## Lefter to the Editor

## Copeptin levels in OSAS patients: still an unresolved issue

Dear Editor,

We have read with great interest the study conducted by Akkoyun et al, which was published recently in the journal<sup>1</sup>. In their study, the researchers showed higher copeptin levels in prehypertensive patients with obstructive sleep apnea syndrome (OSAS), and concluded that copeptin levels could be valuable for assessing the severity of OSAS<sup>1</sup>. These findings were particularly interesting since we have previously demonstrated lower copeptin levels in OSAS patients, irrespective of disease severity<sup>2</sup>.

Copeptin is the stable terminal fragment of antidiuretic hormone (ADH), which is released from the pituitary gland as a response to endogenous stress. This biomarker had gained particular interest since both coronary artery disease (CAD) and various risk factors associated with CAD, such as diabetes or hypertension, elevate copeptin levels<sup>3-5</sup>. CAD is also an important cause of morbidity and mortality in OSAS patients, so assessing the patients at risk for CAD would be invaluable. Although copeptin seemed as a candidate biomarker, our preliminary results indicated that copeptin was in fact reduced in OSAS patients, which could be related to disturbed ADH secretion in OSA<sup>6</sup>.

Despite our previous findings, Akkoyun and associates had demonstrated copeptin levels were significantly higher in prehypertensive OSAS patients compared to prehypertensive patients without OSA. The authors suggested that, by excluding patients with hypertension, their findings better represented OSAS patients, while prehypertension remained as a potential confounder in this study¹. In our original cohort, a substantial number of OSAS patients (52%, compared to 8% in controls) had hypertension, while copeptin levels were lower in study group, in contrary to the expected². This suggests that the presence of hypertension per se would not be sufficient to explain this apparent discrepancy.

In the absence of large, decisive studies; we consider that use of copeptin to determine the risk of CAD (or associated risk factors) in OSAS patients is not justified and consider that further research is needed on this topic.

## **Conflict of Interest**

The Authors declare that they have no conflict of interests.

## References

- 1) AKKOYUN DC, AKYUZ A, TULUBAS F, ALTINTAS N, ALPSOY S, MUTLU LC, GUREL A, ALP R. The serum copeptin levels in obstructive sleep apnea patients with prehypertensive. Eur Rev Med Pharmacol Sci 2015; 19: 1721-1728.
- 2) OZBEN S, GUVENC TS, HUSEYINOGLU N, SANIVAR HS, HANIKOGLU F, CORT A, OZBEN T. Low serum copeptin levels in patients with obstructive sleep apnea. Sleep Breath 2013; 17: 1187-1192.
- 3) POTOCKI M, REICHLIN T, THALMANN S, ZELLWEGER C, TWERENBOLD R, REITER M, STEUER S, BASSETTI S, DREXLER B, STELZIG C, FREESE M, WINKLER K, HAAF P, BALMELLI C, HOCHHOLZER W, OSSWALD S, MUELLER C. Diagnostic and prognostic impact of copeptin and highsensitivity cardiac troponin T in patients with pre-existing coronary artery disease and suspected acute myocardial infarction. Heart 2012; 98: 558-565.
- 4) ENHÖRNING S, WANG TJ, NILSSON PM, ALMGREN P, HEDBLAD B, BERGLUND G, STRUCK J, MORGENTHALER NG, BERGMANN A, LINDHOLM E, GROOP L, LYSSENKO V, Orho-Melander M, Newton-Cheh C, Melander O. Plasma copeptin and the risk of diabetes mellitus. Circulation 2010; 121: 2102-2108.

- 5) Tenderenda-Banasiuk E, Wasilewska A, Filonowicz R, Jakubowska U, Waszkiewicz-Stojda M. Serum copeptin levels in adolescents with primary hypertension. Pediatr Nephrol 2014; 29: 423-429.
- 6) ICHIOKA M, HIRATA Y, INASE N, TOJO N, YOSHIZAWA M, CHIDA M, MIYAZATO I, TANIAI S, MARUMO F. Changes of circulating atrial natriuretic peptide and antidiuretic hormone in obstructive sleep apnea syndrome. Respiration 1992; 59: 164-168.

T.S. Güvenç<sup>1</sup>, S. Özben<sup>2</sup>

<sup>1</sup>Department of Cardiology, Siyami Ersek Cardiovascular and Thoracic Surgery Research and Training Hospital, Istanbul, Turkey.

<sup>2</sup>Department of Neurology, Bakirkoy Research and Training Hospital for Psychiatry, Neurology, and Neurosurgery, Istanbul, Turkey.