Author’s Reply

Reply to Letter by Xiao and Song Regarding the Article, “Relation between Obesity, Metabolic Syndrome, Successful Long-Term Weight Reduction, and Right Ventricular Function”

To the Editor,

We read the letter by Dr. Xiao and Dr. Song with great interest.1) We agree that an association between obstructive sleep apnea (OSA) and obesity is well known. Chronic volume overload and insulin resistance can be potential mechanisms underlying this finding.

We also agree that OSA may also affect right ventricular (RV) function. As suggested by experimental studies, repeated nocturnal apneas leading to intermittent hypoxia can induce repeated episodes of RV overload through hypoxic vasoconstriction of the pulmonary microcirculation. Over time, this might lead to pulmonary vascular remodeling and chronic pulmonary hypertension.2,3) Moreover, clinical observations have revealed a reduction of RV ejection fraction in OSA patients4) and suggest that the RV myocardial performance index is reduced in moderate to severe OSA patients.5)

Nevertheless, RV function in OSA has been poorly investigated using echocardiography so far. In a recent investigation, it was demonstrated by speckle tracking echocardiography that OSA patients can exhibit subclinical RV systolic dysfunction which was not identifiable by simple standard echocardiography (e.g. TAPSE), or even by 3D echocardiography.6) The right ventricle has a more complex geometrical shape, is wrapped around the left ventricle, and is susceptible to the cardiac translational motion, making it prone to interobservational variability. The speckle tracking echocardiography method may be more sensitive for assessing myocardial deformation characteristics, but it may underestimate the longitudinal strain of the septum and global RV strain.7) Therefore, it is still difficult to assess RV function systematically. We have started to collect more data on OSA patients and hope that it will contribute to clarifying the role of OSA in RV function in obese patients.

Disclosures

Conflicts of interest: None.

References

1. Xiao CY, Song ZZ. Letter by Xiao and Song Regarding the Article “Relation Between Obesity, Metabolic Syndrome, Successful Long-Term Weight Reduction, and Right Ventricular Function”. Int Heart J 2018; 59: 668.

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