

syndrome (BS), ventricular fibrillation (VF) occurs mainly during sleep, and Brugada ECG signs are intensified by parasympathomimetic drugs; therefore, vagal activity could be a precipitating factor of VF; Mizumaki et al. (2) stated that spontaneous augmentation of ST elevation in daily life occurred along with an increase in vagal activity. Performing T wave alternans (TWA) test under exercise stress test that favours sympathetic stimulation may suppress microvolt T wave alternans level.

Performing the test under a sodium channel blocker, such as ajmaline to unmask type I Brugada ECG, may be considered. But in our study patients seven of them had pretest spontaneous type I ECG and the result of modified moving average (MMA) TWA were also negative in these patients. Ajmaline may induce sustained ventricular arrhythmias in BS patients. Conte et al. (3) performed ajmaline challenge test to 503 patients and 9 patients (1.8%) developed life threatening ventricular tachyarrhythmias. Two of their cases were resistant to first external defibrillation and one of them underwent venoarterial extracorporeal membrane oxygenation to restore sinus rhythm. The reason we did not infuse Na channel blocker to study patients is that, safety of ajmaline administration to BS patients while exercise stress test is unknown.

The prognostic value of these non-invasive ECG indices remains equivocal in BS patients. This may be explained in part by dynamic instability of the ECG features of BS; they are known to be concealed or unmasked by autonomic activity, food intake, body temperature and a variety of drugs. Such problems could be circumvented by extensive analysis of ambulatory ECGs, taking circadian periodicity into account (4). Yoshioka et al. (5) and Abe et al. (6) studied ambulatory ECGs of BS patients and showed the dynamic daily variations in late potentials and T wave amplitude variability. We agree with Dr. Verrier that the analyzing of TWA from AECGs from our high risk BS cohort could show significant levels of TWA.

In summary, MMA TWA test performing under exercise test for risk stratification in BS is not useful. TWA test should be studied in this cohort analyzing AECGs.

Kıvanç Yalın, Ebru Gölcük, Ahmet Kaya Bilge
Department of Cardiology, İstanbul Faculty of Medicine, İstanbul University; İstanbul-Turkey

References

1. Yalın K, Gölcük E, Teker E, Bilge AK, Adalet K. Is there a role of MMA T wave alternans test for risk assessment in Brugada syndrome? *Anadolu Kardiyol Derg* 2013; 13: 702-4.
2. Mizumaki K, Fujiki A, Tsuneda T, Sakabe M, Nishida K, Sugao M, et al. Vagal activity modulates spontaneous augmentation of ST elevation in the daily life of patients with Brugada syndrome. *J Cardiovasc Electrophysiol* 2004; 6: 667-73. [CrossRef]
3. Conte G, Sieira J, Sarkozy A, Asmundis C, Di Giovanni G, Chierchia GB, et al. Life-threatening ventricular arrhythmias during ajmaline challenge in patients with Brugada syndrome: Incidence, clinical features, and prognosis. *Heart Rhythm* 2013; 13: 1070-9.
4. Verrier RL, Ikeda T. Ambulatory ECG-based T-wave alternans monitoring for risk assessment and guiding medical therapy: mechanisms and clinical applications. *Prog Cardiovasc Dis* 2013; 56: 172-85. [CrossRef]
5. Yoshioka K, Amino M, Zareba W, Shima M, Matsuzaki A, Fujii T, et al. Identification of high-risk Brugada syndrome patients by combined analysis of late potential and T-wave amplitude variability on ambulatory electrocardiograms. *Circ J* 2013; 77: 610-8. [CrossRef]
6. Abe A, Kobayashi K, Yuzawa H, Sato H, Fukunaga S, Fujino T, et al. Comparison of late potentials for 24 hours between Brugada syndrome and arrhythmogenic right ventricular cardiomyopathy using a novel signal-averaging system based on Holter ECG. *Circ Arrhythm Electrophysiol* 2012; 5: 789-95. [CrossRef]

Address for Correspondence: Dr. Kıvanç Yalın,
 İstanbul Üniversitesi İstanbul Tıp Fakültesi, Kardiyoloji Anabilim Dalı, Çapa
 İstanbul-Türkiye
 Phone: +90 212 414 20 00
 E-mail: yalinkivanc@gmail.com
Available Online Date: 18.12.2013

YKL-40 levels in patients with coronary artery ectasia

To the Editor,

We have read the article "Increased YKL-40 levels in patients with isolated coronary artery ectasia (CAE): an observational study" written by Erdoğan et al. (1) in *Anadolu Kardiyol Derg* 2013; 13: 465-70. with great interest. They aimed to investigate YKL-40 and C-reactive protein (CRP) levels in patients with isolated CAE compared to patients with normal coronary arteries and coronary artery disease (CAD). They concluded that YKL-40 levels in patients with isolated CAE compared to patients with NCA were found significantly high and only YKL-40 level was established as the determinant of CAE.

Some conditions may increase quality of the present study. Firstly, the CAE classification is an important condition for study design. The CAE classification previously described by Markis et al. (2). YKL-40 level may be different in severity of CAE according to Markis classification. For this reason, if the authors had mentioned, the results of the study could be useful.

Although the etiopathogenesis of CAE is not very well defined, we considered that endothelial dysfunction contributes to the atherosclerotic process (3). In 85% of the cases, CAE is accompanied by atherosclerotic CAD. Multiple factors contribute to the pathogenesis of atherosclerosis, but inflammation and oxidative stress are likely to play a role. Because metabolic syndrome (4), abnormal thyroid function tests, renal or hepatic dysfunction, known malignancy (5), inflammatory diseases (6), and any medication (7) that related to inflammatory condition of patients, the measurement of YKL-40 levels can be potentially affected in all of above conditions. For these reasons, it would be better, if the authors had mentioned these factors.

Obstructive sleep apnoea syndrome (OSAS) and non-alcoholic fatty liver disease (NAFLD) are common in clinical practice. Cardiovascular complications are common in patients with OSAS have been linked to morbidity and mortality in these patients (8). Also, the presence and the degree of NAFLD are associated with higher inflammatory parameters. Additionally, common pathways involved in the pathogenesis of NAFLD includes subclinical inflammation, and atherosclerosis (9). In this point of view, because NAFLD and OSAS are associated with atherosclerosis and inflammation, future studies should mention these factors.

In conclusion, although the authors concluded that only YKL-40 level was established as the determinant of CAE, but YKL-40 is not used for inflammation in clinical practice. So, we believe that not only YKL-40 but also routine, inexpensive, easy inflammatory tests like red cell distribution width, neutrophil-lymphocyte ratio, platelet-lymphocyte ratio and mean platelet volume should be evaluated in future studies.

Şevket Balta, Sait Demirkol, Uğur Küçük, Mustafa Demir, Zekeriya Arslan, Murat Ünlü
Department of Cardiology, Gülhane Military Medical Academy;
Ankara-Turkey

References

1. Erdoğan T, Kocaman SA, Çetin M, Durakoğlugil ME, Kırbaş A, Çanga A, et al. Increased YKL-40 levels in patients with isolated coronary artery ectasia: an observational study. *Anadolu Kardiyol Derg* 2013; 13: 465-70.
2. Markis J, Joffe CD, Cohn PF, Feen DJ, Herman MV, Gorlin R. Clinical significance of coronary artery ectasia. *Am J Cardiol* 1976; 37: 217-22. [CrossRef]
3. Demirkol S, Balta Ş, Çelik T, Ünlü M, Arslan Z, Çakar M, et al. Carotid intima media thickness and its association with total bilirubin levels in patients with coronary artery ectasia. *Angiology* 2013 Jan 27. [Epub ahead of print] [CrossRef]
4. Balta Ş, Çakar M, Demirkol S, Arslan Z, Akhan M. Higher neutrophil to lymphocyte ratio in patients with metabolic syndrome. *Clin Appl Thromb Hemost* 2013; 19: 579. [CrossRef]
5. Balta Ş, Demirkol S, Şarлак H, Kurt O. Comment on "Elevated preoperative neutrophil/lymphocyte ratio is associated with poor prognosis in soft-tissue sarcoma patients": neutrophil to lymphocyte ratio may be predictor of mortality in patients with soft-tissue sarcoma. *Br J Cancer* 2013; 108: 2625-6. [CrossRef]
6. Ekiz O, Balta I, Şen BB, Rifaioğlu EN, Ergin C, Balta Ş, et al. Mean platelet volume in recurrent aphthous stomatitis and Behçet disease. *Angiology* 2013 Jun 13. [Epub ahead of print] [CrossRef]
7. Karaman M, Balta Ş, Ay SA, Çakar M, Naharci I, Demirkol S, et al. The Comparative effects of valsartan and amlodipine on vWf levels and N/L ratio in patients with newly diagnosed hypertension. *Clin Exp Hypertens* 2013; 35: 516-22. [CrossRef]
8. Steiner S, Jax T, Evers S, Hennersdorf M, Schwalen A, Strauer BE. Altered blood rheology in obstructive sleep apnea as a mediator of cardiovascular risk. *Cardiology* 2005; 104: 92-6. [CrossRef]
9. Balta Ş, Demirkol S, Ay SA, Kurt O, Ünlü M, Çelik T. Nonalcoholic fatty liver disease may be associated with coronary artery disease complexity. *Angiology* 2013; 64: 639-40. [CrossRef]

Address for Correspondence: Dr. Şevket Balta,
Gülhane Askeri Tıp Akademisi, Kardiyoloji Anabilim Dalı, Tevfik
Sağlam Cad. Etilik, Ankara-Türkiye
Phone: +90 312 304 42 81
Fax: +90 312 304 42 50
E-mail: drsevketb@gmail.com

Available Online Date: 18.12.2013

©Copyright 2014 by AVES - Available online at www.anakarder.com
doi:10.5152/akd.2013.5177



isolated CAE compared with patients with normal coronary arteries (NCA) and coronary artery disease (CAD). Increased YKL-40 levels may be observed due to many causes and if other concomitant diseases are not ruled out, the application as cardiac marker can lead to misinterpretation. We accept that YKL-40 is not a specific vascular, inflammatory biomarker however, red cell distribution width, neutrophil-lymphocyte ratio, platelet-lymphocyte ratio, mean platelet volume are neither specific nor routinely used in clinical practice (2). We have been criticized for not excluding potential factors that might affect YKL-40, however as far as we know, we excluded malignancy, infectious diseases and inflammatory conditions, hepatic and renal failure. It would have been better, although exhausting, if a selected patient population for isolated CAE had been composed. In addition to obstructive sleep apnea syndrome (OSAS) and non-alcoholic fatty liver disease (NAFLD), a possible related mechanism may be increased epicardial adipose tissue (3).

Based on previous arguments, although we cannot conclude the underlying pathologic process of CAE, we believe that further studies searching signaling on ectatic process in coronary vasculature are needed to clarify more accurately the mechanisms of CAE and the specific roles of YKL-40, and to confirm the importance of modulating real underlying process to improve clinical outcome.

Sinan Altan Kocaman, Murtaza Emre Durakoğlugil¹, Mustafa Çetin, Turan Erdoğan¹

Clinic of Cardiology, Rize Education and Research Hospital; Rize-Turkey
¹Department of Cardiology, Faculty of Medicine, Rize University; Rize-Turkey

References

1. Erdoğan T, Kocaman SA, Çetin M, Durakoğlugil ME, Kırbaş A, Çanga A, et al. Increased YKL-40 levels in patients with isolated coronary artery ectasia: an observational study. *Anadolu Kardiyol Derg* 2013; 13: 465-70.
2. Finkelstein A, Michowitz Y, Abashidze A, Miller H, Keren G, George J. Temporal association between circulating proteolytic, inflammatory and neurohormonal markers in patients with coronary ectasia. *Atherosclerosis* 2005; 179: 353-9.
3. Çetin M, Erdoğan T, Kocaman SA, Çanga A, Çiçek Y, Durakoğlugil ME, et al. Increased epicardial adipose tissue in patients with isolated coronary artery ectasia. *Intern Med* 2012; 51: 833-8.

Address for Correspondence: Dr. Sinan Altan Kocaman,
Güven Hastanesi, Kardiyoloji Kliniği, Paris Caddesi, No: 58, 06540, Kavaklıdere,
Ankara-Türkiye
Phone: +90 312 457 23 98
Fax: +90 312 457 28 95
E-mail: sinanaltan@gmail.com

Available Online Date: 18.12.2013

YKL-40 as new cardiac biomarker

The publications on YKL-40 as a new cardiac biomarker is very interesting (1, 2). According to the report by Erdoğan et al. (2) a "Increased YKL-40 levels in patients with isolated coronary artery ectasia: an observational study" in *Anadolu Kardiyol Derg* 2013; 13: 465-70. It was concluded that "YKL-40 levels in patients with isolated CAE compared to patients with normal coronary arteries (NCA) were found significantly high and only YKL-40 level was established

Author's Reply

To the Editor,

We thank the authors for their comments on our article in *Anadolu Kardiyol Derg* 2013; 13: 465-70. (1) entitled as 'YKL-40 levels in Patients with Coronary Artery Ectasia' in their letter. The goal of this study was to investigate YKL-40 and C-reactive protein (CRP) levels in patients with