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Aortic Stiffness May Be Affected by Body Mass Index

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Dear Editor,

I read with great interest the study by Güçlü et al. [1] entitled “Relationship between Fragmented QRS Complex and Aortic Stiffness in Chronic Hemodialysis Patients,” in which they reported a higher level of aortic stiffness and left ventricular systolic dysfunction in hemodialysis patients with fragmented QRS complex (fQRS) than those without fQRS. I congratulate the authors on their valuable study.

Arterial stiffness or arteriosclerosis is one of the earliest structural and functional changes in vascular walls due to endovascular inflammation, which is a progressive and age-related process that leads to diffuse occlusion [2, 3]. It is primarily defined by aging and mean arterial pressure, and has been accepted as one of the novel predictors of endothelial dysfunction [3]. Risk factors for increased arterial stiffness include cigarette smoking, poor cardiorespiratory fitness, insulin resistance, dyslipidemia, atherosclerosis, coronary artery disease, hypertension, diabetes mellitus, hypothyroidism, metabolic syndrome, Behçet disease, psoriasis, cerebrovascular disease, peripheral arterial disease, and drugs such as statins, an-

giotensin-converting enzyme inhibitors, and angiotensin receptor blockers [1–5]. However, several other factors could have some effect on arterial stiffness. Tarnoki et al. [4] stated that body mass index (BMI) was significantly correlated with brachial systolic blood pressure and diastolic blood pressure, aortic systolic blood pressure, and mean arterial pressure, which might influence arterial stiffness. Ferreira et al. [5] reported that the mean BMI was higher in subjects with stiffer arteries than those with less stiff arteries based on a longitudinal study, hence their conclusion that blood pressure and the central pattern of body fatness were considerable factors influencing arterial stiffness. However, Güçlü et al. [1] did not provide any data regarding BMI in the studied population. Their study would have been more reliable if they had reported that there was no significant difference in BMI between the hemodialysis patients with and without fQRS.

References

- Güçlü A, Nar G, İçli A, et al: Relationship between fragmented QRS complex and aortic stiffness in chronic hemodialysis patients. *Med Princ Pract* 2017;26:66–70.
- Avolio A: Arterial stiffness. *Pulse (Basel)* 2013;1:14–28.
- Cavalcante JL, Lima JA, Redheuil A, et al: Aortic stiffness: current understanding and future directions. *J Am Coll Cardiol* 2011;57:1511–1522.
- Tarnoki AD, Tarnoki DL, Bogl LH, et al: Association of body mass index with arterial stiffness and blood pressure components: a twin study. *Atherosclerosis* 2013;229:388–395.
- Ferreira I, van de Laar RJ, Prins MH, et al: Carotid stiffness in young adults: a life-course analysis of its early determinants: the Amsterdam Growth and Health Longitudinal Study. *Hypertension* 2012;59:54–61.