LETTER TO THE EDITOR

Effects of NSAIDs on kidney functions and cardiovascular system

To the Editor:
We have read with great interest the article published by Cunha et al which was about association between urinary sodium/potassium ratio and blood pressure, structural and functional vascular functions. It is emphasized that higher values of urinary Na/K ratio are related to increased blood pressure and arterial stiffness values and worse endothelial functions.¹

Non-steroidal anti-inflammatory drugs (NSAIDs) are the most common prescribed drugs worldwide. NSAIDs are used in the treatment of inflammatory diseases and pain syndromes. NSAIDs have several effects on kidney functions. They can cause acute kidney injury, renal papillary necrosis, interstitial nephritis, glomerulonephritis, and electrolyte imbalance. Cyclooxygenase (COX) enzymes act as primary role on tubular functions and inhibition of COX-1 and COX-2 leads changes on Na and K excretion.² NSAIDs increase K levels by two main mechanisms. First of them is inhibiting the prostaglandin-mediated renin secretion and downregulating angiotensin-aldosterone system. The second mechanism is that NSAID related reduced glomerular filtration rate yields decreased K filtration.³ NSAIDs remove the inhibitory effects of prostaglandins on sodium reabsorption and cause Na and water retention. NSAIDs also exacerbate the thiazide diuretics-related hyponatremia.² NSAIDs inhibit aldosterone metabolism and cause increased endothelial injury, myocardial fibrosis, left ventricular remodeling, and Na retention.⁴

In conclusion, NSAIDs have several effects on both kidney functions and cardiovascular system. NSAIDs are the most common prescribed drugs. NSAID use affects urinary Na and K excretion, and it suppresses inflammation, so CRP levels might be influenced. Therefore, we think that it could be better if the status of NSAID use in the study population was evaluated.

Yusuf Ziya Şener MD
Metin Okşul MD
Cardiology Department, Hacettepe University Faculty of Medicine, Ankara, Turkey

Correspondence
Yusuf Ziya Şener, Cardiology Department, Hacettepe University Faculty of Medicine, Ankara, Turkey
Email: yzsener@yahoo.com.tr

ORCID
Yusuf Ziya Şener https://orcid.org/0000-0001-5151-5133
Metin Okşul https://orcid.org/0000-0002-4759-4868

REFERENCES