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Coronary Slow Flow: A Mysterious Disease That Has Not Yet Been Clarified

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EDITORIAL COMMENT
EDİTÖRYAL YORUM

Coronary slow flow phenomenon is a physiological condition characterized by slower or no coronary blood flow in at least one major epicardial artery. Although many mechanisms have been proposed, the clear mechanism has yet to be elucidated. Therefore, the situation remains a mystery to cardiologists. Although the mechanism is not known, its clinical effects have been demonstrated in clinical studies. The relationship between coronary flow rate and myocardial ischemia and impaired myocardial function has been demonstrated.[1-3]

Uric acid is the end product of purine metabolism in humans. Higher uric acid levels are related with increased reactive oxygen radicals, and decreased nitric oxide. In clinical studies, uric acid levels have been shown to be related to cardiovascular diseases such as myocardial infarction and heart failure.[4-6]

Patients with slow coronary flow have higher uric acid levels.[7] Furthermore, uric acid lowering therapy has been shown to improve endothelial function.[8] Existing evidence suggests that unfavorable clinical results of increased uric acid levels may be explained by harmful effect of uric acid on coronary vascular system.

Based on the relationship between coronary flow rate and uric acid, Niu et al.'s[9] study published in the issue of the Archives of the Turkish Society of Cardiology investigated the possible associations between serum uric acid levels in patients with slow coronary flow and diastolic dysfunction and major cardiovascular events. The authors demonstrated that there was a significant relationship between uric acid levels and the percentage change (stress-rest) in E/e' (P = 0.002). Serum uric acid level was also found to be an independent marker of diastolic dysfunction (OR = 1.87) and cardiovascular endpoints (HR = 1.56) in patients with slow coronary flow.

These findings could be of clinical value because it is the first study to investigate the relationship between uric acid levels, diastolic dysfunction and major cardiovascular events in patients with slow coronary flow. In light of these findings, the question may come to mind whether uric acid is a practically applicable marker to better understand the relationship between coronary blood flow, ventricular diastolic dysfunction and follow-up adverse cardiac events like heart failure with preserved ejection fraction. The prediction of hazardous effect of uric acid and slow coronary flow may be helpful for clinicians in management of these patients.

Two points should be considered to comment on the effect of uric acid on cardiovascular system; (i) optimal level of uric acid and (ii) gender-specific range of uric acid. The optimal range of uric acid levels is not clear. In the current study, the authors found that 5.7 mg/dl was associated with an increased cardiovascu-

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lar event. Many clinicians may accept this level as normal. In a large study, increased cardiovascular mortality was observed in men with ≥7 mg/dl and in women with ≥5 mg.[10] In addition, there may also be a J-shaped curve for cardiovascular risk and uric acid levels. Hypouricaemia may be a risk factor for cardiovascular disease.[10,11] On the other hand, hazardous threshold changes with gender. Large studies are needed to define the optimal threshold for uric acid levels in order to achieve a new treatment target.

Declaration of Interests: The authors declare that they have no competing interest.

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