non-PMI group (47% vs.18%; p=0.005). PMI group had higher NPS and SIS scores (p<0.001, p=0.008; respectively), while CONUT and PNI scores were similar. The multivariate logistic regression analysis revealed that age (p=0.027), creatinine level (p=0.036), high-risk surgery (p=0.002), and NPS score (p=0.016) were independent predictors of PMI. During the postoperative 30 days, a total of 15 patients died (6.1%). The 30-day mortality rate was higher in the PMI group (20% vs. 4%; p=0.045) than in the non-PMI group. In Cox regression models, NPS (p=0.043), albumin (p=0.027), and PMI (p=0.028) were independent risk factors of 30-day mortality. A NPS >=3 predicts PMI with 67% sensitivity, 65% specificity, and mortality with 87% sensitivity and 65% specificity.

**Conclusion:** Among the scores that provide information on immune-nutritional status, NPS can assist in screening patients at high risk for PMI during non-cardiac surgery and can be appropriate for predicting prognosis.
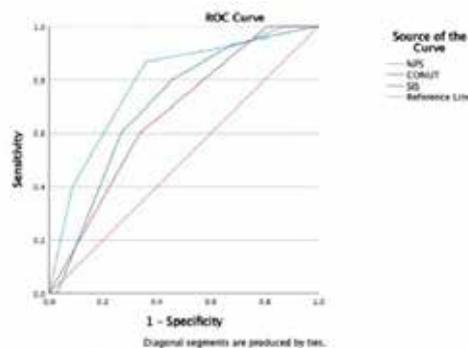
**Keywords:** immune-nutrtional risk score, Naples, non-cardiac surgery, myocardial injury, prognosis

**Figure 1**
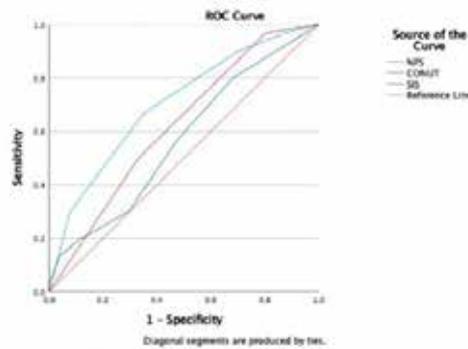


*ROC curve showing the sensitivity and specificity of NPS in predicting PMI*

**Figure 2**



*ROC curve showing the sensitivity and specificity of NPS in predicting mortality*

**[OP-72]    PROGNOSTIC IMPACT OF THE TRICUSPID ANNULAR PLANE SYSTOLIC EXCURSION/PULMONARY ARTERIAL SYSTOLIC PRESSURE RATIO IN ACUTE PULMONARY EMBOLISM**

Berhan Keskin[1], Barkın Kultursay[2], Seda Tanyeri Uzel[1], Seyhmus Kulahcioglu[2], Aykun Hakgor[4], Hacer Ceren Tokgoz[2], Enver Yucel[2], Ahmet Sekban[2], Ali Karagoz[2], Halil Ibrahim Tanboga[3], Cihangir Kaymaz[2]

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[2]Kosuyolu Heart Hospital
[3]Hisar Intercontinental Hospital
[4]Medical University Hospital

**Background and Aim:** Currently available risk stratification models for acute pulmonary embolism (PE) include hemodynamic status, cardiac bi-omarkers, right ventricle (RV) dysfunction on imaging, and clinical scores. Focusing on length-tension relationship of the ventricle might have a superior predictive capability over RV dysfunction in terms of mortality and classification of patients with acute PE. In this study, our hypothesis suggests that tricuspid annular plane systolic excursion (TAPSE)/systolic pulmonary artery pressure (PAPs) ratio has superior predictive capability for in-hospital mortality in patients with acute PE compared to TAPSE or PAPs as distinct measures.

**Methods-Results:** This single-center study comprised retrospectively evaluated 865 patients referred to our tertiary cardiovascular center with acute PE. We divided patients into quartiles by TAPSE/PAPs ratio. Different models were developed to quantify the predictive relationship between in-hospital death and echocardiographic measurements. A base model was created with variables including risk status and RV/LV ratio >1. Then, to evaluate the predictive contribution of each measurement; TAPSE/PAPs, TAPSE, and PAPs were sequentially added to the base model. After that, the performance of each model was evaluated. The model with the highest R2 and AUC values was accepted as the best predictive model. Predictive and discriminative power was the highest in model containing TAPSE/PAPs. There was still a significant inverse association between TAPSE/PAPs and risk of in-hospital death even after adjusting by risk status and RV/LV ratio >1. ROC curve analysis for TAPSE/PAPs revealed the best cut-off value based on the Youden index as 0.34.

**Conclusion:** The outcomes of our study reveals that the ratio of TAPSE/PAPs serves as a more potent predictor of mortality than either of the two measurements taken separately. The interpretation and utilization of the TAPSE/PAPs cut-off value in acute PE can assist in identifying patients at risk of deterioration and guide the consideration of more intensive treatment options across all risk groups.

**Keywords:** acute pulmonary embolism, risk stratification, right ventricular function, echocardiography

**figure 1**
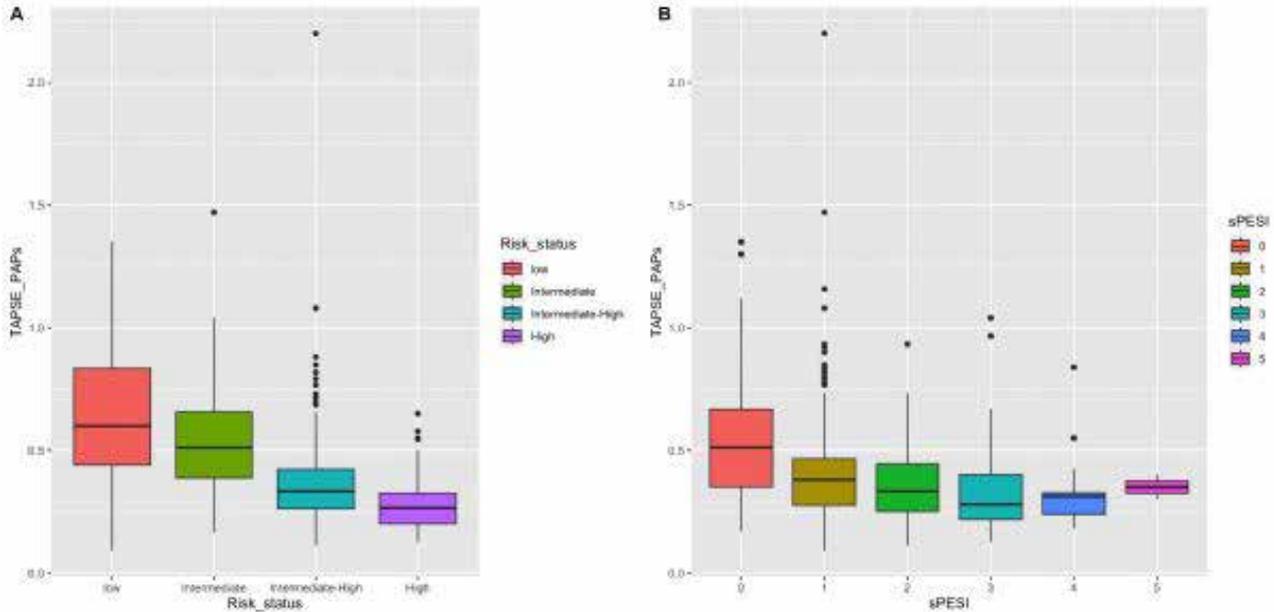


*TAPSE/PAPs values according to risk status and sPESI class*

**figure 2**
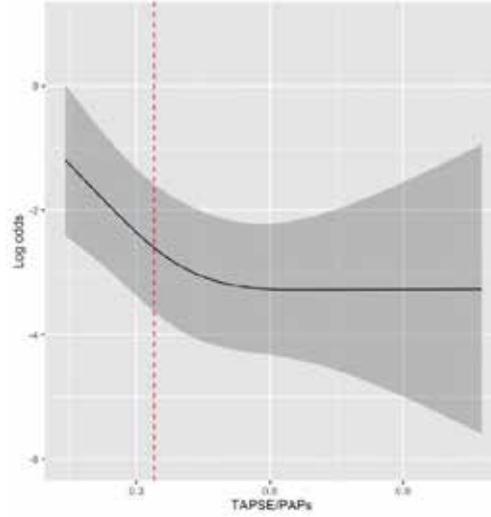


*Partial effect plot of TAPSE/PAPs in the prediction of in-hospital death. The vertical dashed red line indicates the best cut-off value of TAPSE/PAPs based on the Youden index (0.34)*

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ORAL PRESENTATIONS

**[OP-73]** SERUM GALECTIN-3 LEVELS ARE ASSOCIATED WITH EARLY MARKERS OF SUBCLINIC SYSTEMIC ATHEROSCLEROSIS AND OBSTRUCTIVE SLEEP APNOEA SYNDROME SEVERITY

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**Background:** Obstructive sleep apnea (OSA) has emerged as an independent risk factor for atherosclerosis. As a new biomarker of cardiovascular disease Galectin-3 is an independent risk factor for cardiovascular disease and has an impact on the progress of atherosclerosis including endothelial dysfunction, lipid endocytosis. We aimed to investigate the association of galectin-3 with endonthelial dysfunction, subclinical atherosclerosis and severity of OSA.
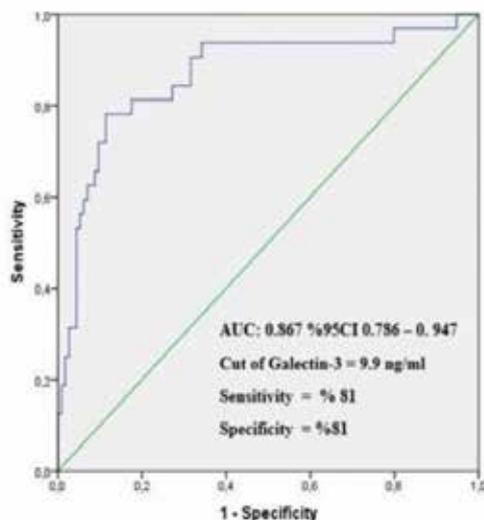
**Materials-Methods:** All patients underwent polysomnography, and based on the results, the participations were allocated to the control group (n = 33) or to OSA group (n = 113). The OSA group was classified as having mild (apnea-hypopnea index (AHI) = 5–15 events/hour; n = 43), moderate (AHI = 15–30 events/hour; n = 42), or severe OSA (AHI > 30 events/hour; n = 55). All participants underwent evaluation of carotid intima–media thickness (CIMT) and Flow-mediated dilation method (FMD). Serum Galectin-3 levels were measured by ELİSA method.

**Results:** Serum mean Galectin-3 levels increased in a stepwise fashion from controls to patients with more severe OSA (Control 5.47± 1.31; mild OSA 7.4 ± 1.63; moderate OSA 10.3±3.29 and severe osas 12.6± 3.91 pg/mL, respectively, p<0.001).When CIMT was compared with controls and modere and severity OSAS, a stepwise increases in CIMT was observed (0.5 mm (0.4-0.6); 0.7 mm (0.5-00.8) and 0.8 mm (0.7-1.0) respectively, p<0.004) whereas CIMT was similar in control and mild OSA patients (0.5 mm (0.4-0.6); and 0.5 mm (0.4-0.6)) respectively, p 0.310). When FMD was compared between control and OSA, a stepwise decrease in FMD was observed (9.97±2.25; 8.20±3.03; 6.29±1.89 and 5.60 ± 2.6% respectively, p<0.001). Serum Galectin-3 levels, CIMT and FMD were found to be significantly associated with AHI (r=0.849, p<0.001, r= 0.647 p<0.001, r=-0.579 p<0.001 respectively). Moreover, serum Galectin-3 levels had significantly positive correlation with CIMT (0.647 p< 0.001) and had significantly negative correlation with FMD (r= -0.579, p<0.001) in patients with OSAS. Galectin-3 levels were independent predictor of subclinical atherosclerosis (p<0.001)

**Conclusions:** Higher level of galectin-3 is associated with OSA severity and impaired endothelial function and CIMT.

**Keywords:** obstructive sleep apnoea syndrome, atherosclerosis, galectin-3, endothelial function, carotid intima-media thickness

**Figure 4. Receiver operator characteristic curves showing the predictive value of galectin-3 for coronary atherosclerosis in patients with obstructive sleep apnoea syndrome; AUC — area under the curve; CI — confidence interval;**



AUC: 0.867 %95CI 0.786 – 0.947
Cut of Galectin-3 = 9.9 ng/ml
Sensitivity = % 81
Specificity = %81



**Table 4. Overall characteristics of the study groups according to CIMT**

| | CIMT >0.09 mm N = 32 | CIMT ≤0.09 mm N = 114 | p value |
|---|---|---|---|
| Sex (male), n (%) | 19(59.4) | 60(52.6) | 0.499 |
| Age (years) | 51 ±9.5 | 49.8 ±9.9 | 0.376 |
| Diabetes, n (%) | 15(46.9) | 34(29.8) | 0.071 |
| Hypertension, n (%) | 16(50) | 42(36.8) | 0.179 |
| Smoker, n (%) | 0 | 13(7) | 0.072 |
| BMI (kg m) | 35.6 ±7.1 | 31.1 ±6.4 | 0.001 |
| Office SBP (mmHg) | 130.8 ±16.6 | 128 ±17.8 | 0.433 |
| Office DBP (mmHg) | 82 ±12.7 | 80 ±13.7 | 0.467 |
| Sleep time | 341 ±81.9 | 364 ±62.8 | 0.088 |
| Sleep efficiency | 76.1 ±13.4 | 79.9 ±11.8 | 0.119 |
| REM (%) | 0.7 ±6.7 | 0.7 ±6.3 | 0.606 |
| Non-REM Stage 1 (%) | 6.8 ±6.6 | 5.7 ±5.2 | 0.356 |
| non-REM Stage 2 (%) | 73.2 ±12 | 70.6 ±12 | 0.823 |
| non-REM Stage 3 (%) | 10.4 ±8.1 | 2.8 ±9.4 | 0.19 |
| ODI (h) | 30.2 ±22 | 14.7 ±19.8 | <0.001 |
| AHI (h) | 47 ±25.3 | 21.89 ±21.8 | <0.001 |
| Baseline oxygen saturation (%) | 95.6 ±1.5 | 96.5 ±1.5 | 0.08 |
| Minimum oxygen saturation (%) | 79.6 ±11.5 | 83.9 ±12.1 | 0.001 |
| OSAS severity | | | |
| Mild, (n%) | 0 | 29(27.2) | |
| Moderate, n (%) | 7(21.9) | 26(25.4) | <0.001 |
| Severe, n (%) | 23(71.9) | 28(24.6) | |
| Total cholesterol (mg/dL) | 207.3 ±42 | 219.7 ±32.9 | 0.093 |
| LDL-C (mg/dL) | 146.3 ±32.3 | 154.3 ±308 | 0.202 |
| hsCRP | 3.7 ±1.8 | 3.4 ±2.4 | 0.519 |
| Galectin-3(ng/mL) | 14.1 ±4.2 | 8.2 ±3.0 | <0.001 |
| FMD (%) | 5.6 ±2 | 7.7 ±3.2 | 0.001 |

AHI: apnea-hypopnea index; BMI: body mass index; CIMT: carotid intima-media thickness; REM: rapid eye-movement; hs-CRP: high-sensitivity C-reactive protein; LDL-C: low-density lipoprotein cholesterol; FMD: flow-mediated dilation; ODI: oxygen desaturation index.

**ORAL PRESENTATIONS**

**[OP-74]  SYSTEMIC INFLAMMATION RESPONSE INDEX PREDICTS VENTRICULAR ARRHYTHMIA AFTER SUCCESSFUL REPERFUSION IN ST-ELEVATION MYOCARDIAL INFARCTION**

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**Objective:** Ventricular arrhythmias (VA) are common in the course of ST-segment elevation myocardial infarction (STEMI). VA may be asymptomatic but may also be fatal. VA after successful primary percutaneous coronary intervention are an important cause of mortality in STEMI. However, studies on the clinical determinants of mortality after reperfusion are insufficient. Systemic inflammation response index (SIRI) is a novel inflammatory marker. The aim of our study, to investigate the relationship between ventricular arrhythmia and SIRI after primary percutaneous coronary intervention (pPCI) in STEMI patients.

**Materials-Methods:** 1286 consecutive patients who underwent primary PCI for STEMI were enrolled into the study. 185 patients were excluded from the study because of coronary no-reflow (TIMI flow grade <3) and 63 patients were excluded from the study because of acute and subacute stent thrombosis during hospital stay. Remaining 1038 patients formed the study population. VA was defined as sustained ventricular tachycardia and ventricular fibrillation. Multivariate logistic regression analysis was used to determine independent predictors of VA.

**Results:** 48 patients (4.6 %) developed VA during hospitalization. Patients with VA were older, more likely to be male and higher rate of diabetes mellitus (Table 1). While admission white blood cell, glucose and creatinine were significantly higher in patients with VA, left ventricular ejection fraction were significantly lower. SIRI were significantly higher in patients with VA (2.1±1.7 vs. 4.3±2.1; p=<0.001). In univariate logistic regression analysis showed that age, gender, DM, white blood cell count, glucose, creatinine, SIRI and left ventricular ejection fraction were associated with VA (Table 2). In multivariate logistic regression analysis, SIRI level was found as an independent predictor of VA (HR 1.894, CI 1.445-2.345, p=0.001). Age and white blood cell count were other independent predictors of VA.

**Conclusion:** The present study showed that a higher SIRI level was predicted development of VA during hospitalization in patients underwent successful pPCI for STEMI. Further studies are required to identify predictors of VA after successful PCI for STEMI.

**Keywords:** ST-elevation myocardial infarction, systemic inflammation response index, ventricular arrhythmia

**Table 1**

|  | Normal (n=990) | VT/VF (n=48) | p value |
|---|---|---|---|
| Age (years) | 57.3 ± 11.4 | 63.2 ± 12.5 | <0.001 |
| Male Gender [n (%)] | 572 (57.7) | 32 (66.6) | 0.005 |
| Hypertension [n (%)]) | 380 (38.4) | 19 (39.6) | 0.867 |
| Diabetes Mellitus [n (%)] | 235 (23.7) | 24 (50.0) | <0.001 |
| Smoking [n (%)] | 541 (54.6) | 25 (52.1) | 0.442 |
| Previous CABG | 30 (3.0) | 1 (2.1) | 1.000 |
| Previous PCI | 80 (8.1) | 7 (14.6) | 0.099 |
| Hemoglobin (g/l) | 13.26 ± 1.41 | 13.17 ± 2.02 | 0.264 |
| WBC (x 1,000/ml) | 11.36 ± 2.50 | 15.15 ± 4.34 | <0.001 |
| Potassium | 4.20 ± 0.65 | 3.90 ± 0.32 | 0.06 |
| Admission Glucose (mg/dl) | 156.4 ± 75.7 | 216.5 ± 115.6 | <0.001 |
| Creatinine (mg/dl) | 1.02 ± 0.45 | 1.25 ± 0.55 | <0.001 |
| LDL-C (mg/dl) | 123.5 ± 31.9 | 117.8 ± 33.5 | 0.264 |
| HDL-C (mg/dl) | 40.2 ± 11.2 | 40.9 ± 10.5 | 0.273 |
| Triglyceride (mg/dl) | 158.3 ± 110.5 | 148.6 ±77.5 | 0.398 |
| SIRI | 2.1 ± 1.7 | 4.3 ± 2.1 | <0.001 |
| LVEF (%) | 47.07 ± 11.22 | 39.76 ± 11.53 | <0.001 |

*Baseline Characteristics and Laboratory Findings of the Patients*

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ORAL PRESENTATIONS

**[OP-75]    THE ASSOCIATION OF SERUM URIC ACID/ALBUMIN RATIO WITH STENT TROMBOSIS IN PATIENTS WITH ST ELEVATION MYOCARDIAL INFARCTION**

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**Background:** Despite advances stent technology and medical treatments, the incidence of stent thrombosis (ST) is still frequent and a major problem following primer percutaneous coronary intervention (pPCI). Previous studies have shown that high uric acid (UA) and low serum albumin (SA) values were associated with adverse outcome n ST-elevation myocardial infarction (STEMI). This study aimed to investigate the predictive value of the uric acid-to-serum albumin ratio (UAR) for stent thrombosis in STEMI patients

**Method:** A total of 1887 consecutively STEMI were included in this cross-sectional study. The population sample was classified based on the development of ST during hospitalization. ST was defined as per the standardized definition proposed by the Academic Research Consortium. Acute (0 to 24 hours after stent implantation) and subacute (>24 hours after stent implantation to hospital stay) ST were included. The UAR was calculated by dividing the serum UA level by SA level.

**Results:** During the hospitalization, 80 pPCI patients (4,2%) were diagnosed with ST. Advanced age, male gender and diabetes mellitus (DM) and smoking were more common in patients who developed ST. ST (+) patients had higher serum UAR levels than ST (-). According to the multivariable logistic regression model, the UAR (OR: 2,6 95% CI: 1.92-3.52, p < 0.001) and DM (OR: 1,6 95% CI: 1.05-2,73, p < 0.029) were independent predictors for ST in STEMI patients. The area under curve (AUC) value of the UAR in a receiver operating characteristics (ROC) evaluation was 0.795. A cutoff value of 1.81 for UAR detected ST development with a sensitivity of 80 % and specificity of 71%

**Conclusion:** As a novel inflammatory marker, UAR was an independent predictor of ST development in STEMI patients underwent pPCI.

**Keywords:** ST-elevation myocardial infarction, stent trombosis, uric acid/albumin ratio

**Figure-1**
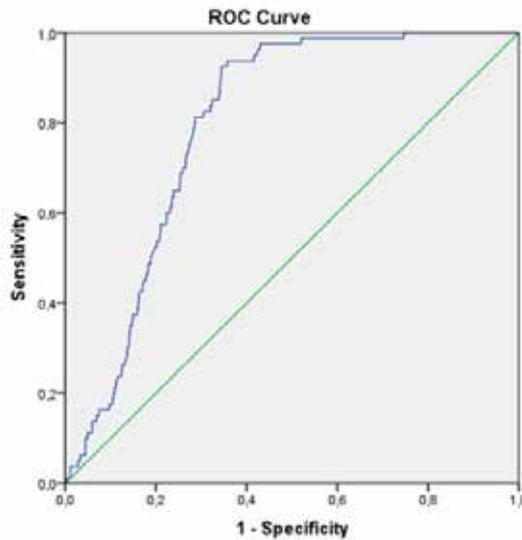


The ROC curve of uric asid-albumin ratio ( UAR), for stent trombosis (AUC:0.795 Cut 1.81, sensitivite %80 spesifite %71)

**Tablo-2**

Table-2 Multivariate logistic regression analysis for ST prediction

| Variables | OR | CI | p value |
|---|---|---|---|
| UAR, mg/g | 2.6 | 1.92-3.52 | <0.001 |
| DM | 1.6 | 1.05-2.73 | 0.029 |
| Age, years | 1.01 | 0.99-1.03 | 0.71 |
| Smoking | 1.2 | 0.69-2.37 | 0.282 |

CI, confidens interval; DM, diabetes mellitus; OR, odds raito; UAR, uric asid-albumin ratio

**Table -1**

| Variables | Overall ( n=1887) | ST (-) ( n=1807) | ST (+) ( n= 80) | p value |
|---|---|---|---|---|
| Age, years | 59 (51-69) | 57 (49-65) | 59 (61-69) | 0.045 |
| Male gender, n (%) | 1458 (77.2) | 1386 (76.7) | 72 (90) | 0.005 |
| DM, n (%) | 440 (23.3) | 415 (22.9) | 25 (32.2) | 0.025 |
| HT, n (%) | 877 (46.4) | 841 (46.5) | 36 (46.2) | 0.955 |
| HL, n (%) | 117 (6.2) | 111 (6.1) | 6 (7.5) | 0.622 |
| Smoking, n (%) | 356 (18.8) | 336 (18.5) | 20 (25.1) | 0.039 |
| LMCA stenosis, n (%) | 80 (4.2) | 77 (4.2) | 3 (4.2) | 0.824 |
| Stent Type (DES), n (%) | 1738 (92.1) | 1668 (92.3) | 70 (92.5) | 0.998 |
| Total cholesterol, mg/dL | 176 (152-204) | 131 (98-178) | 120 (98-170) | 0.572 |
| Triglyceride, mg/dL | 131 (98-178) | 149 (110-208) | 123 (94-159) | 0.124 |
| HDL-C, mg/dL | 35 (30-41) | 35 (30-41) | 35 (30-41) | 0.629 |
| LDL-C, mg/dL | 111(90-134) | 111 (90-134) | 109 (93-135) | 0.855 |
| Creatinine, mg/dL | 0.82 (0.7-1.0) | 0.83 (0.74-0.10) | 0.85 (0.7-1.1) | 0.913 |
| e-GFR, ml/min/1.73m2 | 93.3 (74.4-103) | 93.7 (73-103) | 94.7 (80-103) | 0.399 |
| Glucose, mg/dL | 131 (108-182) | 131 (108-182) | 129 (110-185) | 0.995 |
| WBC,103/dL | 11.7 (9.5-14.6) | 11.7 (9.5-14.6) | 11.8 (10.1-14.7) | 0.410 |
| Hemoglobin, g/dL | 13 (11-15) | 14 (12-15) | 14 (13-16) | 0.146 |
| Platelet count,103/dL | 233 (197-278) | 235 (197-277) | 236 (201-287) | 0.315 |
| Lymphocyte, cells/µL | 1.73 (1.2-2.3) | 1.7 (1.2-2.4) | 1.7 (1.2-2.5) | 0.743 |
| Neutrophils, cells/µL | 8.9 (6.6-11.7) | 8.8 (6.6-11.7) | 9.3 (6.8-11.5) | 0.442 |
| CRP, mg/dL | 0.9 (0.4-2.9) | 0.9 (0.4-2.8) | 1.1 (0.5-3.9) | 0.101 |
| Albumin, g/dL | 3.8 (3.5-4.1) | 3.6 (3.8-4.1) | 3.7 (3.5-4.0) | 0.140 |
| Uric Asid, mg/dL | 5.8(4.8-7.1) | 5.9(4.8-7.0) | 7.1 (6.4-7.9) | <0.001 |
| UAR, mg/g | 1.5(1.2-1.9) | 1.5(1.2-1.9) | 1.8 (1.7-2.0) | <0.001 |

*Baseline characteristics of the study population*

**[OP-76]**   THE POWER OF THE CHA2DS2-VASC SCORE TO PREDICT STROKE IN PATIENTS WITH DEGENERATIVE VALVE DISEASE AND WITHOUT ATRIAL FIBRILLATION

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[2]Cardiology Department, Çekirge State Hospital

**Objective:** Atrial fibrillation (AF) is one of the most common causes of stroke and transient ischemic attack (TIA). Apart from AF, coronary artery disease risk factors such as hyperlipidemia and smoking are also risk factors for stroke. CHA2DS2-VASc scoring system is used to determine stroke risk in patients with AF. Aortic and mitral valve calcification is not considered as vascular disease, but studies have shown an increased incidence of stroke in these patients. In our study, we wanted to test the power of the CHA2DS2-VASc score system to predict stroke risk in patients with degenerative valve disease and without AF.

**Method:** Our study was planned as a retrospective, case-control study. In our study, 30 patients with degenerative valve disease who experienced thromboembolic stroke whose etiology could not be determined vascular and cardiac origin, and 30 patients with degenerative valve disease who did not experience stroke were included in the control group. When calculating the CHA2DS2-VASc score of the stroke group, the last stroke was not included in the calculation. ROC-curve analysis was performed to evaluate the power of the CHA2DS2-VASc score to predict stroke.

**Results:** Hypertension and coronary artery disease were significantly higher in stroke patients. CHA2DS2-VASc scores were significantly higher in stroke patients. In the ROC-curve analysis, the AUC value was 0.86, 95% CI was 0.78-0.95. The power to predict stroke cut-off value was found to be >5 with a CHA2DS2-VASc score, while the sensitivity was 73.3% and the specificity was 90%.

**Conclusion:** CHA2DS2-VASc score can predict the risk of stroke in patients with degenerative valve without atrial AF. Using this scoring system, close follow-up of risky patients may be beneficial.

**Keywords:** CHA2DS2-VASc score, Degenerative valve disease, Non-atrial fibrillation, Stroke

### ROC-curve Analysis



Area under ROC curve = 0.8694
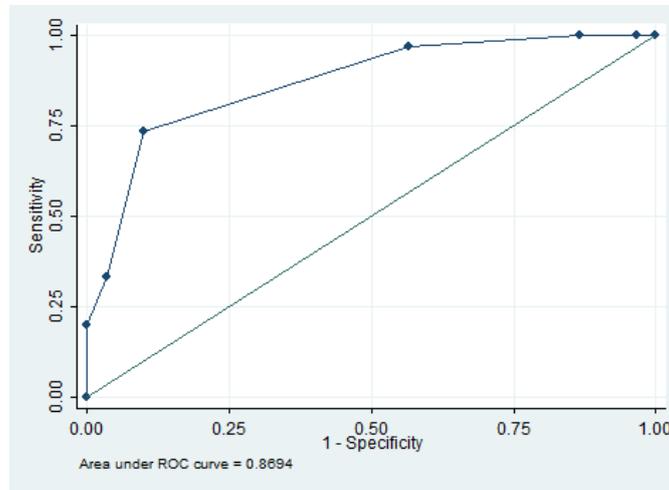
### Demographic data

| Parameters | Stroke positive group | Stroke negative group | p value |
|---|---|---|---|
| Number of patients | 30 | 30 | |
| Age | 77.06±8.04 | 80.96±6.78 | 0.5 |
| Male gender (%) | 15 (50%) | 15 (50%) | 0.6 |
| Aortic valve disease | 17 (56.7%) | 17 (56.7%) | 0.6 |
| Hypertension | 30 (100%) | 20 (66.7%) | 0.001 |
| Diabetes Mellitus | 13 (43.3%) | 7 (23.3%) | 0.1 |
| Coronary artery disease | 23 (76.7%) | 11 (36.7%) | 0.004 |
| Chronic Renal Insufficiency | 4 (13.3%) | 0 | 0.1 |
| Smoking | 10 (33.3%) | 9 (30%) | 0.5 |
| Ejection fractione | 50 (45-60) | 50 (45-60) | 0.1 |
| CHA2DS2-VASc score | 5 (4.75-6) | 4 (3-4) | <0.001 |

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**ORAL PRESENTATIONS**

**[OP-77]  THE PROGNOSTIC VALUE OF THE TRIGLYCERIDE GLUCOSE INDEX IN PATIENTS WITH ST-ELEVATION MYOCARDIAL INFARCTION**

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**Objective:** ST-elevation myocardial infarction (STEMI) is accountable for a significant portion of the morbidity and mortality associated with cardiovascular disease on a global scale. Although advancements in medical therapies and revascularization methods have contributed to a decline in this rate, the risk of major adverse cardiac events (MACE) remains notably high among STEMI patients. Therefore, it is of paramount importance to identify patients at a high risk of developing such events in advance, establish treatment objectives, and develop specific approaches tailored to varying risk levels. The triglyceride-glucose (TyG) index has emerged as a novel marker reliably indicating insulin resistance. Research studies have demonstrated that an elevated TyG index serves as an independent predictor for the progression of coronary artery calcification and escalates the risk of coronary artery disease, including myocardial infarction. However, the precise impact of the TyG index on MACE in STEMI patients has yet to be fully elucidated. Consequently, the objective of this study is to assess the prognostic value of the TyG index in patients diagnosed with STEMI.

**Method:** The study was conducted as a retrospective observational analysis and involved a total of 113 patients who presented with STEMI at our hospital between January 2022 and July 2022. The TyG index was calculated using the formula ln[fasting Triglyceride (mg/dL) × fasting glucose (mg/dL)/2]. The patients were then categorized into two groups based on the occurrence of short-term (1 month) MACE, which included mechanical complications, malignant arrhythmia, recurrent revascularization, cardiogenic shock, hospital admission with pulmonary edema, and death. The variables between these two groups were assessed and analyzed accordingly.

**Results:** The primary characteristics of the MACE-negative group (n=87) and the MACE-positive group (n=26) are summarized in Table-1. In the univariate analysis, variables such as KILLIP class ($p<0.001$), heart rate ($p=0.001$), blood glucose level ($p=0.035$), culprit vessel type ($p=0.031$), Thrombolysis In Myocardial Infarction (TIMI) frame grade (TFG) ($p=0.028$), corrected TIMI frame count (cTFC) ($p=0.028$), baseline left ventricular ejection fraction (LVEF) within the first 24 hours ($p<0.001$), and the TyG index ($8.9\pm0.6$ vs $9.2\pm0.9$, $p=0.046$) showed statistically significant differences between the two groups. When considering the combined effects of multiple variables, TyG values did not emerge as a significant differentiating factor between the MACE groups.

**Conclusion:** The findings suggest a potential association between a high TyG index and the occurrence of short-term MACE in patients with STEMI. Implementing strategies aimed at reducing the TyG index could potentially contribute to lowering the morbidity and mortality rates in this patient population. However, further studies on a larger scale are necessary to validate and confirm this relationship.

**Keywords:** acute coronary syndrome, major adverse cardiac events, triglyceride-glucose index

**Table-1:** Basal characteristics of patients according to MACE group

**Table-1: Basal characteristics of patients according to MACE group**

| | MACE (-) N=87 | MACE (+) N=26 | p-value |
|---|---|---|---|
| **Demographic features** | | | |
| Age | 57.3 ± 10.9 | 60.4 ± 12.3 | 0.227 |
| Sex (n%) | | | 0.234 |
| Female | 20 (69) | 9 (31) | |
| Male | 67 (79.8) | 17 (20.2) | |
| BMI (kg/m²) | 26.2 ± 3.4 | 27.7 ± 3.3 | 0.058 |
| Hypertension (n%) | | | 0.227 |
| No | 55 (80.9) | 13 (19.1) | |
| Yes | 32 (71.1) | 13 (28.9) | |
| Diabetes Mellitus (n%) | | | 0.349 |
| No | 68 (79.1) | 18 (20.9) | |
| Yes | 19 (70.4) | 8 (29.6) | |
| CAD history (n%) | | | 0.406 |
| No | 67 (75.3) | 22 (24.7) | |
| Yes | 20 (83.3) | 4 (16.7) | |
| Cerebrovascular Disease (n%) | | | 0.667 |
| No | 85 (77.3) | 25 (22.7) | |
| Yes | 2 (66.7) | 1 (33.3) | |
| Family history (n%) | | | 0.923 |
| No | 84 (77.1) | 25 (22.9) | |
| Yes | 3 (75) | 1 (25) | |
| Smoking status (n%) | | | 0.805 |
| Non-smoker | 28 (73.7) | 10 (26.3) | |
| Smoker | 54 (78.3) | 15 (21.7) | |
| Ex-smoker | 5 (83.3) | 1 (16.7) | |
| CHA₂DS₂-VASc score | 1 (0-7) | 2 (0-7) | 0.180 |
| **Clinical features** | | | |
| Pain to baloon time (min) | 200.7 ± 165.6 | 274.6 ± 240.7 | 0.077 |
| Door to baloon time (min) | 81.9 ± 68.8 | 77.3 ± 54 | 0.757 |
| ECG-ST elevation (mm) | 3 (1-8) | 3.5 (1-8) | 0.171 |
| Systolic blood pressure (mmHg) | 110 (90-160) | 110 (70-180) | 0.769 |
| Diastolic blood pressure (mmHg) | 70 (40-100) | 70 (50-100) | 0.553 |
| Heart rate (BPM) | 78 (52-120) | 96 (66-128) | 0.001 |
| KILLIP Class (n%) | | | <0.001 |
| 1 | 84 (84) | 16 (16) | |
| 2 | 3 (33.3) | 5 (66.7) | |
| 3 | 0 (0) | 4 (100) | |
| **Laboratory features** | | | |
| Hemoglobin (mg/dL) | 14.6 ± 2 | 14.5 ± 2.1 | 0.885 |
| Platelet count (10³/L) | 266.1 ± 67.9 | 276.9 ± 68.1 | 0.502 |
| Lymphocyte (10³/mm³) | 3.1 ± 2.2 | 2.2 ± 1 | 0.055 |
| CK-MB (ng/ml) | 37.5 ± 44.4 | 50.6 ± 64.7 | 0.241 |
| hs-Troponin (ng/ml) | 493.2 ± 1241.2 | 986.4 ± 2003.2 | 0.131 |
| Fasting blood glucose (mg/dL) | 133.3 ± 59.7 | 166.7 ± 98.5 | 0.035 |
| HbA1C | 6.8 ± 1.9 | 7.6 ± 2.6 | 0.087 |
| Triglyceride (mg/dl) | 149.9 ± 73.4 | 140.8 ± 113.7 | 0.632 |
| HDL-c (mg/dl) | 40.6 ± 8.7 | 41.4 ± 12.2 | 0.717 |
| LDL-c (mg/dl) | 116.8 ± 36 | 113 ± 41.1 | 0.647 |
| Total cholesterol (mg/dl) | 182.7 ± 42.9 | 180.5 ± 49.1 | 0.826 |
| TyG index | 8.9 ± 0.6 | 9.2 ± 0.9 | 0.046 |
| **Angiographic and Echocardiographic Features** | | | |
| Culprit Vessel (n%) | | | 0.031 |
| LAD | 53 (69.7) | 23 (30.3) | |
| CX | 9 (90) | 1 (10) | |
| RCA | 25 (92.6) | 2 (7.4) | |
| Lesion type (n%) | | | 0.232 |
| Total | 56 (73.7) | 20 (26.3) | |
| Subtotal | 31 (83.8) | 6 (16.2) | |
| POST-PCI TFG (n%) | | | 0.028 |
| 1 | 2 (40) | 3 (60) | |
| 2 | 27 (69.2) | 12 (30.8) | |
| 3 | 58 (84.1) | 11 (15.9) | |
| POST-PCI cTFC | 27.4 ± 16.3 | 35.5 ± 16.5 | 0.028 |
| Basal LVEF (%) | 44.3 ± 10.4 | 36 ± 8.7 | <0.001 |

BMI: Body mass index, CAD: Coronary artery disease, ECG: Electrocardiography, CK-MB: Creatine kinase-myocardial band, hs-Troponin: High sensitive-troponin, HDL-c: High density lipoprotein cholesterol, LDL-c: Low density lipoprotein cholesterol, , TyG: Triglyserid-Glukoz index, LAD: Left anterior descending artery, Cx: Circumflex artery, RCA: Right coronary artery, PCI: Percutane coronary intervention, TFG: TIMI frame grade, cTFC: Corrected TIMI frame count, LVEF: Left ventricular ejection fraction.

**[OP-78]** THE RELATIONSHIP OF H2FPEF SCORE WITH NOCTURNAL HYPERTENSION AND CLINICAL OUTCOMES IN HYPERTENSIVE PATIENTS

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**Objective:** Patients with nocturnal hypertension (HT) are more likely to develop adverse cardiovascular events and mortality according to a decline in the nocturnal blood pressure as dipper HT or nondipper. Moreover, night-time HT is a common cause of heart failure with preserved ejection fraction (HFpEF) and the H2FPEF risk score has recently been used for the diagnosis of HFpEF. We aimed to evaluate the echocardiographic and laboratory parameters as well as prognosis of the patients diagnosed with dipper or nondipper HT.

**Method:** This retrospective study was conducted with 108 hypertensive patients admitted to the outpatient clinic in the last one year (mean age 56.52 ± 14.9; 52% females, 48% males). Patients were classified into two groups as having dipper HT (n=44) or nondipper HT (n=64). The H2FPEF risk score, a novel 6-item score (scale: 0-9 points) was calculated. The clinical characteristics of the patients, echocardiographic and laboratory parameters, and the common primary clinical outcome consisting of hospitalization in the last 1 and 3 years, previous cerebrovascular evident, congestive HF and mortality were compared between the 2 groups and the association of H2FPEF score with these parameters was evaluated.

**Results:** The H2FPEF score was found to be significantly higher in patients with nondipper HT compared to those with dipper HT (p<0.001). There was a significant positive correlation between the H2FPEF score and night-time systolic blood pressure (r=0.391, p<0.001). In multivariate regression analysis, H2FPEF score was found to be an independent predictor of nondipper HT (OR=2.072, 95% CI 1.302-3.297, p=0.002). According to Cox regression analysis, H2FPEF score remained an independent predictor of primary clinical outcome (HR=1.858, 95% CI 1.129-3.059, p=0.015). The ROC analysis showed that a cutoff value of >2 for H2FPEF risk score predicted primary clinical outcome with 69.2% sensitivity and 82.7% specificity (AUC=0.835, p<0.001), and a cutoff value of >1 for H2FPEF score predicted nondipper HT with 76.2% sensitivity and 65.9% specificity (AUC=0.751, p<0.001) (Figure 1). According to the Kaplan-Meier survival analysis, the survival rate was found to be significantly lower in patients with nondipper HT than in those without (p=0.035; Figure 2).

**Conclusion:** The present study suggests that the H2FPEF score could be associated with night-time hypertension. Moreover, the use of H2FPEF score in clinical practice could be predictive for worse clinical outcomes including hospitalization and mortality in additon to diagnosing HFpPEF in patients with nondipper HT. The addition this risk score to other clinical parameters may provide strong evidence for clinicians to predict cardiovascular morbidity and mortality in hypertensive patients.
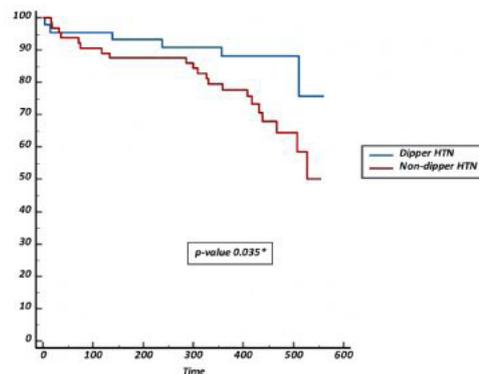
**Keywords:** H2FPEF score, nondipper hypertension, heart failure, mortality

**Figure-1**
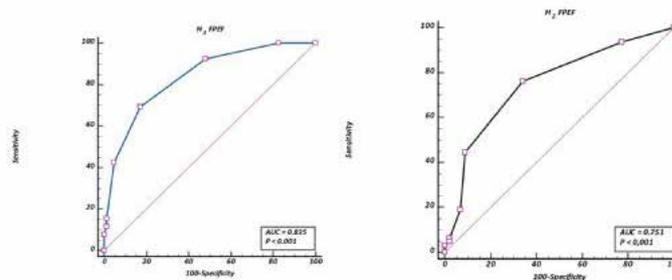


*Roc curve analysis for predicting primary clinical outcome and nondipper hypertension by H2FPEF score*

**Figure-2**



*Kaplan-Meier survival analysis according to night-time hypertension*

**[OP-79]** COMPARISON OF THE EFFECTS OF LONG-TERM HEMODIALYSIS AND PERITONEAL DIALYSIS MODALITIES ON LEFT VENTRICULAR FUNCTIONS

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**Introduction and Objectives:** Hemodialysis (HD) and continuous ambulatory peritoneal dialysis (CAPD) affect left ventricular hemodynamics. This study compared the effect of two treatment modalities, CAPD and HD, on left ventricular systolic and diastolic functions in maintenance dialysis patients.

**Materials-Methods:** A total of 47 patients (24 CAPD and 23 HD) undergoing long-term dialysis were included in the study. Left ventricular functions, left ventricular hypertrophy and left ventricular geometry were evaluated by echocardiography.

**Results:** The mean age, body mass index, Kt/V values, presence of residual urine, leukocytes, neutrophils, platelets, serum glucose, calcium and LDL cholesterol values were significantly higher in the CAPD group compared to the HD group. Serum albumin, glucose and triglyceride glucose index values were significantly lower in the CAPD group. Left ventricular end-diastolic and end-systolic diameters, septum thicknesses, posterior wall thicknesses, relative wall thicknesses, left atrium diameter, left atrial volume index and left ventricular ejection fraction, transmitral septal S, E, and A waves did not differ between the two groups. Left ventricular muscle mass, mass index, E/e' ratios, lateral A waves, and global longitudinal strain were significantly higher in the CAPD group. In contrast, lateral S and E waves were lower than the HD group. The rates of diastolic dysfunction (66.7% vs 26.1%) and left ventricular hypertrophy (91.7% vs 60.9%) were higher in the CAPD group than in the HD group. While eccentric hypertrophy was not detected in both group, concentric hypertrophy (91.7% vs 60.9%) in the CAPD group and concentric remodelling (8.3% vs 30.4%) were more common in the HD group than in the other group.

**Conclusions:** Our study showed that left ventricular hypertrophy and diastolic dysfunction were more common in CAPD patients receiving long-term dialysis treatment compared to HD patients.

**Keywords:** chronic kidney disease, hemodialysis, peritoneal dialysis, left ventricular diastolic function, left ventricular hypertrophy

**[OP-80]  LONG TERM COMPARISON OF THE EFFECT OF RIGHT VENTRICULAR APICAL OR SEPTAL PACING ON THE RIGHT VENTRICULAR AND LEFT VENTRICULAR FUNCTIONS**

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**Background:** Right ventricular (RV) apical pacing deteriorates left ventricular (LV) function. RV septal pacing may better preserves ventricular performance. Effects of apical pacing on right ventricular functions are not systematically studied. Our aim was to assess whether long-term RV septal pacing is superior to RV apical pacing regarding right ventricular RV functions and left ventricle LV volumes and ejection fraction (EF)

**Methods:** Thirty patients (mean age 66.9 ± 16.2 years) included to the study. Indications of pacemaker implantations were in seventeen patients (55 %) with atrioventricular (AV) block, seven patient (24%) with sick sinus syndrome, six patients (21%) with sinus arrest. DDDR pacemakers were implanted to twentyseven (90%) patients, VDD mode pacemakers were implanted to the remaining 3 (10%) patients. The ventricular electrode was placed either at the apex or at the septum, in a randomized sequence. We measured LV volumes, EF, and LV dyssynchrony, right ventricular function and myocardial performance index (by tissue Doppler imaging) prior to the pacemaker implantation and first week and sixth month after pacemaker implantation (Table1).

**Results:** Septal pacing preserved both right and left ventricular functions (P <0.05) (Figure 1). In apically paced group comparison of the ecocardigrapic parameters at baseline and at one week showed no statistically significant difference except the LVIVRT which was increased from 105,5±29 ms to 112,21±27,1 ms (p=0.024) (Figure 2). In RVAP group at the sixth month follow up LVEF decreased from 0,51±0,06 % to 0,48±0,05 % (p=0.002), RVEF decreased from 0,49±0,12% to 0,41±0,06 (p=0,017), and TAPSE decreased from 2,37±0,39 cm to 2,00±0,31 cm (p=0.001). LVIVRT increased from 105,5±29 ms to 122,9±35,2 ms (p <0.05) and LVTEİ increased from 0,69±0,17 to 0,84±0,22 (p<0.05) (Figure 2).

**Conclusions:** In patients with permenant pacemakers, RV septal pacing represents an attractive alternative, since it preserves better and may even improve LV and RV diastolic and systolic functions.

**Keywords:** Apical pacing, Septal pacing, Ventricular functions

### Figure 1

| | Preimplant | 1. week | 6. monthy | p value |
|---|---|---|---|---|
| LVEDV(ml) | 108,84 ± 43 | 109,06 ± 42,6 | 119,66 ± 48,3 | NS |
| LVESV (ml) | 51,44 ± 22,3 | 51,86 ± 22,3 | 55,26 ± 26,3 | NS |
| LVEF (%) | 0,53 ± 0,06 | 0,52 ± 0,05 | 0,54 ± 0,05 | NS |
| LVIVCT(ms) | 90 ± 29 | 85,53 ± 22,5 | 77,6 ± 31,7 | NS |
| LVET (ms) | 282 ± 67,5 | 270 ± 44,3 | 263,3 ± 30 | NS |
| LVIVRT(ms) | 109,8 ± 20,9 | 109,33 ± 18,2 | 112,46 ± 26,1 | NS |
| LVTEİ | 0,73 ± 0,14 | 0,72 ± 0,1 | 0,72 ± 0,15 | NS |
| MVAT (ms) | 80,93 ± 20,3 | 84,4 ± 12,28 | 71,33 ± 9,5 | NS |
| MVDT (ms) | 250,13 ± 66,19 | 230 ± 42,6 | 177,06 ± 26,17 | NS |
| RVEDV (ml) | 41,4 ± 15 | 41,13 ± 15,5 | 50,66 ± 18 | NS |
| RVESV (ml) | 22,48 ± 10,33 | 22,6 ± 9,6 | 22,73 ± 12,8 | NS |
| RVEF (%) | 0,46 ± 0,14 | 0,45 ± 0,09 | 0,46 ± 0,12 | NS |
| RVIVCT(ms) | 87,73 ± 22,3 | 83,2 ± 20,4 | 69,46 ± 25 | NS |
| RVET (ms) | 266,33 ± 61,5 | 262,13 ± 62,6 | 278,86 ± 50,6 | NS |
| RVIVRT(ms) | 91,73 ± 30,9 | 87,66 ± 30 | 58,26 ± 22,8 | NS |
| RVTEİ | 0,59 ± 0,16 | 0,67 ± 0,16 | 0,57 ± 0,13 | NS |
| TVAT (ms) | 107,93 ± 37,5 | 89,13 ± 16,3 | 77,6 ± 9,2 | NS |
| TVDT (ms) | 247,4 ± 73,2 | 220 ± 54 | 164,26 ± 36 | NS |
| TAPSE (cm) | 2,3 | 2,23 | 2,26 | NS |

*Echocardiographic paremeters of septal pacing group before implantation and at first week and sixth month after pacemaker implantation.*

### Figure 2

| | Preimplant | 1. week | 6. month | p value |
|---|---|---|---|---|
| LVEDV (ml) | 107,5 ± 25,2 | 102,35 ± 23 | 108,35 ± 36,2 | NS |
| LVESV (ml) | 52,5 ± 17,1 | 50,78 ± 15,7 | 56,3 ± 22 | NS |
| LVEF (%) | 0,51 ± 0,06 | 0,50 ± 0,07 | 0,48 ± 0,05 | 0,002 (6. month) |
| LVIVCT(ms) | 100 ± 49 | 98,42 ± 37,74 | 95,28 ± 27,42 | NS |
| LVET (ms) | 296 ± 51,5 | 291 ± 44,9 | 263,42 ± 42,2 | NS |
| LVIVRT (ms) | 105,5 ± 29 | 112,21 ± 27,1 | 122,92 ± 35,2 | 0,024 (1. week) 0,05 (6. month) |
| LVTEİ | 0,69 ± 0,17 | 0,72 ± 0,14 | 0,84 ± 0,22 | 0,05 (6. month) |
| MVAT (ms) | 80,42 ± 27,7 | 83 ± 22,46 | 84,76 ± 21,39 | NS |
| MVDT (ms) | 161,85 ± 65,8 | 175,6 ± 1 46,5 | 169,23 ± 49,11 | NS |
| RVEDV (ml) | 45,7 ± 25,5 | 42,21 ± 20,6 | 40 10,16 | NS |
| RVESV (ml) | 23,85 ± 16,95 | 22,64 ± 12,97 | 22,92 ± 4,9 | NS |
| RVEF (%) | 0,49 ± 0,12 | 0,47 ± 0,1 | 0,41 ± 0,06 | 0,017 (6. month) |
| RVIVCT(ms) | 82,21 ± 42,2 | 79,9 ± 40,9 | 79,64 ± 29,7 | NS |
| RVET (ms) | 302,21 ± 57 | 296,14 ± 51,4 | 267,14 ± 64,7 | NS |
| RVIVRT(ms) | 88,9 ± 30,1 | 87,92 ± 30 | 101,5 ± 22,7 | NS |
| RVTEİ | 0,56 ± 0,19 | 0,56 ± 0,18 | 0,7 ± 0,16 | NS |
| TVAT (ms) | 97,5 ± 19,4 | 92,16 ± 17,1 | 83,7 ± 17,5 | NS |
| TVDT (ms) | 183,71 ± 70 | 168 ± 47 | 152,76 ± 40 | NS |
| TAPSE (cm) | 2,37 | 2,2 | 2,0 | 0,001(6.ay) |

*Echocardiographic parameters of apical group before pacemaker implantation and at fist week and sixth month after pacemaker implantation*

**Table 1**

|  | Apical (mean± SD) | Septal(mean±SD) | p value |
|---|---|---|---|
| LVEDV (ml) | 107,5 ± 25,2 | 108,84 ± 43 | NS |
| LVESV (ml) | 52,5 ± 17,1 | 51,44 ± 22,3 | NS |
| LVEF (%) | 0,51 ± 0,06 | 0,53 ± 0,06 | NS |
| LVIVCT (ms) | 100 ± 49 | 90 ± 29 | NS |
| LVET (ms) | 296 ± 51,5 | 282 ± 67,5 | NS |
| LVIVRT (ms) | 105,5 ± 29 | 109,8 ± 20,9 | NS |
| LVTEİ | 0,69 ± 0,17 | 0,73 ± 0,14 | NS |
| MVAT (ms) | 80,42 ± 27,7 | 89,93 ± 20,3 | NS |
| MVDT (ms) | 161,85 ± 65,8 | 250,13 ± 66,19 | NS |
| RVEDV (ml) | 45,7 ± 25,5 | 41,4 ± 15 | NS |
| RVESV (ml) | 23,85 ± 16,95 | 22,48 ± 10,33 | NS |
| RVEF (%) | 0,49 ± 0,12 | 0,46 ± 0,14 | NS |
| RVIVCT (ms) | 82,21 ± 42,2 | 87,73 ± 22,3 | NS |
| RVET(ms) | 302,21 ± 57 | 266,33 ± 61,5 | NS |
| RVIVRT (ms) | 88,9 ± 30,1 | 91,73 ± 30,9 | NS |
| RVTEİ | 0,56 ± 0,19 | 0,69 ± 0,16 | NS |
| TVAT(ms) | 97,5 ± 19,4 | 107,93 ± 37,5 | NS |
| TVDT (ms) | 183,71 ± 70 | 247,4 ± 73,2 | NS |
| TAPSE (cm) | 2,37 | 2,3 | NS |

*Echocardiographic parameters of both broups before pacemaker implantation.*

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### [OP-83]  PARKINSON'S DISEASE AND TPEAK – TEND INTERVAL

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**Objective:** Parkinson's disease is a neurodegenerative disease characterized by autonomic nervous system dysfunction with motor and non-motor symptoms. Clinical symptoms of cardiovascular autonomic dysfunction include orthostatic hypotension, postprandial hypotension, nocturnal supine hypertension, impaired baroreflexes and diminished heart rate variability. There are also some data suggesting that PD might predispose patients to heart failure and sudden cardiac death. The Tpeak – Tend (Tp-e) interval, an electrocardiographic marker reflecting transmural dispersion of repolarization, has been used to predict ventricular tachycardia/fibrillation (VT/VF) and sudden cardiac death (SCD) in different clinical settings. The purpose of this study was investigate to Tp-e interval in patients with Parkinson's disease.

**Methods:** Patients with the diagnosis of PD according to current MDS criteria and an available good quality standard ECG were retrospectively included in the study. A total of 24 patients with PD and 25 healthy controls were included in this research. Patients with electrolyte disorder, bundle branch block, coronary artery disease, heart failure, thyroid disease, and chronic kidney disease were excluded from the study. A 12-lead ECG was taken from all patients. ECG was taken with an amplitude of 10 mm/mV and a speed of 25 mm/s. Demographic and clinical parameters of the patients are shown in Table 1. ECG parameters were measured manually. The Tp-e interval was measured as the time between the peak of the T wave and the point where the T wave came to the isoelectric line (Figure 1). Tp-e interval was measured in lead V6. When measurement could not be made in lead V6, Tp-e interval was measured in lead V5 (Figure 1).

**Results:** In our study, systolic and diastolic blood pressures were found to be significantly lower in Parkinson's patients compared to the control group. No difference was found in terms of other clinical features and laboratory parameters (Table 1). Systolic and diastolic blood pressure were significantly lower in Parkinson's patients than the control group. However, in terms of electrocardiographic parameters, Tp-e, QT, QTc, QTd, measurements were found to be statistically significantly higher in Parkinson's patients compared to the control group, while the RR interval was found to be significantly lower in Parkinson's patients compared to the control group (Table 1).

**Conclusion:** In this study, we found a significant prolongation of repolarization parameters in Parkinson's patients compared to the healthy control group. Cardioselective factors play an important role in changes in Tp-e and QT parameters in patients with Parkinson's disease. Cardioselective factors are pathological changes in postganglionic sympathetic and intrinsic neurons. Measurement of Tp-e parameters in Parkinson's patients with predominant autonomic symptoms is important in reducing mortality due to arrhythmia. However, larger clinical trials are needed.

**Keywords:** Parkinson's disease, Tp-e, arrhythmia

**Figure 1**
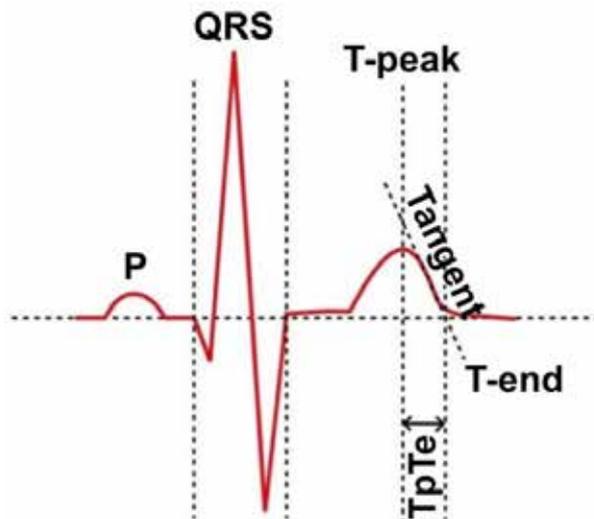


*Calculation of Tpeak-Tend interval*

**Table 1**

| Variables | Parkinson's Disease patients (n=24) | Healthy Control Group (n=25) | p value |
|---|---|---|---|
| Age (Year) | 55.3±8.6 | 48.2±5.7 | > 0.05 |
| Gender (F/M) | 9 / 15 | 11 / 14 | > 0.05 |
| Systolic Blood Pressure (mm-Hg) | 109.3 ± 11.9 | 124.7 ± 13.5 | <0.05 |
| Diastolic Blood Pressure (mm-Hg) | 63.6 ± 8.7 | 79.1 ± 8.6 | <0.05 |
| WBC (103 / µL) | 8.97±3.41 | 7.53±2.81 | > 0.05 |
| Hemoglobin (g/dL) | 13.7 ± 4.2 | 14.1 ± 3.8 | > 0.05 |
| Thrombocyte (103 / µL) | 257.64±79.48 | 239.81±67.93 | > 0.05 |
| Glucose (mg/dL) | 112.3 ± 18.2 | 109.6 ± 11.5 | > 0.05 |
| Urea (mg/dL) | 54.7 ±9.2 | 49.2 ± 7.5 | > 0.05 |
| Creatinin (mg/dL) | 1.07±0.51 | 0.92±0.46 | > 0.05 |
| eGFR (ml/minute/1.73m2) | 78.5 ± 10.7 | 75.9 ± 12.7 | > 0.05 |
| Total Cholesterol (mg/dL) | 209.3 ± 36.7 | 219.53 ±32.7 | > 0.05 |
| LDL Cholesterol (mg/dL) | 117.6 ± 13.7 | 129.5 ± 14.5 | > 0.05 |
| HDL Cholesterol (mg/dL) | 39.8 ± 5.4 | 37.1 ± 5.8 | > 0.05 |
| Triglyceride (mg/dL) | 274.8 ± 32.9 | 257.3 ± 35.6 | > 0.05 |
| LVEF (%) | 59.3 ± 7.2 | 57.5 ± 6.4 | > 0.05 |
| RR interval (msn) | 672.36 ± 95.82 | 794.56 ± 81.46 | <0.05 |
| Tpeak – Tend (msn) | 71.43 ± 12.7 | 59.81 ± 10.3 | < 0.05 |
| QT (msn) | 417.8 ± 16.2 | 394 ± 13.5 | <0.05 |
| QT-c (msn) | 437.2 ± 15.9 | 403.7 ± 12.9 | <0.05 |
| QTd (msn) | 55.2 ± 11.7 | 42.8 ± 8.2 | <0.05 |

*Demographic and clinical characteristics of patients*

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ORAL PRESENTATIONS

## [OP-85] VERY RARE CAUSE OF MASSIVE PERICARDIAL EFFUSION: ERDHEIM-CHESTER DISEASE

Dilay Karabulut[1], Mehmet Pişirici[1], Umut Karabulut[1], Güngör Ilayda Bostancı Alp[1], Hasan Ali Sinoplu[1], Fatma Nihan Turhan Çağlar[1], Ibrahim Faruk Aktürk[2], Mehmet Bozkurt[1], Ersan Oflar[1]

[1]Sağlık Bilimleri Üniversitesi Bakırköy Dr. Sadi Konuk Eğitim ve Araştırma Hastanesi
[2]Mehmet Akif Ersoy Göğüs Kalp Ve Damar Cerrahisi Eğitim Ve Araştırma Hastanesi

Erdheim-Chester disease (ECD) is a rare form of non-Langerhans cell histiocytosis. It is characterized by granulomatous infiltration of histiocytes and fibrosis (1). ECD may be a multi-systemic disease which may affect the skeleton, central nervous system, respiratory, cardiovascular, and renal systems, retroperitoneum and skin (2). Pericardial infiltration is the most frequent cardiac manifestation of ECD. Pericardial effusion may lead to cardiac tamponade. This case report presented a rare cause of recurrent massive pericardial effusion.

**Case:** A 61-year-old male patient was referred to our hospital with fatigue, dyspnea, and bilateral peripheric edema. He had a history of hypertension and coronary intervention due to acute coronary syndrome. On physical examination, he had a heart rate of 106 b.p.m, blood pressure of 130/75 mmHg, bilaterally peripheral edema and decreased breath sounds at the base of the lung. The investigations performed at the hospital were; a 12-lead ECG that showed sinus tachycardia, laboratory results were as follows at the admission: ure:47.3 mg/dl, creatinin:1.6 mg/dL, CRP:177 mg/dl, total protein:5,7 mg/dl,albümin:2.6 mg/dl, total, Hb:11,1 g/dl, WBC:14.5 X103/uL, platelet:6945 X103/uL.

TTE revealed severe pericardial effusion with normal ejection fraction. There was no serious valve pathology. (figure 1)Contrast-enhanced Thoraco-abdominal CT showed a 3,5 cm massive pericardial effusion and mild pleural effusion. Also, abdominal paraaortic lymphadenopathy and renal edema were detected with an increase in both renal and perirenal density.

The patient was consulted by internal medicine hematology and oncology for the etiology of effusion. It is recommended to perform a true-cut biopsy from lymphadenopathy and also F-FDG PET-scanning.

The pathology report of the biopsy material showed non-Langerhans cell histiocytosis, and findings were comparable with Erdheim-Chester disease.

PET showed a maximum of 2.5 cm pleural and 4 cm (at the right atrium neighborhood) pericardial effusion in the mediastinum section. Furthermore, mesenteric, retroperitoneal, and perinephric large lipid accumulation "hairy kidney" (specific for the disease) was found. (Figure 2).

Firstly IV furosemide inf and albumin were given for the edema. Since the patient's symptoms did not improve, it was decided to perform pericardiocentesis.A total of 3,5 lt pericardial fluid was drained within two days. Colchicum and enoxaparin were added to the routine treatment. The patient was transferred to the hematology department for treatment. Peg-interferon alfa-2a 135 mcq sc and p.o prednisolone 60 mg once daily were started. After 3 months the patient's symptoms, especially fatigue and dyspnea were relieved. CRP levels were reduced. Control echo showed no pericardial effusion

In conclusion, ECD is a rare multisystem disease that frequently involves cardiothoracic structures. Clinical suspicion play a crucial role in the management of this complex patient cohort.

**Keywords:** Erdheim-Chester Disease, pericardial effusion, non-Langerhans cell histiocytosis

**figure 2**



PET scanning showed a maximum of 2.5 cm pleural and 4 cm (at the right atrium neighborhood) pericardial effusion in the mediastinum section. Furthermore, mesenteric, retroperitoneal, and perinephric large lipid accumulation "hairy kidney" (specific for the disease) was found.

**figure1**



Transthoracic echocardiography revealed severe pericardial effusion with normal ejection fraction.

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**[OP-86]**   **ISCHEMIC STROKE DUE TO PROSTHETIC MITRAL VALVE THROMBOSIS DURING PREGNANCY**

Zeynep Yapan Emren, Ahmet Erseçgin, Saadet Aydın Avunduk

*Izmir Bakırçay University Çiğli Training and Research Hospital*

A 30-year-old, 14-week pregnant patient presented to the emergency department with speech disorder and left-sided weakness. She had a history of mitral prosthetic valve replacement operation 5 years ago. In her physical examination, she had dyspnea and tachycardia, limited cooperation, aphasic speech, facial asymmetry, and left hemiplegia. Electrocardiography showed sinus tachycardia with heart rate was 130/min. Warfarin treatment was stopped and changed with low molecular weight heparin (Enoxaparin) 6000 Units 2x1 for 10 weeks when she was tested pregnant. Brain diffusion magnetic resonance imaging revealed acute diffusion restriction in the vicinity of the right lateral ventricle. Since she was not well enough to decide treatment options, her relatives did not accept the brain computed tomography angiography due to pregnancy. The patient was admitted to the General Intensive Care Unit with the diagnosis of ischemic stroke, and we were consulted about dyspnea. Transthoracic echocardiography demonstrated the peak gradient of the prosthetic mitral valve was:38 mmHg, and the mean gradient was 24 mmHg. Due to insufficient echogenicity, bedside transesophageal echocardiography was planned and there was 12x10 mm thrombus on mitral prosthetic valve and immobile leaflet were detected on the ventricular side. Mitral prosthetic valve was considered as stucked and dysfunctional. The patient was taken to the catheterization laboratory unit and the abdominal area was covered with protective equipment including lead sheath, and the valve dysfunction was also demonstrated under the scope. Fluoroscopy showed that one of the leaflets was immobile. In the neurological evaluation, thrombolytic treatment was considered contraindicated since 4 hours had passed since the beginning of ischemic stroke. Fetal heartbeat was found in fetal ultrasonography. As a result of the evaluation of the heart team and neurology-gynecology clinics, emergency re-do mitral valve replacement operation was planned. Subsequently, the patient underwent Re-Do mitral valve replacement. In the follow-up, fetal heart rate was not present. After extubating, the patient underwent fetal curettage operation. A physical therapy and rehabilitation program was initiated for her hemiplegic condition. Mitral prosthetic valve functions were normal in the control transthoracic echocardiography after the operation. The patient was transferred to the neurology clinic to monitor the neurologic clinical status.

**Keywords:** Ischemic stroke, prosthetic mitral valve, pregnancy

**Figure**
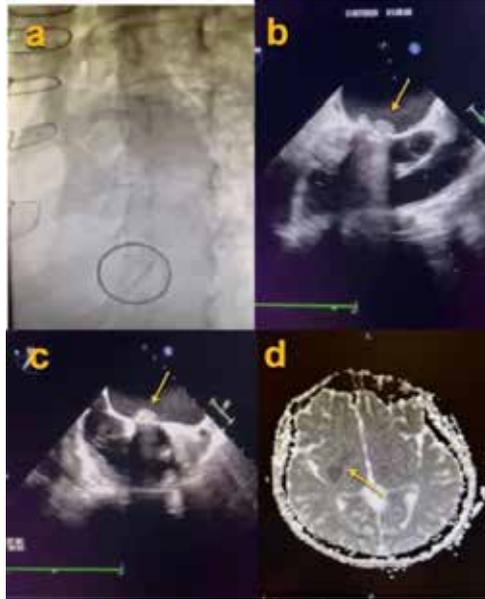


*One of the leaflet was immobile on floroscopy (a). Transesophageal echocardiography (TEE) revealed thrombus on prosthesis mitral valve (b). Another TEE image showed thrombus on prosthesis mitral valve (c). Brain imaging demosntrated cortical infarct in the right ventricle (d).*

**[OP-88]    TPEAK–TEND INTERVAL AND ADVERSE CARDIOVASCULAR OUTCOMES IN NSTEMI PATIENTS**

Ufuk Sadık Ceylan

*Siyami Ersek Thoracic and Cardiovascular Surgery Training and Research Hospital, Department of Cardiology, Istanbul*

**Background:** NSTEMI patients are at risk of adverse cardiovascular outcomes. Tpeak–Tend (Tp-Te) interval, an electrocardiographic marker of repolarization heterogeneity, has been associated with increased risk of arrhythmic events. However, the prognostic value of Tp-Te interval in NSTEMI patients is not well established.

**Objectives:** This study aims to investigate the association between Tp-Te interval and adverse cardiovascular outcomes in NSTEMI patients.

**Methods:** This retrospective study included NSTEMI patients admitted to the cardiology department of Siyami Ersek Hospital between January 1, 2020, and December 31, 2020. The inclusion criteria was patients aged 18 years or older who met the diagnostic criteria for NSTEMI. Patients who met any of the following exclusion criteria were not enrolled: previous myocardial infarction, history of ventricular arrhythmia or syncope, severe valvular heart disease, end-stage renal disease, severe hepatic disease, cancer, and pregnancy. Tp-Te interval was measured from standard 12-lead electrocardiograms obtained at baseline. Clinical and demographic data were collected, including age, sex, cardiovascular risk factors, medical history, and laboratory values. Patients divided into three groups according to the Tp-Te intervals.

**Results:** A total of consecutive 234 patients with NSTEMI was included in the study. The mean age 62±12 years and %36 patients were females. The mean Tp-Te interval was 83.9±20.4 ms. Group-1 Tp-Te interval was 44.57-73.90 ms;. Group-2 Tp-Te interval was 74.29-89.52 ms; Group-3 Tp-Te interval was 89.90-210.29 ms. No statistical significance was found between the three groups in terms of age, gender, comorbidities, and laboratory values (p>0.05). Values were shown in the table. No new arrhythmia in the form of AF, SVT or VT/VF was observed in any of the patients during hospitalization. In addition, there were no statistical significant difference between three groups in terms of early (p=0.576) and in-hospital mortality (p=0.320).

**Conclusion:** In our study, the effect of the Tp-Te interval on early and in-hospital mortality of NSTEMI patients could not be demonstrated. In order to clearly understand the effect of the Tp-Te interval on adverse cardiovascular outcomes, studies with larger sample sizes are needed.

**Keywords:** Tpeak-Tend interval, cardiovascular disease, all-cause mortality

**Tablo1:** Comparison of clinical and demographic characteristics and adverse cardiovascular outcomes of groups separated according to Tp-Te intervals

| Variables | Group-1 | Group-2 | Group-3 | P value |
|---|---|---|---|---|
| Age (years) | 64.3±13.2 | 61.7±12.3 | 62.4±12.8 | 0.41 |
| Male, n(%) | 44 (%56.4) | 51 (64.6) | 53 (68.8%) | 0.26 |
| HT, n(%) | 64 (%82.1) | 53 (%67.1) | 52 (%67.5) | 0.06 |
| DM, n(%) | 31 (%39.7) | 34 (%43) | 30 (%39) | 0.85 |
| HL, n(%) | 18 (%23.1) | 15 (%19) | 15 (%19.5) | 0.78 |
| Smoker, n(%) | 18 (%23.1) | 20 (%25.3) | 20 (%26) | 0.56 |
| Family history, n (%) | 9 (%11.5) | 17 (%21.5) | 16 (%20.8) | 0.19 |
| Coronary artery disease, n(%) | 38 (%48.7) | 37 (%46.8) | 35 (%45.5) | 0.92 |
| CVA, n(%) | 7 (%9) | 2 (%2.5) | 8 (%10.4) | 0.27 |
| PAD, n(%) | 3 (%3.8) | 5 (%6.3) | 0 | 0.09 |
| Chronic renal failure, n(%) | 8 (%10.3) | 9 (%8.8) | 6 (%7.8) | 0.91 |
| QRS duration, ms | 86±22 | 87±18 | 92±19 | 0.10 |
| RBBB, n(%) | 4(%5.1) | 3 (%3.8) | 7 (%9.1) | 0.35 |
| LBBB, n(%) | 4 (%5.1) | 4 (%5.1) | 4 (%5.4) | 0.99 |
| Systolic BP (mmHg) | 132.5±24.4 | 134.9±22.1 | 134.5±21.4 | 0.78 |
| NSR | 66(%84.6) | 73 (%92.4) | 69 (%89.6) | 0.29 |
| AF | 8 (%10.3) | 5 (%6.3) | 5(%6.5) | 0.58 |
| BUN | 22.2±14.1 | 21.2±10.6 | 19.6±8.4 | 0.36 |
| Creatinine, mg/dL | 1.0±0.6 | 1.1±0.6 | 1.0±0.6 | 0.90 |
| GFR | 74.4±26.4 | 74.1±22.4 | 77.1±24.5 | 0.70 |
| Troponin | 2.9±6.8 | 2.3±4.9 | 3.2±7.1 | 0.68 |
| Hemoglobin | 13.0±2.0 | 13.3±1.7 | 13.5±1.7 | 0.25 |
| Glucose | 153.7±74.6 | 148.8±67.2 | 158.2±72.1 | 0.71 |
| Early mortality | 11 (%14.1) | 8 (%10.1) | 7 (%9.1) | 0.576 |
| In-hospital mortality | 3 (%3.8) | 2 (%2.5) | 2 (%2.6) | 0.320 |

*AF: Atrial Fibrillation, BP: Blood pressure, BUN: Blood Urea Nitrogen, CVA: Cerebrovascular Accident, DM: Diabetes Mellitus, GFR: Glomerular Filtration Rate, HL: Hyperlipidemia, HT: Hypertension, LBBB: Left Bundle Branch Block, NSR: Normal Sinus Rhythm, PAD: Peripheral arterial disease, RBBB: Right Bundle Branch Block*

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## [PP-01] A RARE CAUSE OF SECONDARY HYPERTENSION: NUTCRACKER SYNDROME

Gülay Uzun, Muhammet Raşit Sayın

*SBÜ, Trabzon Ahi Evren GKDC EAH, Trabzon, Türkiye*

**Introduction:** Left renal vein (LRV) entrapment syndrome also known as nutcracker syndrome (NCS) is a vascular anomaly that occurs due to compression of the LRV from outside, causing reduced left renal venous blood flow and thus venous congestion. This may be either asymptomatic or present with various clinical scenarios but is rarely associated with hypertension (HT).

**Case:** A 45-year-old female patient without a history of HT presented with intermittent high blood pressure readings and headache for the last 1 year. Physical examination showed blood pressure readings of 150/90 mmHg in both arms and a pulse rate of 80 bpm. The patient denied taking any herbal product, licorice or any regular medication, nor she had episodes of diarrhea and flushing. Physical examination of other systems was normal. Transthoracic echocardiographic examination revealed no pathological condition except for left ventricular diastolic dysfunction. Routine biochemistry, complete blood count, and thyroid function tests were within normal limits. Urinalysis was normal. Renal Doppler USG showed that the LRV was compressed between the superior mesenteric artery and abdominal aorta. In computerized tomography angiogram, the LRV was compressed between the superomedial mesenteric artery and the aorta, with its narrowest segment having a diameter of 2.2 cm (Figure 1). Immediately proximal to that point, the renal vein was dilated, and had a diameter of 13 mm. Additionally, there was dilation in the left gonadal vein. The patient was diagnosed with NCS. Target blood pressure could not be achieved by lifestyle modifications. She was started benidipine 8 mg once per day. At clinical follow-up her blood pressure was regulated, and no additional problem was observed.

**Discussion:** LRV entrapment syndrome is characterized by external anatomic compression of the renal vein causing marked dilation of the hilar portion and narrowing of the para-aortic portion of the latter, which results in altered flow dynamics in the inferior vena cava. LRV is usually entrapped anteriorly, between the superior mesenteric artery and the aorta, or less commonly posteriorly, between the aorta and the vertebral column. The major clinical signs and symptoms of NCS include mild hematuria, orthostatic proteinuria, flank/abdominal pain, varicocele, and pelvic congestion syndrome. The syndrome does not include HT as a hallmark sign, which has been reported only rarely. The way a patient with the condition presents and the degree of left renal venous hypertension usually dictate the management principles. While conservative management is usually employed for mild cases, decompressing the LRV is the main aim in severe cases presented with persistent hematuria, severe pain, or pelvic congestion syndrome. Satisfactory results have been attained by a variety of treatment modalities including surgical techniques, even renal autotransplantation as well as endovascular stenting to relieve compression.

**Keywords:** Hypertension, Nutcracker Syndrome, Left Renal Vein

### Figure 1
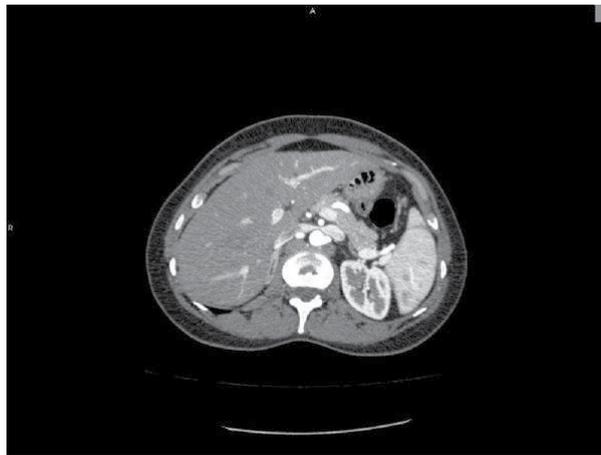
**[PP-02]** MALIGNANT ARRHYTHMIA DUE TO TESTICULAR FEMINIZATION IN AN ADULT

Kübra Korkmaz, Gözde Cansu Yılmaz, Selen Cansu Altun, Türkan Seda Tan

*Ankara Üniversitesi, Kardiyoloji Anabilim Dalı, Ankara*

**Introduction:** Congenital adrenal hyperplasia is a disease caused by the deficiency of several enzymes in the colesterol syntesis pathway and presents with various clinical status. 17 alpha hydroxylase enzyme deficiency is one of these enzymes and causes testicular feminization, hyperkalemia, electrolyte disorders and acidosis in female sex. On the other hand, ventricular tachycardia can occur due to various reasons such as electrolyte disturbances. There are a few cases about newborns with congenital adrenal hyperplasia were reported with ventricular tachycardia and Wolf Parkinson White. According to our knowledge, no adult patient with congenital adrenal hyperplasia arrhythmia has been reported. We present a patient which had congenital adrenal hyperplasia disease with clinically significant beta-blocker-resistant ventricular extrasystoles.

**Case Report:** A 34-year-old female patient with congenital adrenal hyperplasia, 17 alpha hydroxylase deficiency, secondary resistant hypertension, osteoporosis, migraine was consulted during her hospitalization to the endocrinology ward for blood pressure regulation and zolendronic acid treatment. In order to control the blood pressure, the adrenal glands were removed bilaterally and the patient was found to be 46 XY in the genetic examination. The patient was under propronolol 40 mg 2*0.5 treatment due to the detection of 15 Ventricular-pairs and 1 ventricular tachycardia attack, although 1000 ves were detected in the 24-hour- holter performed one year ago due to palpitation. In the echocardiography performed at that time, wall movements were normal, PAB45mmHg, and 1th degree tricuspit regurgitation was detected. During the follow-up of the patient, blood pressure could be controlled with maximal dose of ACE-I+Ca channel blocker+ Hydrochlorthiazide+ spironolactone. The patient had palpitations again, his electrolytes were found to be normal, and Holter was planned again after frequent VESs were seen in his ECG. The dideral dose of the patient who had 3000 VES (under the propronolol 2*20 mg treatment) was increased to 2*40 mg. After 3 months, cardiology control was recommended.

**Conclusion:** Congenital adrenal hyperplasia predisposes to arrhythmias, especially ventricular arrhythmias, due to acidosis and hyperkalemia. Cases previously reported with malignant arrhythmias such as VT and WPW in the literature are generally newborns within the first month of their life. The case we present is ventricular extrasystole, which is encountered in adulthood, causes VT pair and requires drug dose increase in short-term follow-up. Electrolytes and pH are of great importance in these patients and their control and replacement should be done strictly. Congenital adrenal hyperplasia patients of any age, not just newborns, should be carefully evaluated in terms of arrhythmia and malignant hypertension.

**Keywords:** VT, congenital adrenal hyperplasia, testicular feminisation

### VES from holter

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**[PP-03]  THE FREQUENCY OF ARRHYTHMIA IN PATIENTS WITH PALPITATIONS WHO HAD COVID-19 WITH 24-HOUR HOLTER COMPARED TO THE CONTROL GROUP**

Kübra Korkmaz, Gözde Cansu Yılmaz, Selen Cansu Altun, Cansın Tulunay Kaya

*Ankara Üniversitesi, Kardiyoloji Anabilim Dalı, Ankara*

**Introduction:** COVID-19 affects many systems especially cardiovascular system. Cardiovascular outcomes includes acute coronary syndrome, arrhythmias, myocarditis, cardiogenic shock, sudden cardiac deaths. Overall arrhythmia incidence of %17. Almost all arrhythmias can occur in COVID-19. In this study, we aimed to calculate an arrhythmia incidence, including parameters that have not been studied before, with 24-hour holter results between the COVID-19 survivors and the control group.

**Material and Method:** The participants of the study were selected among the patients who applied to the Cardiology Department between March 2020 and March 2021 with the complaint of palpitation. From patients with 24-hour rhythm holter (approximately 1500 patients) retrospectively, patients who had COVID-19 at any time before holter insertion (n=190) were identified. The same number of patients (n=221) with similar characteristics were taken as the control group.

**Results:** The probability of having AF in the COVID-19 group was found to be 3.2 times higher (%95 CI, 1.002-10.48) than control group. There was no difference in the development of arrhythmia in patients who had COVID-19, when patients with CT involvement and patients without involvement were compared. In addition, there was no difference between having cardiac risk factors in terms of development of arrhythmia in both groups, even when looked at separately. Average rate was lower in serology positive group (p=0.04). Heart rate was lower in those who received favipiravir than those who received plaquenil or favipravir plus plaquenil (p=0.03). Atrial extra systole incidence were higher in those who were taken plaquenil (p=0.48). When multivariate regression analysis was performed, being COVID-19 was an independent indicator of the presence of atrial fibrillation (p=0.05).

**Keywords:** COVID-19, pandemia, arrhythmia, atrial fibrillation, incidence

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### [PP-04]    THE CARDIAC REVERSE MISMATCH PATTERN IS CLINICALLY RELEVANT OR NOT?

Ali Sarıkaya, Ezgi Gökdemir, Jale Mehmedanlı, Ülkü Korkmaz

*Department of Nuclear Medicine, University of Trakya at Edirne, Türkiye*

**İNTRODUCTİON:** F18-FDG PET/CT is valuable functional imaging tool and the only FDA-approved technique for assessing viable myocardium in ischemic cardiomyopathy.It is based on the recognition that resting LV dysfunction may be reversible from myocardial hibernation/stunning, and not necessarily due to irreversible myocardial scar.We report a case highlighting the reverse mismatch pattern and it's clinical impact on PET/CT myocardial viability study performed with standardized protocol of oral glucose loading and İV regular insulin injections in patient with this pattern

**CASE SUMMARY:** A 56 year old man with DM, HL,CAD,CABG (LAD),ischemic cardiomyopathy(EF=49%)was referred for PET/CT myocardial viability testing.2 day protocol rest and stress Tc99m-sestamibi SPECT myocardial perfusion imaging showed severe perfusion defect anterior, anterolateral,lateral and inferolateral segments consistent with large scar and minimal ischemia in the CX and LAD coronary distributions(Figure 1).Patient preparation for viability testing included overnight fasting, followed by oral glucose loading (50 gr) and İV regular insulin as per standardized protocol. Fasting blood sugar was 121 mg/dL.Based on blood sugar levels PO glucose ingestion a total of 2 units of regular insulin were administered before FDG injection.Blood glucose level at time of FDG injection was 115 mg/dL and imaging began at 185 minutes after tracer injection.Acquired images showed poor myocardial FDG uptake at inferoseptal,inferior and anteroseptal segments consistents with non-diagnostic consequences RCA distributions(Figure 2).After examination coronary angiography performed,revealed no pathology in area corresponding to the RCA.2 years later,perfusion scintigraphy performed again with same tracer after the patient developed chest pain and sign of ischemia were detected in area corresponding to RCA

**DİSCUSSİON:** There are evidences suggest that a shift toward fatty acid oxidation may impair myocardial function.As reviewed before, lipid metabolites accumulated in cardiomyocytes has been demonstrated to be associated with systolic and diastolic dysfunction.It was therefore hypothesis that cardiac event rate would be higher in patients with moderate to severe RM.Studies also supports this thesis,for example, Kofoed et al,who reported a major cardiac event after CABG could partly be predicted by extent of left ventricle RM quantified by viability PET assessed 1 month before CABG. Whereas experimental data indicate glucose consumption is reduced in reperfused stunned myocardium.Therefore myocardial stunning can't be ruled out as explanation.If microvascular circulatory disturbance in coronaries supplying areas with reverse pattern, as this patient, isn't intervened, it tends to become ischemic in future

**CONCLUSİON:** Severe or moderate reverse mismatch areas should be taken into consideration because they are messenger of hidden ischemic damage in this region and increased cardiac events in future

**Keywords:** FDG PET/CT, Reverse Mismatch, Hibernation, Stunning

**1**
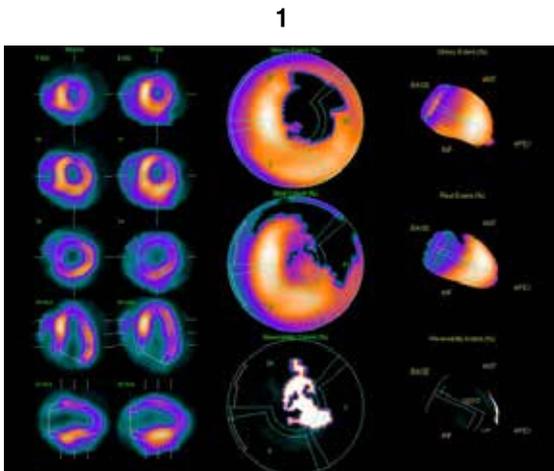


*Two day protocol rest and stress 99mTc-sestamibi SPECT myocardial perfusion imaging showed a severe perfusion defect anterior, anterolateral,lateral and inferolateral segments consistent with large scar and minimal ischemia in the left circumflex and left coronary distributions*
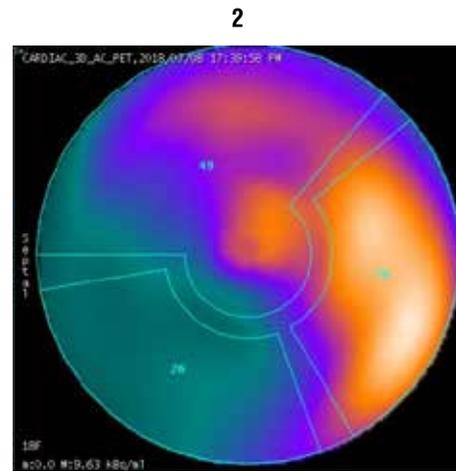
**2**



*Acquired images showed poor myocardial FDG uptake at inferoseptal,inferior and anteroseptal segments consistents with non-diagnostic consequences right coronary distributions*

**[PP-05]   CASE OF ERDHEIM-CHESTER DISEASE PRESENTING WITH SEVERE AORTIC STENOSIS: A CASE REPORT**

Büşra Kuru, Kübra Korkmaz, Türkan Seda Tan Kürklü, Irem Dinçer, Mustafa Kılıçkap, Cagdas Baran

*Ankara University Faculty of Medicine*

**Patient presentation:** A 68-year-old male patient diagnosed with Erdheim-Chester Disease, hypertension and chronic kidney disease was admitted to our hospital with a complaint of dyspnea (NYHA class 3-4), chest pain and fatigue for 1 month. He has lung, bone marrow and retroperitoneal involvement due to Erdheim-Chester disease. Acute phase reactants were high at the time of admission to the hospital. The patient received levofloxacin treatment with the diagnosis of pneumonia. On examination, a systolic murmur was heard over the aortic area and unilateral basilar crackles in right hemithorax.

**Initial work up:** To investigate cardiac involvement, the patient underwent ECG and chest X-ray. Chest x-ray showed right-sided minimal pleural effusion. The transthoracic echocardiogram revealed the Maximum aortic gradient was 56 mmHg, the mean gradient was 36 mmHg, Vmax was 3.77 m/sec and AVA was detected 0,83 cm2. On the other hand, five months ago the maximum gradient was 25 mmHg, and the mean gradient was evaluated at 18 mmHg. Although GLS had been evaluated as -19 in 2019, at this time Global longitudinal strain was evaluated as -13.

**Diagnosis and management:** The rapid increase in aortic valve gradient and rapid decrease in global longitudinal strain were associated with cardiac involvement of Erdheim-Chester disease. Intervention for the aortic valve was recommended because of the symptomatic significant aortic stenosis, and the patient's survival time was over five years.

**Follow-up:** Surgical aortic valve implantation was planned for the patient. Perceval aortic valve was implanted.

**Conclusions:** Erdheim-Chester disease is a multisystem disease that also affects the heart. By affecting all three layers of the heart, it may present with many different clinics and may have a progressive course. Albeit very rarely, Erdheim-Chester disease can lead to aortic stenosis. Therefore, regular strict echocardiographic follow-up is vital for patient survival.
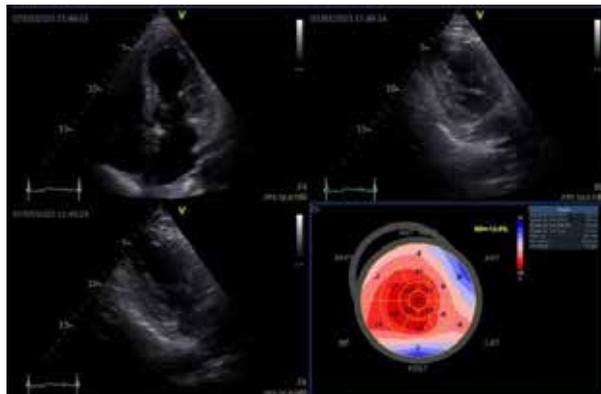
**Keywords:** Aortic Valve Replacement, Aortic Stenosis, Erdheim-Chester Disease

**Fıgure 1**
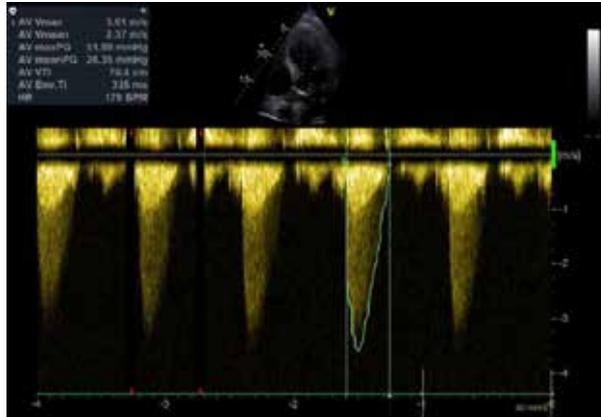


*The transthoracic echocardiogram revealed severe Aortic Stenosis.*

**Fıgure 2**



*Decrease in global longitudinal strain was detected*

**[PP-06]** EVALUATION OF LIPID PROFILE OF STABLE CORONARY ARTERY DISEASE PATIENTS WHO APPLIED OUTPATIENT CLINIC OF A TERTIARY HOSPITAL

Cennet Yildiz, Ersan Oflar

*BAKIRKOY DR SADI KONUK TRAINING AND RESEARCH HOSPITAL*

**Introduction:** Cardiovascular disease continues to be a leading cause of morbidity and mortality worldwide. Atherosclerosis is the main cause of cardiovascular disease which is characterized by chronic inflammation, endothelial dysfunction, intimal lipid deposition, smooth muscle cell proliferation, cell apoptosis and necrosis. Dyslipidemia is among one of the most important risk factors for atherosclerosis. Current guidelines have recommended that low density lipoprotein cholesterol (LDL-C) should be lowered at a goal of <55 mg/dl in patients with atherosclerotic cardiovascular disease (ASCVD). However, targeted LDL-C levels are not achieved in most patients. In the present study we evaluated LDL-C levels of patients with stable coronary artery disease who applied outpatient clinic of a tertiary hospital.

**Material-Methods:** 428 patients diagnosed with stable coronary artery disease who applied to cardiology outpatient clinic were included in this study. Blood samples of the patients were drawn from antecubital vein after an overnight fast. Biochemical parameters of the patients were measured.

**Results:** Mean age of the study population was 65.00±10.30 years, 320 (74.8%) of them were male, 108 (25.2%) of them were female. 152 (35.5) of them had diabetes mellitus, 364 (85%) of them had hypertension, 380 of them had hyperlipidemia. Patients' total cholesterol level was 172.74±51.72 mg/dl, triglyceride level was 155.75±85.51 mg/dl, LDL-C level was 95.39±38.15 mg/dl. All the patients received antilipidemic treatment.

**Conclusion:** Our results show that although all the patients with coronary artery disease received antilipidemic drugs, their LDL-C level was above the desired level., In the last decades, targeted LDL-C concentration for treatment of ASCV has dropped steadily. In terms of clinical benefit, there has been a stepwise decrement in ASCVD risk as LDL-C was reduced. Physicians should be mindful that the absolute risk reduction is a function of both the absolute decrease in LDL-C concentration and the estimated ongoing ASCVD risk. As the major modifiable causal factor for atherosclerosis, lowering LDL-C should be one of the primary target in patients with ASCVD.

**Keywords:** low density lipoprotein cholesterol, coronary artery disease, level

### [PP-07] ESOPHAGEAL RUPTURE PRESENTING WITH ST-SEGMENT ELEVATION

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**Objective:** Esophageal perforation is one of the rare causes of chest pain. It is important because it can be cause death. Its clinical presentation is complex and it may be confused with myocardial infarction (MI), aortic dissection or pulmonary embolism.

**Case:** A 68-year-old male patient was applied to an external center with complaints of epigastric pain, back pain, shortness of breath, vomiting, and weakness that started after eating chicken. He was referred to our hospital with the diagnosis of inferior MI (figure 1).

His blood pressure was 80/50mmHg (there was no significant difference between right and left).His heart rate was 84/min (peripheral pulses were taken equally). The patient was agitated and restless. Significant stenosis wasn't detected in coronary angiography (figure 2).

The transthoracic echocardiography detected pericardial fluid compressing the right ventricle, and tamponade was present. Pericardiocentesis was performed percutaneously. Approximately 100 cc of hemorrhagic fluid was drained. Subsequently, the patient's blood pressure rose and his symptoms regressed.

The results of the blood tests taken while the patient was still in the emergency room were as follows: Troponin: 2103 mg/ dL, mass CK-MB: 20 ng/ mL, creatinin:0.9 mg/dL, amylase: 354 U/L, lipase 19.2 U/L, total bilirubin: 0.57 mg/ dL, direct bilirubin: 0.12 mg/ Dl, hemoglobin: 13.8 g/Dl, WBC: 7.6 x103/mm3.

**Results:** No increase in pericardial fluid was observed in the follow-up echocardiographic evaluations of the patient. No dynamic changes were observed in ECG follow-ups and ST elevation was observed to be persistent. The patient's epigastric pain and back pain were intermittent. The patient was evaluated by gastroenterology and general surgery clinics. The patient with high amylase levels. There was no evidence of embolism or dissection when evaluated with oral, IV contrast-enhanced thorax, and abdominal CT. However, it was stated that there was minimal free air and there was suspicion in terms of esophageal perforation. It was understood that there was an esophageal perforation at approximately 28. hours. Emergency operation was planned, the patient was arrested due to sudden loss of consciousness and respiratory arrest. Despite the advanced life support, no results could be obtained and he died.

**Conclusion:** Esophageal perforation is most commonly seen as a result of endoscopic interventions. Other causes are spontaneous perforation, foreign bodies and trauma. Pain intensifies in the retrosternal region in thoracic esophageal perforations. In abdominal esophageal perforations, the pain intensifies in the epigastrium. Dyspnea and dysphagia are the most common additional findings. The most important factor in early diagnosis is suspicion. Oral contrast radiographs are used for diagnosis. In conclusion esophageal perforation, which is a rare cause, should not be forgotten in cases with ST segment changes without significant stenosis on angiography.

**Keywords:** epigastric pain, esophageal perforation, ST segment elevation

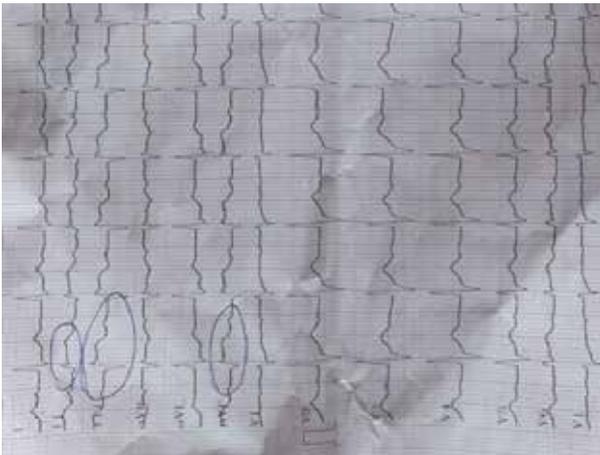**Figure 1:** Inferior myocardial infarction electrocardiogram

**Figure 2:** Significant stenosis wasn't detected in coronary angiography.

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POSTER PRESENTATIONS

**[PP-08]   PERICARDIOCENTESIS WITH THE INTENTION OF THORACENTESIS**

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[2]Dokuz Eylul University Faculty of Medicine, Cardiology Department, Izmir, Turkey

**OBJECTİVE:** A case in which the catheter placed for thoracentesis in the emergency room was sent to the pericardium by mistake will be presented.

**METHOD (CASE):** A 76-year-old female patient has known diseases of hypertension and sebrovascular disease. She was brought to the emergency room with dyspnea, poor general condition and poor oral intake. In her imaging, pleural effusion on the left side and minimal pericardial effusion were observed. Blood and urinalysis were compatible with urinary tract infection. Thoracentesis was planned for the effusion on the left side. A bedside thoracentesis catheter was inserted in the emergency room. Ultrasound guidance was not used during the procedure. After that, patient was admitted to the intensive care unit with the diagnosis of urinary tract infection. Cardiology consultation was requested because the patient's general condition persists, has pleural effusion, and was hypotensive. In echocardiography, ejection fraction %60, major valve pathology was not observed minimal pericardial fluid and echogenicity (thoracentesis catheter?) in the pericardial space. Thoracic CT was performed on the patient. The patient's thoracentesis catheter was observed in the pericardial space and the catheter was removed. In the follow-ups of the patient, septic shock developed and the patient dies on the 3rd day of the hospitalization.

**Result:** In this case; aimed to emphasize that if an interventional procedure is planned for patients, it should be done with ultrasound guidance.

**CONCLUSİON:** While ultrasound increases the success rate in interventional procedures, it also significantly reduces the complication rate. Ultrasound guidance is used in many procedures in cardiology. (Peripheral interventions, pericardiocentesis, central venous interventions, tavi, asd closure, etc.). Physicians should be encouraged to use ultrasound more, and basic ultrasound skills should be increased for all of our physicians.

**Keywords:** thoracentesis, ultrasound, pericardiocentesis

**catheter**
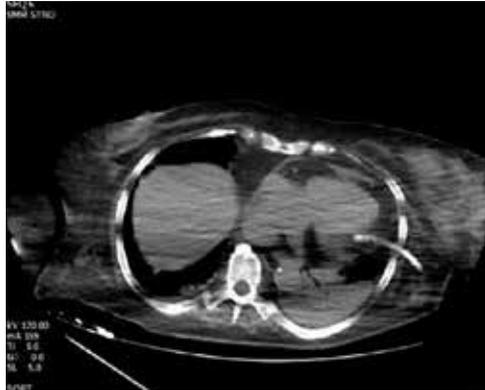


**pleural effusion**
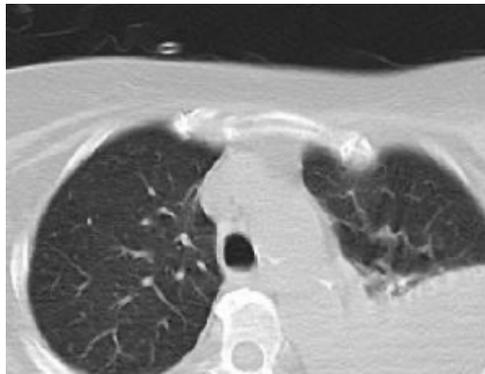


*left sided effusion*

**[PP-09]**   SEVERE AORTIC STENOSIS HIDING BEHIND MICROANGIOPATHIC HEMOLYTIC ANEMIA

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**Introduction:** Microangiopathic hemolytic anemias develop due to pathological formations in arterioles and capillaries that prevent the healthy passage of erythrocytes and cause their fragmentation. Microthrombi, mostly composed of platelets and fibrin, are responsible for this erythrocyte destruction. In this disease group, the diagnosis is mostly made clinically. Disintegration of erythrocytes during the closure of artificial heart valves, damage of erythrocytes in severe aortic coarctation or turbulent blood flow occurring in severe valve stenosis, especially in the aortic valve, are also causes of MAHA.
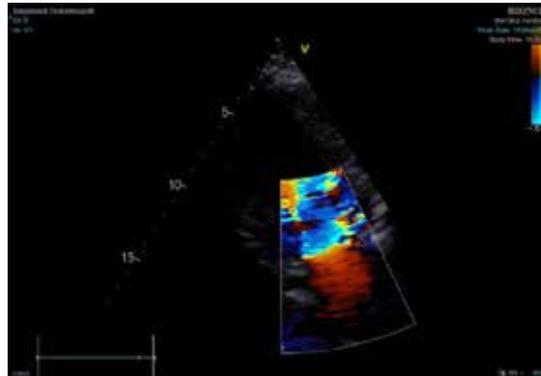
**Case Report:** A 63-year-old male patient was admitted to the nephrology outpatient clinic with complaints of dyspnea, weakness, fatigue and elevated creatinine levels. The patient had a history of AVR and coronary bypass. Cardiac risk factors were hypertension and smoking. On physical examination of the patient, a systolic murmur was heard in the aortic focus. In laboratory parameters, hemoglobin:8.9, MCV:96, LDH:859, haptoglobulin were found to be high. Microangiopathic hemolytic anemia was suspected because the patient had a valve history and a murmur was heard. Echocardiography performed on the patient: "Replaced metallic valve functioning in the aortic position was observed. Third degree AR, thought to be transvalvular and paravalvular, was observed. Mitral and tricuspid valve opening is good. Inferior wall and posterior mid-forward hypokinetic, other left ventricular wall movements were not markedly impaired. EF 45-50%. Myocardium is hypertrophic. The VCI Diameter is 2.2 cm and it collapses less than 50% with respiration." and mechanical aortic valve gradient was found to be 84/56mm-hg, Vmax:4.6m/s. Reoperation was recommended to the patient.

**Discussion:** Our patient had a severe murmur, mechanical valve history, heart failure symptoms, aortic valve and mechanical valve among the risk factors for MAHA, third degree AR with trans and paravalvular leak in the echo, and meeting the criteria for left ventricular hypertrophy led us to the diagnosis of MAHA. We made the diagnosis with the detection of LDH:859, hb:8.9, MCV:96, and haptoglobulin elevation in laboratory parameters, and we referred the patient to surgery because of severe aortic gradient and hemolysis.

Thrombus, thromboembolism and infective endocarditis are the most feared complications in patients who have undergone mechanical valve operation. However, although its incidence has decreased today, MAHA should be kept in mind especially in patients with risk factors, and the necessary laboratory parameters should be requested in patients with mechanical valves, and this possibility should be kept in mind during the examination.
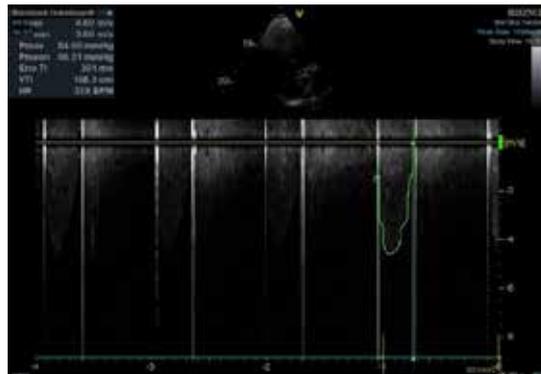
**Keywords:** aortic valve stenosis, MAHA, anemia

**aortic regurgitation**



*aortic regurgitation*

**aortic valve gradient**



*aortic valve gradient*

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**POSTER PRESENTATIONS**

**[PP-10]   RARE AGE, RARE GENDER, RARE SYNDROME, RARE CLINIC: RCA THROMBUS IN A YOUNG LUPUS MALE PATIENT**

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**Introduction:** Systemic lupus erythematosus is a chronic, recurrent, inflammatory, systemic connective tissue disease of unknown etiology in which pathogenic autoantibodies and immune complexes cause tissue damage in many target organs. It usually occurs in the third decade and affects women more in a ratio of 3:1. 20% of SLE patients have lupus anticoagulant. Thrombosis is seen only in 5-20% of lupus anticoagulant positive patients. In this case, we present a 14-year-old male patient who was diagnosed with SLE with the detection of lupus nephritis on biopsy, and who was subsequently negative for lupus anticoagulant, who presented with an inferior MI caused by RC thrombus.

**Case Report:** Our case is a 30-year-old male patient with a known diagnosis of lupus nephritis. He was diagnosed with class-4 lupus nephritis at the age of 14 in the kidney biopsy performed while being examined for proteinuria and anemia at the hospital admission due to sore-swelling in the throat and arthralgia. The patient was given immunosuppressive treatments. Antiphospholipid antibodies were negative at the time of diagnosis. Although the antibodies were negative, the patient had no cardiac risk factors and he had an inferior MI 11 years after diagnosis. Coronary angiography revealed severe thrombus in the proximal RCA RV branch and total occlusion of the distal thin bed. Thrombus aspiration was performed, then glycoprotein 2b/3a antibody was given. In the current investigations of the patient, antiphospholipid antibodies were negative. In the examinations performed on the patient's admission to us, 17 years after the diagnosis and 6 years after the MI, the antiphospholipid antibody was found to be positive for the first time. Left ventricular wall movements were found to be normal in the echocardiography performed on the patient. He was discharged after his medical treatment was arranged.

**Conclusion:** Although SLE mainly prioritizes women, male patients come to the fore in lupus anticoagulant and thrombosis cases. In our case, the patient has an atypical presentation due to both age and gender. Although the patient had MI, the antiphospholipid antibody was found to be negative and became positive years later. In lupus patients, it is necessary to be alert for lupus anticoagulant, especially if there is a cardiac risk factor, regardless of antibody positivity in male gender. It should not be forgotten that antiphospholipid antibodies should be checked at least 2 times with an interval of 6 weeks as recommended.

**Keywords:** thrombus, lupus, antiphospholipid antibodies

**RCA thrombus at coronary angiography**



*RCA thrombus at coronary angiography*

[PP-11]  ASSESSMENT OF REPOLARIZATION PARAMETERS IN PATIENTS WITH MULTIPLE SCLEROSIS

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**Objective:** Multiple sclerosis (MS) is an autoimmune, chronic demyelinating inflammatory disease. MS is one of the most common diseases of the central nervous system. In some studies, abnormalities in autonomic nervous system function have been reported. The most common clinical findings of autonomic nervous system abnormalities in MS are bladder dysfunction, sleep disorders, gastrointestinal and cardiovascular system disorders. Cardiovascular functions are affected in 10-50% of patients with MS. It has been shown that patients with MS have sympathetic and parasympathetic dysfunction. QT prolongation is an important risk factor for torsades de pointes and ventricular fibrillation. The purpose of this study was investigate to repolarization parameters in patients with MS.

**Method:** Patients with the diagnosis of MS and an available good quality standard ECG were retrospectively included in the study. A total of 28 patients with MS and 20 healthy controls were included in this research. Patients with electrolyte disorder, bundle branch block, coronary artery disease, heart failure, thyroid disease, and chronic renal failure were excluded from the study. A 12-lead ECG was taken from all patients. ECG was taken with an amplitude of 10 mm/mV and a speed of 25 mm/s. Demographic and clinical parameters of the patients are shown in Table 1. QT was measured in all leads. The longest QT value was taken in the QTc calculation. QTc was calculated according to Bazett's formula (QTc = QT/√RR).

**Results:** In our study, no difference was found in terms of clinical features and laboratory parameters (Table 1). However, in terms of electrocardiographic parameters, QT, QTc, QTd and QTcd measurements were found to be statistically significantly higher in MS patients compared to the control group, while the RR interval was found to be significantly lower in MS patients compared to the control group (Table 2).

**Conclusion:** Patients with MS may have cardiac involvement without significant cardiac symptoms. In this study we found that, repolarization parameters were significantly higher in MS patients than in the healthy control group. As a result of this study, patients with MS should be followed closely for cardiac arrhythmias, even if they are asymptomatic. However, larger clinical trials are needed.

**Keywords:** Multiple sclerosis, repolarization, arrhythmia

**Table 1**

| Parameters | Multiple sclerosis patients (n=28) | Healthy control group (n=20) | p value |
|---|---|---|---|
| Age (year) | 41.3±6.7 | 39.2±5.1 | > 0.05 |
| Gender (F/M) | 15 / 13 | 12 / 8 | > 0.05 |
| Systolic Blood Pressure (mm-Hg) | 129.3±15.6 | 125.7± 13.9 | > 0.05 |
| Diastolic Blood Pressure (mm-Hg) | 72.7 ± 9.4 | 76.1 ± 8.2 | > 0.05 |
| WBC (103 / µL) | 8.57±2.89 | 7.91±3.35 | > 0.05 |
| Thrombocyte (103 / µL) | 251.72±83.17 | 242.3±74.82 | > 0.05 |
| Glucose (mg/dL) | 107.8 ± 12.6 | 113.4 ± 14.7 | > 0.05 |
| Urea (mg/dL) | 41.06 ±7.35 | 42.41 ± 6.68 | > 0.05 |
| eGFR (ml/minute/1.73m2) | 85.92 ± 19.26 | 87.73 ± 16.74 | > 0.05 |
| Creatinin (mg/dL) | 0.72 ± 0.41 | 0.86 ± 0.28 | > 0.05 |
| LVEF (%) | 57.5 ± 5.9 | 58.3 ± 6.4 | > 0.05 |
| LDL kolesterol (mg/dL) | 124.3 ± 17.4 | 105.9 ± 13.1 | > 0.05 |
| QT (msn) | 417.92 ± 36.2 | 392.57 ± 27.92 | < 0.05 |
| QTd (msn) | 55.1 ± 11.7 | 43.9 ± 8.5 | < 0.05 |
| QTc (msn) | 458.87 ± 25.91 | 423.71 ± 22.57 | < 0.05 |
| QT-cd (msn) | 63.7 ± 12.6 | 52.6 ± 11.9 | < 0.05 |
| RR interval (msn) | 714.37 ± 112.57 | 795.43 ± 94.72 | < 0.05 |

Clinical and laboratory parameters of patients

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POSTER PRESENTATIONS

## [PP-12] IDIOPATIC CONSTRUCTIVE PERICARDITIS

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[2]SAVCILIOGLU, Nil
[3]DUZEN, İrfan Veysel
[4]KAPLAN, Mehmet
[5]KALKAN, Erdem

Constrictive pericarditis is one of the causes of reversible diastolic heart failure. Constrictive pericarditis is an underdiagnosed condition characterized by a rigid pericardium, leading to limitation of cardiac filling with fluid overload and decreased cardiac output.

Tuberculosis remains the most common cause of constrictive pericarditis in developing countries worldwide. Most known other causes are; idiopathic, prior cardiac surgery related, chest radiation and prior acute viral pericarditis. Constrictive pericardium typically; fibrotic, calcified and thickened. However, in various case series, in up to 18% of cases, constrictive pericarditis can be seen with a pericardium of normal thickness.

A 55 year old man, with known diabetes mellitus, coronary artery disease and history of coronary stent in 2019.

On cardiac CT of the patient, diastolic dysfunction and 2x1.5 cm nodular calcification were seen on the left ventricular lateral wall, adjacent to the mitral annulus. In addition, dilatation of the inferior vena cava and dilatation of the hepatitis veins were also observed.

Cardiac computer tomography showed diffuse calcification on all pericardial surfaces and thickening of the pericardium.

Right heart catheterization was recommended with a prediagnosis of constrictive pericarditis.

Right heart catheterization showed PA:53-15-35 mmhg, RV:48- 14 mmhm, RA:11mhg,

The difference between right and left ventricular diastolic pressures was less than 5 mmgh.

A square root sign was observed on the left ventricular pressure tracing and pericardiectomy was recommended.

The diagnosis of constrictive pericarditis is based on suspicion in the light of clinical findings.

Many methods such as chest radiography, ECG, ECO, Computed tomography and Magnetic resonance are used in the diagnosis, but the diagnosis is confirmed by cardiac catheterization.

The patient, who was diagnosed with constrictive pericarditis by catheterization, underwent pericardiectomy. After the surgical intervention, clinical improvement was achieved in our case.

The patient's pathology report resulted as fibrotic tissue with dystrophic calcification.

The patient's tuberculosis, rheumatic and viral markers were negative.

With all these findings, the patient was evaluated as idioaptic constrictive pericarditis.

**Keywords:** Constrictive pericarditis, right heart failure, diastolic heart failure

**Figure-1:**



Cardiac computer tomography, diffuse calcification on all pericardial surfaces

**Figure-2**



A square root sign on the left ventricular pressure tracing

**[PP-16]**　QUANTITATIVE ANALYSIS OF RIGHT CORONARY ARTERY MORPHOLOGY BY DIGITAL SUBSTRACTION ANGIOGRAPHY

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**İntroduction:** The aim of this study was to determine the normal distribution values of length, diameter and angle measurements of the right coronary artery (RCA).

**Methods:** Angiographic images of the right coronary artery of 143 patients were analysed using digital subtraction angiography technique. The RCA images of each patient were divided into three sections (Proximal RCA, Middle RCA, Distal RCA) and length and diameter measurements were made separately for each section. In addition, the angles formed between the posterior descending artery (PD) and posterior lateral artery (PL) of the RCA and the lengths and diameters of the PD and PL branches were measured separately. All measurements were performed according to 2D measurement technique.

**Results:** The RCA length-diameter measurements were 1.75-4.7 mm for proximal RCA, 4.75-4.2 mm for middle RCA, and 7.45-3.5 mm for distal RCA. The mean values of the angles formed between RCA-PL, PL-PD (bifurcation angle), RCA-PD were 144.33±19.22°, 62.67±18.94°, 151.40±19.33°, respectively.

**Conclusion:** Our study provides important epidemiological data on the length-diameter-angle values of the RCA. The presented data will be useful in guiding the success and clinical outcomes of the right coronary artery in both interventional and surgical procedures. It also provides important anatomical data that will contribute to basic medical science.

**Keywords:** Heart, Right coronary artery, Morphometric analysis, Medical imaging, measurements

**[PP-13]** **EFFECTS OF SGLT-2 INHIBITORS ON BLOOD PRESSURE IN DIABETIC PATIENTS WITH HYPERTENSION**

Bahar Arıcan Tarım

*Kartal Dr. Lütfi Kırdar City Hospital, Internal Medicine Department*

**Objectives:** Sodium glucose co-transporter 2 (SGLT-2) inhibitors such as Empagliflozin and Dapagliflozin are commonly used in type-2 diabetes treatment in last few years. In addition to their glucose-lowering mechanism, they also have cardiovascular protective effects especially in heart failure. There also some studies that show their antihypertensive effect via minimal natriuresis, diuresis and possible reductions in sympathetic tone. In our study we aimed to see tthe antihypertensive effect of SGLT-2 inhibitors in hypertensive diabetic patients.

**Materials-Methods:** 37 type-2 diabetic and hypertensive patients with high blood pressures and glucose levels were enrolled into study. Their first blood pressure measurements were taken in their first office visit. Also one week blood pressure follow-up was wanted by patients' own home measurements. Patients with office blood pressure measurements < 140/90 mm/Hg or already using a SGLT-2 inhibitor were excluded. In those uncontrolled diabetics, a SGLT-2 inhibitor, empagliflozin or dapagliflozin, was added to their prior diabetes treatment. Empagliflozin treatment group was named as group-1 and Dapagliflozin treatment group was named as group-2.Patients were said to come to control after 12 weeks with one week home blood pressure measurements (hBPM).

**Results:** There were 20 patients in group-1 and 17 patients in group-2. Mean office systolic blood pressure mearument (sBPM) of group-1 was 152.7mm/Hg and mean diastolic blood pressure measurement (dBPM) was 92.5mm/Hg. Mean office systolic blood pressure mearument (sBPM) of group-2 was 155.9mm/Hg and mean diastolic blood pressure measurement (dBPM) was 93.7 mm/Hg. In their one week hBPM before treatment, in group-1; mean sBPM was 155.0mm/Hg, mean dBPM was 95.0mm/Hg, in group-2; mean sBPM was 160.0mm/Hg, mean dBPM was 95.0 mm/Hg. After 12 weeks follow up with SGLT -2 inhbitors usage, in group-1 mean sBPM was 148.5 mm/Hg and mean dBPM was 90.1mm/Hg, in group-2 mean sBPM was 152.1mm/Hg mean dBPM was 91.6mm/Hg (p<0.001). According to hBPM after treatment, mean sBPM was 150.0mm/Hg and mean dBPM was 90.0mm/Hg in group -1, whereas in group-2 mean sBPM was 155.0mm/Hg and dBPM was 90.0mm/Hg. Decline in blood pressures by home measurements were also statistically meaningful.

**Conclusion:** After 12 weeks treatment with SGLT-2 inhibitors, we observed meaningful decline both in systolic and diastolic blood pressures. In group-1; 2.75 % decline in sBPM and 2.59% decline in dBPM was observed, in group-2; this ratio was 2.49% in sBPM and 2.29% in dBPM. This anti-hypertensive effect was more obvious in group-1 ( empagliflozin) but this difference between the groups were not statistically meaningful. We concluded that, besides being a good choice in diabetes treatment, SGLT-2 inhibitors are also beneficial in hypertensive patients to some extent.

**Keywords:** dapagliflozin, empagliflozin, hypertension, SGLT-2 inhibitors

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POSTER PRESENTATIONS

## [PP-14]   WERNICKE'S APHASIA DUE TO CARDIAC MYXOMA WITH ATRIAL FIBRILLATION

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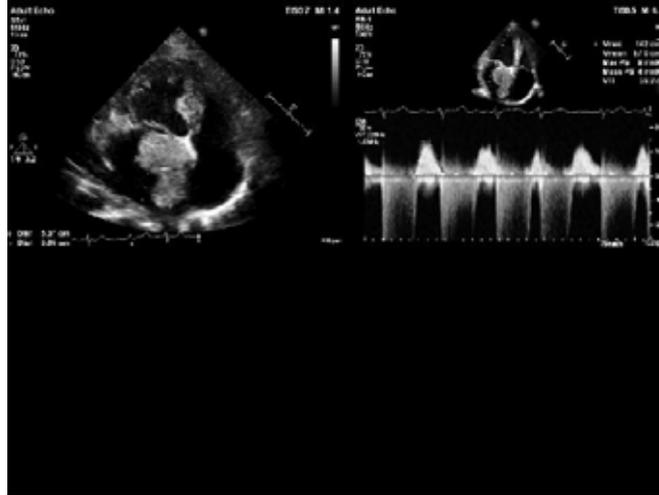[3]Department of Neurology, Antalya Kepez State Hospital

**Introduction:** Cardiac myxomas are the most common primary intracardiac tumors. Although myxomas are histologically benign,t hey are potentially dangerous due to potential risk of systemic and cerebral embolism. Here we report a atrial fibrillation patient who presented with Wernicke's aphasia due to left atrial myxoma origin.

**Case:** A 50-year-old female with no other significant medical history or vascular risk factors admitted to emergency department after an episode of Wernicke's aphasia. The head CT scan was negative for any acute findings. A follow-up diffusion weighted MRI of the brain demonstrated focal diffusion restriction at the subcortical junction in the left posterior parietal region. Her electrocardiogram revealed new-onset atrial fibrillation (Figure 1). An echocardiogram was performed due to concern for the cardioembolic source, which revealed left atrial myxoma mimicking mitral valve stenosis (Figure 2A,2B). Anticoagulation theraphy started and the patient was transferred to a tertiary center for immediate surgical intervention due to the high risk of embolization associated with the condition. The patient subsequently underwent successful surgical excision of the lesion. Microscopic pathology showed typical histological features of a cardiac myxoma with no atypia or malignancy.

**Conclusion:** Cardiac myxomas account for %50 of all primary cardiac tumors. They are more common in the female population, and typically occur between 30 and 60 years of age. Most myxomas originate from the interatrial septum at the fossa ovalis. Myxomas can present with obstructive and constitutional symptoms, electrical disturbances and emboli. The pressence of atrial fibrillation, irregular tumor surface, increased tumor size and increased left atrial diameter is associated with increased risk of embolism in patients with left atrial myxoma. Surgical excision is usually curative. The present patient was discharged home in normal sinüs rhytm one week after surgery.

**Keywords:** Atrial myxoma, Cardioembolic stroke, Wernicke's aphasia

### Figure 1



*Electrocardiography*

### Figure 2



*Ecocardiographic findings*

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**[PP-15]    THE EFFECT OF RIGHT VENTRICULAR SYSTOLIC FUNCTIONS AND PULMONARY ARTERIAL PRESSURE ON CARDIOVASCULAR OUTCOMES IN PATIENTS WITH TYPE 2 DIABETES MELLITUS**

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In the literature, the TAPSE/sPAP ratio < 0.55 mm/mmHg has been expressed as a predictive risk factor for pulmonary hypertension. In addition, the TAPSE/sPAP ratio <= 0.32 mm/mmHg has been reported as a predictive risk marker for all-cause mortality. In this study, we compared patients with Type 2 Diabetes Mellitus with healthy volunteers in terms of cardiovascular outcomes with TAPSE/sPAB ratio.

**Material-Methods:** In this study, diabetic patients were compared with healthy volunteers for the TAPSE/sPAB ratio determined by transthoracic echocardiography. Echocardiographic procedures were performed by 2 different cardiologists blinded to the clinical status of the patients. The independent association between type 2 diabetes mellitus and TAPSE/sBAP ratio was statistically evaluated using IBM Statistics 21.

**Results:** In this study, 37 diabetic patients were compared with 38 healthy controls in terms of echocardiographic parameters (total 75 patients, mean age: $67.1\pm9.5$). 69.3% of the patients were male. BMI values of diabetic patients were slightly elevated ($28.6\pm4.4$ vs $27.3\pm4.6$; p=0.154). Statistically significant decrease in EF (%) values was detected in diabetic patients (p=0.037). TAPSE values also tended to decrease in diabetics compared to non-diabetics (p=0.104). In addition, the estimated mean systolic pulmonary artery pressure values were found to be increased in diabetics (p<0.001). TAPSE/sPAB ratio, which was reported to be predictive of adverse cardiovascular outcomes, was found to be decreased in diabetics compared to non-diabetics (p<0.001).

**Conclusions:** In this study, the TAPSE/sPAB ratio, which can be easily applied in clinical practice, was found to be lower in diabetic patients compared to non-diabetic controls. Accordingly, decreased TAPSE/sPAB ratio values in diabetic patients compared to healthy individuals may be predictive of adverse cardiovascular outcomes.

**Keywords:** TAPSE/sPAB ratio, cardiovascular outcomes, diabetics

**Table-1**

|  | Diabetics (n=37) | Control (n=38) | p value |
|---|---|---|---|
| sPAB (mmHg) | $39.1\pm13.7$ | $27.2\pm6.5$ | <0.001 |
| TAPSE | $14.9\pm2.4$ | $15.9\pm2.6$ | 0.104 |
| EF (%) | $60.2\pm9.4$ | $63.2\pm5.5$ | 0.037 |
| TAPSE/sPAB ratio | $0.42\pm0.2$ | $0.61\pm0.2$ | <0.001 |

*Differences of echocardiographic parameters in diabetic and nondiabetic patients*

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