

## Serum Uric Acid Still Carries Controversies About its Role in Endothelial Dysfunction

To the Editor:

We appreciate the article “Serum Uric Acid, Inflammation, and Nondipping Circadian Pattern in Essential Hypertension” written by Osman Turak<sup>1</sup> and read it with great interest. The study concluded that serum uric acid is strongly and independently associated with the nondipper circadian pattern in essential hypertension.<sup>1</sup> The subject is important in terms of the daily practice and the study justifies emphasizing its successful design and documentation.

Formerly, uric acid was thought to be a major antioxidant with its possible beneficial anti-atherosclerotic effects. However, recent studies in the past 2 decades have found associations between high serum uric acid measurements and cardiovascular accidents, giving a potential role to uric acid as a risk factor for evolution of atherosclerosis and related diseases.<sup>2</sup> A recent study discussed the possible deleterious effects of uric acid formation and the involvement of xanthine oxidoreductase system in reactive oxygen species generation.<sup>3</sup> Another study recently concluded that uric acid is independently associated with prevalent chronic kidney disease and hypertension in Alaska Natives,<sup>4</sup> but there are some controversial results. Gout patients were different than controls in vascular function and in univariate and multivariate analysis. Uric acid was not associated with quantified cardiovascular risk parameters in a study by Brook and colleagues<sup>5</sup> published last year, and a review about uric acid levels and cardiovascular risk determination reported that there is insufficient evidence to recommend the routine use of uric acid–lowering therapies in patients at high cardiovascular risk with asymptomatic hyperuricemia.<sup>6</sup>

In addition, serum uric acid levels may change in some conditions. Gout, primary enzyme deficiencies, exercise, or diuretic medications and salicylate usage may cause uric acid elevations. Uric acid itself alone may not give information to clinicians about the endothelial inflammatory condition of the patient at the first evaluation to determine the cardiovascular and overall mortality. Therefore, we think that it should be evaluated in suspected patients together with other markers showing endothelial dysfunction just like arterial stiffness and flow-mediated dilation.

Mustafa Cakar, MD;<sup>1</sup> Hakan Sarlak, MD;<sup>1</sup>  
Sevket Balta, MD;<sup>2</sup> Murat Unlu, MD;<sup>2</sup>  
Seref Demirbas, MD;<sup>1</sup> Sait Demirkol, MD<sup>2</sup>

<sup>1</sup>Department of Internal Medicine, Gulhane Medical Academy, Ankara, Turkey; <sup>2</sup>Department of Cardiology, Gulhane Medical Academy, Ankara, Turkey

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