



How to predict response to adaptive servo-ventilation therapy?

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To editor:

The clinical outcomes of adaptive servo-ventilation (ASV) therapy are controversial. Large-scale randomized control trials including the SERVE-HF did not show clinical advantages of ASV therapy [1], whereas various Japanese studies among carefully selected patients demonstrated favorable clinical outcomes [2]. A key for the optimal ASV therapy would be a minimum necessary positive pressure setting for the patients with pulmonary congestion [3].

Hiasa et al. showed the significant reduction of readmissions and medical costs during ASV therapy [4], which was performed not for the treatment of sleep disorder, but for pulmonary congestion at default pressure setting [5]. Although it is uncertain how they assessed the pulmonary congestion, elevated E/e' ratio (18.4 ± 7.2) may indicate increased cardiac preload at baseline in most of the patients.

In their study, they identified 4 clinical non-responders, who were significantly older than 33 responders. Physical assessment, as well as any other conventional procedures, may have limitation for the accurate understanding of pulmonary congestion, particularly for the elder population [6]. In other word, accurate procedure to quantify the severity of pulmonary congestion may be required for the optimal patient selection of ASV therapy.

The remote dielectric sensing (ReDS) is a noninvasive electromagnetic-based technology that can quantify lung fluid content (Fig. 1) [7]. Our team recently demonstrated that the ReDS cutoff value of 34% had an ability to identify pulmonary capillary wedge pressure ≥ 18 mmHg with sensitivity of 90.7% and specificity of 77.1% [8].

Although there is no clinical data, ReDS technology may be a good tool to identify the responders with significant pulmonary congestion, which is a target of ASV therapy.

Fig. 1 Remote dielectric sensing system: a vest and monitor to show data



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This technology may also be useful for the follow-up during ASV support, i.e., a decrease in the ReDS value may be good timing to terminate ASV therapy.

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