

# The Anatolian Journal of Cardiology

Anatol J Cardiol • Volume 23 • Issue 3 • March 2020

## Editor-in-Chief

Çetin Erol

## Editor

Mustafa Kılıçkap

## Advisory Board of This Issue

Ramazan Akdemir  
 Servet Altay  
 Bernas Altıntaş  
 Armağan Altun  
 Cem Barçın  
 Asuman Biçer  
 Alp Burak Çatakoğlu  
 Umut Yengi Çelikyurt  
 Muzaffer Değertekin  
 Adem İlkay Diken  
 Hüseyin Ede  
 Tolga Han Efe  
 Ali Elitok  
 Oktay Ergene  
 Ayçan Fahri Erkan  
 Elias Gialafos  
 Hakan Güneş  
 Yılmaz Güneş  
 Hakkı Kaya  
 Cansın Tulunay Kaya  
 Meral Kayıkçıoğlu  
 Barış Kılıçarslan  
 Deniz Kumbasar  
 Guanhua Li  
 Didem Oğuz  
 Abdurrahman Oğuzhan  
 Kaan Okyay  
 Ayhan Olcay  
 Ender Örnek  
 Seçkin Pehlivanoğlu  
 Bahar Pirat  
 Adam Torbicki  
 Abdullah Tunçez  
 Belma Turan  
 Özgül Uçar  
 Serkan Ünü  
 Mehmet Bülent Vatan  
 Kivanç Yalın  
 Dilek Çiçek Yılmaz  
 Uygur Çağdaş Yüksel

## Reviews

Molecular diagnosis methods in familial hypercholesterolemia  
 Valeriu Moldovan et al.; Targu Mures-Romania

New perspectives by imaging modalities for an old illness: Rheumatic mitral stenosis  
 Tuğba Kemaloğlu Öz et al.; Istanbul-Turkey

## Original Investigations

Advanced glycation end products facilitate the proliferation and reduce early apoptosis of cardiac microvascular endothelial cells via PKC $\beta$  signaling pathway: Insight from diabetic cardiomyopathy  
 Yi Luan et al.; Zhejiang-PR. China

The expression of interleukin-25 increases in human coronary artery disease and is associated with the severity of coronary stenosis  
 Yao Xu et al.; Wuhan-China

Snapshot evaluation of acute and chronic heart failure in real-life in Turkey: A follow-up data for mortality  
 Mehmet Birhan Yılmaz et al.; Izmir-Turkey

Rationale and design of the Turkish acute myocardial infarction registry: The TURKMI Study  
 Mustafa Kemal Erol et al.; Istanbul-Turkey

Prevalence and clinical profile of patients with myocardial infarction with non-obstructive coronary arteries in Turkey (MINOCA-TR): A national multi-center, observational study  
 Salih Kılıç et al.; Adana-Turkey

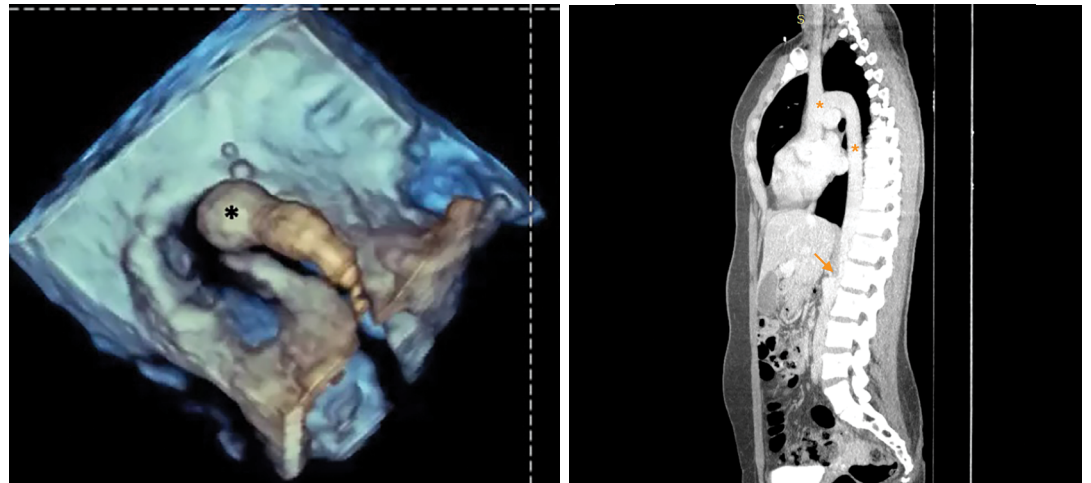
## Case Reports

Closure of residual leakage after the use of hybrid umbrella in umbrella technique: A case report  
 Mingxian Chen et al.; Changsha-China

Successful management of a rare and fatal complication of cardiac catheterization:  
 Abdominal compartment syndrome  
 Ismail Balaban; Istanbul-Turkey

Percutaneous closure of a secundum atrial septal defect through femoral approach in an adult patient with interrupted inferior vena cava and azygos continuation  
 Elnur Alizade et al.; Istanbul-Turkey

Page: E-7



**Editor-in-Chief**Prof. Dr. Çetin Erol, *Ankara, Turkey***Editor**Mustafa Kılıçkap, *Ankara, Turkey***Associate Editors**

Adnan Abacı, *Ankara, Turkey*  
 Rüçhan Akar, *Ankara, Turkey*  
 Bülent Behlül Altunkeser, *Konya, Turkey*  
 Serdal Arslan, *Sivas, Turkey*  
 Ahmet Kaya Bilge, *İstanbul, Turkey*  
 Hakim Çelik, *Şanlıurfa, Turkey*  
 Recep Demirbağ, *Şanlıurfa, Turkey*  
 Ş. Remzi Erdem, *Ankara, Turkey*  
 İlkey Erdoğan, *Ankara, Turkey*  
 Sadi Güleç, *Ankara, Turkey*  
 Ali Gürbüz, *İzmir, Turkey*  
 Serdar Kula, *Ankara, Turkey*

Selma Metintaş, *Eskişehir, Turkey*  
 Kurtuluş Özdemir, *Konya, Turkey*  
 Murat Özeren, *Mersin, Turkey*  
 Leyla Elif Sade, *Ankara, Turkey*  
 Asife Şahinarslan, *Ankara, Turkey*  
 Ahmet Temizhan, *Ankara, Turkey*  
 Ercan Tutar, *Ankara, Turkey*  
 Omaç Tüfekçioğlu, *Ankara, Turkey*  
 F. Ajlan Tükün, *Ankara, Turkey*  
 Taner Ulus, *Eskişehir, Turkey*  
 Aylin Yıldırım, *Ankara, Turkey*  
 Mehmet Birhan Yılmaz, *İzmir, Turkey*

**Editor-in-Chief Consultant**  
 Suna Kıraç, *Lefkoşe, KKTC*

**Senior Consultant in Biostatistics**  
 Kazım Özdamar, *Eskişehir, Turkey*

**Consultant in Biostatistics**  
 Fezan Mutlu, *Eskişehir, Turkey*

**Previous Editor-in-Chief**Bilgin Timuralp, *Eskişehir, Turkey***Editorial Board**

Ramazan Akdemir, *Sakarya, Turkey*  
 Levent Akyürek, *Göteborg, Sweden*  
 Azin Alizadehasl, *Tehran, Iran*  
 Necmi Ata, *Eskişehir, Turkey*  
 Saide Aytekin, *İstanbul, Turkey*  
 Vedat Aytekin, *İstanbul, Turkey*  
 Ljuba Bacharova, *Bratislava, Slovak Republic*  
 Luigi P. Badano, *Udine, Italy*  
 Anzel Bahadır, *Düzce, Turkey*  
 Adrian Baranchuk, *Kingston, Ontario, Canada*  
 Murat Biteker, *Muğla, Turkey*  
 Eugene Braunwald, *Boston, MA, USA*  
 Cahid Civelek, *St. Louis, MO, USA*  
 Ali Emin Denктаş, *Houston, TX, USA*  
 Polychronis Dilaveris, *Athens, Greece*  
 Firat Duru, *Zurich, Switzerland*

Ertuğrul Ercan, *İzmir, Turkey*  
 Okan Erdoğan, *İstanbul, Turkey*  
 Özcan Erel, *Ankara, Turkey*  
 Ali Gholamrezanezhad, *Tehran, Iran*  
 Michael Gibson, *Boston, MA, USA*  
 Orhan Gökbalp, *İzmir, Turkey*  
 Bülent Görenek, *Eskişehir, Turkey*  
 Okan Gülel, *Samsun, Turkey*  
 Sema Güneri, *İzmir, Turkey*  
 Yekta Gürlertop, *Edirne, Turkey*  
 Murat Güvener, *Ankara, Turkey*  
 Cemil İzgi, *London, UK*  
 Diwakar Jain, *Philadelphia, USA*  
 Erdem Kaşıkçioğlu, *İstanbul, Turkey*  
 Cihançir Kaymaz, *İstanbul, Turkey*  
 Mustafa Kılıç, *Denizli, Turkey*

Serdar Küçüköğlü, *İstanbul, Turkey*  
 Peter Macfarlane, *Renfrewshire, Scotland*  
 Robert W. Mahley, *San Francisco, CA, USA*  
 Giuseppe Mancia, *Milan, Italy*  
 G.B. John Mancini, *Vancouver BC, Canada*  
 Anthony De Maria, *San Diego, CA, USA*  
 Pascal Meier, *London, UK*  
 Franz H. Messerli, *New York, USA*  
 Sanem Nalbantgil, *İzmir, Turkey*  
 Navin C. Nanda, *Birmingham, AL, USA*  
 Yılmaz Nişancı, *İstanbul, Turkey*  
 Hakan Oral, *Ann Arbor, MI, USA*  
 Necla Özer, *Ankara, Turkey*  
 Zeki Öngen, *İstanbul, Turkey*  
 Mehmet Özkan, *İstanbul, Turkey*  
 Sotirios N. Prapas, *Athens, Greece*

Fausto J. Pinto, *Lisbon, Portugal*  
 Vedat Sansoy, *İstanbul, Turkey*  
 Raşit Sayın, *Trabzon, Turkey*  
 Mark V. Sherrid, *New York, USA*  
 Horst Sievert, *Frankfurt, Germany*  
 İlke Sipahi, *İstanbul, Turkey*  
 Richard Sutton, *Monaco, Monaco*  
 Ahmet Şaşmaz, *İstanbul, Turkey*  
 S. Lale Tokgözoğlu, *Ankara, Turkey*  
 Murat Tuzcu, *Cleveland, OH, USA*  
 Dilek Ural, *İstanbul, Turkey*  
 Ahmet Ünalır, *Eskişehir, Turkey*  
 Selma Arzu Vardar, *Edirne, Turkey*  
 Mehmet Yokuşoğlu, *Ankara, Turkey*  
 Jose L. Zamorano, *Madrid, Spain*  
 Wojciech Zareba, *New York, USA*  
 Yuqing Zhang, *Beijing, China*



**TURKISH  
 SOCIETY OF  
 CARDIOLOGY**

**The Owner on behalf of  
 the Turkish Society of Cardiology**

**Türk Kardiyoloji Derneği adına  
 İmtiyaz Sahibi**

Mustafa Kemal EROL

Address : Nish İstanbul A Blok Kat: 8, No: 47-48  
 Çobançesme Sanayi Cad. No: 11  
 Yenibosna, Bahçelievler 34196  
 İstanbul, Türkiye

Phone : +90 212 221 1730-38  
 Fax : +90 212 221 1754  
 E-mail : [tkd@tkd.org.tr](mailto:tkd@tkd.org.tr)  
 Web : [www.tkd.org.tr](http://www.tkd.org.tr)

**Editor-in-Chief Office**

Phone : +90 (535) 461 41 62  
 Fax : +90 (212) 221 17 54  
 E-mail : [info@anatoljcardiol.com](mailto:info@anatoljcardiol.com)

**Assistants to the Editor-in-Chief**

Ebru BOZ  
 Elif SÖNMEZ



Publisher: Kare Yayıncılık (Kare Publishing)

Concord İstanbul Dumlupınar Mah. Yumurtacı Abdi Bey  
 Cad. Cihan Sok. No: 15, B Blok Da: 162 Kat: 21, Kadıköy,  
 İstanbul, TURKEY

Phone: +90 216 550 61 11

Fax: +90 216 550 61 12

<http://www.kareyayincilik.com>


E-mail: [kareyayincilik@gmail.com](mailto:kareyayincilik@gmail.com)

Yayın Türü: Uluslararası Süreli, Basım Tarihi: Mart 2020  
 Basım: Filmevi Grafik Renk Ayrımı Sistemleri San.  
 Tic. LTD. ŞTİ. İstanbul-Türkiye

**CONTENTS****EDITORIAL**

- ▶ **SELFIE-TR, TURKMI, MINOCA-TR: New data for you** 119  
Çetin Erol; Ankara-*Turkey*

**REVIEWS**

- ▶ **Molecular diagnosis methods in familial hypercholesterolemia** 120  
Valeriu Moldovan, Claudia Banescu, Minodora Dobreanu; Targu Mures-*Romania*
- ▶ **New perspectives by imaging modalities for an old illness: Rheumatic mitral stenosis**  128  
Tuğba Kemaloğlu Öz, Özge Özden Tok, Leyla Elif Sade; İstanbul, Ankara-*Turkey*

**ORIGINAL INVESTIGATIONS**


- ▶ **Advanced glycation end products facilitate the proliferation and reduce early apoptosis of cardiac microvascular endothelial cells via PKC $\beta$  signaling pathway: Insight from diabetic cardiomyopathy** 141  
Yi Luan, Jiefang Zhang, Min Wang, Guosheng Fu, Wenbin Zhang; Zhejiang-*P.R. China*
- ▶ **The expression of interleukin-25 increases in human coronary artery disease and is associated with the severity of coronary stenosis** 151  
Yao Xu, Jing Ye, Menglong Wang, Jianfang Liu, Zhen Wang, Huimin Jiang, Di Ye, Jishou Zhang, Jun Wan; Wuhan-*China*
- ▶ **Snapshot evaluation of acute and chronic heart failure in real-life in Turkey: A follow-up data for mortality** 160  
Mehmet Birhan Yılmaz, Emrah Aksakal, Uğur Aksu, Hakan Altay, Nesligül Yıldırım, Ahmet Çelik, Mehmet Ata Akil, Lütfü Bekar, Mustafa Gökhan Vural, Rengin Çetin Güvenç, Savaş Özer, Dilek Ural, Yüksel Çavuşoğlu, Lale Tokgözoğlu; İzmir, Erzurum, İstanbul, Kırıkkale, Mersin, Diyarbakır, Çorum, Sakarya, Rize, Eskişehir, Ankara-*Turkey*
- ▶ **Rationale and design of the Turkish acute myocardial infarction registry: The TURKMI Study** 169  
Mustafa Kemal Erol, Meral Kayıkçioğlu, Mustafa Kılıçkap; İstanbul, İzmir, Ankara-*Turkey*
- ▶ **Prevalence and clinical profile of patients with myocardial infarction with non-obstructive coronary arteries in Turkey (MINOCA-TR): A national multi-center, observational study** 176  
Salih Kılıç, Gökhan Aydın, Ali Çoner, Yasemin Kılavuz Doğan, Özlem Arıcan Özlük, Yunus Çelik, İsmail Ünğan, Mustafa Taşcanov, Ramazan Düz, Veli Polat, Hakan Özkan, Mehmet Özyaşar, Kamil Tülüce, Devrim Kurt, Nurullah Çetin, Murat Gül, Sinan İnci, Fatma Yılmaz Çoşkun, Hasan Arı, Mehdi Zoghi, Oktay Ergene, Uğur Önsel Türk; Adana, Balıkesir, Antalya, Kayseri, Bursa, Kırıkkale, Yalova, Tokat, Van, İstanbul, Karaman, İzmir, Giresun, Aksaray, Gaziantep-*Turkey*

## CONTENTS



### CASE REPORTS

- ▶ Closure of residual leakage after the use of hybrid umbrella in umbrella technique: A case report  183  
Mingxian Chen, Jianjun Tang, Zhenfei Fang, Xiangqian Shen, Shenghua Zhou; Changsha-*China*
- ▶ Successful management of a rare and fatal complication of cardiac catheterization:  187  
Abdominal compartment syndrome  
İsmail Balaban, Berhan Keskin, Ahmet Karaduman, Ali Karagöz, Regayip Zehir; İstanbul-*Turkey*
- ▶ Percutaneous closure of a secundum atrial septal defect through femoral approach in an adult  188  
patient with interrupted inferior vena cava and azygos continuation  
Elnur Alizade, Ahmet Karaduman, İsmail Balaban, Berhan Keskin, Semih Kalkan; İstanbul-*Turkey*

### LETTERS TO THE EDITOR

- ▶ Brain-derived neurotrophic factor as biomarker 192  
Pathum Sookaromdee, Viroj Wiwanitkit; Bangkok-*Thailand*, Pune-*India*
- ▶ A new marker for ventricular tachyarrhythmias in patients with post-infarction  193  
left ventricular aneurysm: Big endothelin-1  
Tufan Çınar, Mert Hayiroğlu, Vedat Çiçek, Ahmet L. Orhan; İstanbul-*Turkey*

### E-PAGE ORIGINAL IMAGES

- ▶ Ruptured abdominal aortic aneurysm presented as Cullen's sign and Grey Turner's sign  E-7  
Che-Yu Su, Chi-Wei Lee, Chun-Yen Huang; Kaohsiung-*Taiwan*
- ▶ Percutaneous treatment of the Gerbode defect causing heart failure after mitral valve surgery  E-8  
Emre Refik Altekin, Hüseyin Yılmaz; Antalya-*Turkey*