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Blood Pressure and Age Are the Main Determinants of Aortic Stiffness

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Dear Editor,

We would like to thank Gülgün for his interest in our paper entitled “Relationship between Fragmented QRS Complex and Aortic Stiffness in Chronic Hemodialysis Patients” [1]. He pointed out that, as one of the important determinants of aortic stiffness, BMI should have been checked in the study population.

In a cardiovascular health study [2], increased aortic stiffness was associated with BMI, but this correlation disappeared when age and blood pressure were included as variables. Similarly, in a systematic review, it was shown that aortic stiffness was weakly correlated with conventional cardiovascular risk factors, except for blood pressure and age. Aortic stiffness was not independently associated with BMI, total cholesterol, low-density lipoprotein cholesterol, triglyceride, smoking, or gender when blood pressure and age were included as variables [3]. Age and blood pressure

were responsible for 34% of the change in aortic stiffness. All other factors were attributed to 4% of the change [4]. In another study, obesity was identified as a major factor responsible for the prevalence of hypertension [5]. The relation between obesity and aortic stiffness was most probably due to progressively increasing blood pressure subsequent to obesity. Aortic stiffness increased due to the physical distending effect of blood pressure on the arterial wall.

Blood pressure and age were the main parameters that affected aortic stiffness. The effect of BMI on stiffness was related to the higher blood pressures that were observed in patients with a higher BMI. When factors related to aortic stiffness are evaluated, adjustments according to blood pressure must be made.

References

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