Uniform criteria for diagnosing noncompaction by cMRI and echocardiography are warranted

To the Editor,

We read with great interest the article by Akhbour et al. (1) published in Anatol J Cardiol 2015; 15: 550-5 entitled “Electrocardiographic findings in correlation to magnetic resonance imaging patterns in African patients with isolated ventricular noncompaction” on cardiac magnetic resonance imaging (cMRI) and electrocardiographic (ECG) findings in 24 patients with left ventricular hypertrabeculation (LVHT)/noncompaction. Systolic function and arrhythmia were not correlated with the number of non-compacted segments or the number of segments showing late gadolinium enhancement (LGE) (1). We have the following comments and concerns.

Though LVHT is presumably congenital in majority of the cases, it can be also acquired, such as in neuromuscular disorders (NMDs), (2) pregnant females (3), and athletes (4). Acquired LVHT suggests that LVHT is not only due to the failure of the embryonic compaction process but also may result from the adaptation of the myocardium to hemodynamic dysfunction.

We do not agree with the definition of LVHT for not allowing the presence of any other cardiac abnormality except LVHT (isolated LVHT). Non-isolated LVHT is frequent and is also LVHT.

How do the authors explain the missing correlation between the number of LGE segments and ventricular tachycardia? Was the group size too small? Was the correlation different when subendocardial, transmural, and mid-myocardial LGE were separately evaluated? Was the LGE pattern patchy or diffuse? Possibly, cMRI fails to display all degrees of fibrosis, particularly fibrosis of the endocardium or early evolving fibrosis? Possibly, ventricular arrhythmias are not correlated with the number of LGE segments but with the volume or area of the LVHT lesions? It is also conceivable that fibrosis in LVHT is ethnically different; for instance, Caucasians show a positive correlation between fibrosis and arrhythmias, whereas Africans do not, similar to the results in the present study. How did the authors quantify arrhythmias to correlate them with the number of LVHT fibrotic segments?

Arrhythmias may not only result from myocardial fibrosis but also result from ischemia. There are some indications that perfusion of the non-compacted layer is worse than that of the compacted layer (5).

Possibly, the amount of arrhythmias correlates with myocardial scintigraphy. The frequent occurrence of LBBB may not only result from myocardial fibrosis but also from trabeculations, which predispose for prolonged propagation of the excitation.

We do not agree with the statement that cMRI is the method of choice to diagnose LVHT (1). The method of choice is echocardiography, but in case the echocardiographic diagnosis is uncertain, cMRI should be performed. Both techniques supplement each other, but they produce false positive and false negative results. As long as there are no common generally accepted LVHT diagnostic criteria either for cMRI or for echocardiography and as long as there is no gold standard for diagnosing LVHT, the reliability of both methods remains limited.

Atrial fibrillation was found in 17% of patients (1). Did these patients also present with thrombi within the intertrabecular spaces?

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References

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Was intraventricular thrombus formation associated with cardiac function?

Overall, this interesting study could profit from including patients other than Africans, from increasing the group size, and from evaluating the LGE extension. The negative correlation found could be explained by the absence of a uniform definition of LVHT, thus including patients who do not have LVHT or excluding patients who definitely have LVHT.

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Author’s Reply

The authors of this mentioned article did not send any reply to this Letter to the Editor in spite of our insistent requests.

Predictors of poor coronary collateral development in patients with stable coronary artery disease: Neutrophil-to-lymphocyte ratio and platelets

To the Editor,

We read with great interest the paper titled “Predictors of poor coronary collateral development in patients with stable coronary artery disease: Neutrophil-to-lymphocyte ratio and platelets” by Akın et al. (1) that was published in the April issue of the Anatol J Cardiol 2015; 15: 218-23. In this original article, the authors revealed that the neutrophil/lymphocyte (N/L) ratio is independently associated with the presence of coronary collateral circulation (CCS) in patients with stable angina pectoris. Also, they found that an N/L ratio higher than 2.55 could predict a good collateral circulation with 76% sensitivity and 63% specificity using ROC analysis.

Data in current scientific literature reveal that CCS is associated with metabolic syndrome and serum cholesterol levels (HDL and especially triglyceride) (2, 3). There are similar findings in the present study (1). In particular, the study found that a lower triglyceride level is significantly related with good CCS and is an independent predictor in multivariate regression analysis.

Exercise has a positive effect on the lipid profile, and it does improve metabolic syndrome parameters. Furthermore, Wang et al. (4) showed in their study that diet and exercise improve the N/L ratio. The study also demonstrated that a decrease in the N/L ratio is positively correlated with interleukin-6 levels. As a result, they concluded that diet and exercise have a positive impact on pro-inflammatory mediators.

The positive impact of exercise on CCS development has been well known for some time (5). As the positive effect of exercise on lipid parameters and the N/L ratio is already known, the questions that come to our mind are whether patients who have good CCS exercise more, and could a lower triglyceride level and a lower N/L ratio be related to exercise? However, for us to answer these questions, more information about the functional status and exercise capacity of the study patients is required, and this was not mentioned in the article. Furthermore, body mass index data for these patients are unavailable. In our opinion, the findings from this study could be related to the amount of exercise, and further studies in this area could answer this question.

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