CLINICS

READERS OPINION

Is there a dynamic change in ischemia-modified albumin in patients with obstructive sleep apnea, which often leads to ischemic diseases?

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Dear Editor,

We read the recent article "Influence of obstructive sleep apnea on serum butyrylcholinesterase activity and ischemia-modified albumin levels" by Liu-Xue Yang et al. with great interest (1). It is interesting that the ischemia-modified albumin (IMA) level was significantly associated with obstructive sleep apnea and that the IMA level was a more sensitive indicator of obstructive sleep apnea than butyrylcholinesterase activity. We appreciate the authors' well-designed study and encouraging results, which will act as a guide for additional basic and clinical research on OSA. To our knowledge, it is the first study to examine IMA in relation to OSA. However, we still have some concerns about this study.

IMA, which is produced by ischemia stresses (e.g., hypoxia, acidosis, and free radical injury), increases within minutes after the onset of ischemia, remains elevated for 6–12 h, and returns to normal within 24 h (2). The attenuation of IMA often indicates an acute ischemic event, such as acute coronary syndrome, a pulmonary embolism, or acute ischemic stroke (3-5).

In this study, blood samples were drawn from OSA patients after an overnight fast so that the peak IMA concentration would be properly timed to yield positive results. However, if extra IMA values were collected using dynamic observation with overnight polysomnography in the sleep unit, especially when the patients appeared to experience sleep apnea or a decrease in SaO2, the ischemia and oxidative stress mechanisms of OSA could be further clarified. We hypothesize that there is dynamic ischemic damage in OSA patients: mild ischemia and anoxia appear during the daytime, and while the patients sleep, apnea occurs and leads to even more serious ischemia and anoxia.

In addition, a minor problem may exist in this study. It is well known that OSA often leads to ischemic diseases, increases the incidence of coronary artery disease (CAD), and raises the risk of cardiovascular diseases (CVEs) (6,7). In this study, ischemic diseases, even stable CAD (which is associated with an elevated IMA level according to our research) (8), were not considered among the baseline characteristics of the two groups. This minor carelessness may have played a role in the positive results of the study.

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