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## The atrial conduction time in patients with normal atrial size

To the Editor,

We have read with great interest the manuscript by Housseinsabet (1) entitled "Assessment of atrial conduction times in patients with mild diastolic dysfunction and normal atrial size," published in the *Anatolian Journal of Cardiology* 2015; 15: 925-31. In this study, Housseinsabet (1) clearly demonstrated that there were no differences in atrial conduction times (ACTs) and atrial electromechanical delays (EMDs) in patients with mild diastolic dysfunction and normal left atrial volume compared with normal subjects.

We want to share further comments about the findings of the study. The evaluation of atrial EMD with tissue Doppler echocardiography fundamentally shows the time during the propagation of cardiac impulse through atria. If the atrial size increases, the pathway of the cardiac impulse and the required time for the propagation of the impulse will also increase. This situation has already been supported with the findings of recent studies that include patients of different diseases with atrial enlargement such as mitral stenosis or atrial septal defect (2, 3). These studies also revealed the association of increased atrial size and increased EMD (2, 3). On the other hand, a condition without atrial enlargement can be expected with similar EMD values as a normal control group. The findings of the study by Housseinsabet supported this expectation (1). It seems that when the enlargement of the atria reaches a critical size, then the increase in atrial EMD can be appreciable. However, in the literature, there are conflicting findings of various studies evaluating the susceptibility for atrial fibrillation (AF) in many medical conditions without the enlargement of atria, such as atrial septal aneurysm or familial Mediterranean fever (4, 5). These studies documented the increase in EMD and ACT in patients with a similar size of atria compared with control groups by using the same method of tissue Doppler echocardiography as Housseinsabet. It can be speculated that the underlying mecha-

nism of AF is multiple, and the damage of the atrial tissue, presence of inflammation, or decrease in the mechanical function of atria can influence the homogeneity of atrial conduction without atrial enlargement. However, using this echocardiographic technique to measure atrial EMD may be doubtful for patients with normal size of atria because atrial dilatation is the major cause for the increase in ACT. The gold standard measure for atrial EMD is direct measurement with electrophysiological study (EPS). If it is possible to demonstrate the increase of EMD in different conditions with EPS findings, it may be helpful in clarifying the issue.

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