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Respiratory Therapy in Chronic Heart Failure Patients Complicated With Sleep-Disordered Breathing: Potential Study Bias
– Reply –

We thank Dr Felix-Moscoso and her colleagues for their interest in our paper recently published in *Circulation Journal*.[1] We would like to point out that the objective of our study was to simply examine whether the apnea hypopnea index (AHI) ≥5 was related to the prevalence of fatal arrhythmic events and all-cause death in spite of respiratory therapy. Thus, we used the group names of "AHI ≥5 group" but not "sleep-disordered breathing (SDB) group", "AHI ≥5 group" but not "non-SDB group" in our study.[1] We defined the primary outcome of our study as fatal arrhythmic events (ventricular fibrillation, sustained ventricular tachycardia and sudden death) and the secondary outcome as all-cause death. If the primary endpoint was met without death, the patient was kept for the secondary endpoint, and if the secondary endpoint was fulfilled, the study was completed for the patient. In accordance with the definition, we counted 4 patients who died (ventricular fibrillation (n=2), sudden death (n=2)) in both the fatal arrhythmic events and all-cause death. Because the multivariate proportional hazard analysis showed that AHI ≥5 was a risk factor for fatal arrhythmic events in spite of respiratory therapy, we concluded that fatal arrhythmic events are associated with the severity of SDB.[1] Indeed, some risk factors for SDB have been reported and recent studies showed that renal function and arterial fibrillation were clinical predictors for SDB.[2–4] However, we found no difference in the prevalence of arterial fibrillation between the AHI ≥5 group (23%) and AHI ≥5 group (13%) in our study.[1] As pointed out, our study had several limitations. In their paper, Nerfeldt et al described the non-attached type 3 monitoring system as insufficient to rule out OSA.[5] On the other hand, the non-attached type 3 monitoring system has been reported as reliable by El Shayeb et al; they found in their meta-analysis that the type 3 portable devices showed good diagnostic performance compared with the type 1 polysomnography in adult patients with a high pretest probability of moderate to severe obstructive sleep apnea.[6]

A randomized control study is a well-designed clinical trial to examine clinical problems.[7] However, our study was a prospective but not a randomized trial and was performed in a single center with a small number of patients. We agree that a study with a better design and larger sample size may solve the issues raised. Finally, we again thank these readers for their valuable comments on our work.

Conflict of Interest

None.

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