



Obesity hypoventilation syndrome in the Korean intensive care unit: rare disease or simply overlooked?

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Obesity hypoventilation syndrome (OHS) is defined by obesity (body mass index [BMI] ≥ 30 kg/m²) and awake daytime hypercapnia (PaCO₂ ≥ 45 mmHg), once alternative neuromuscular, mechanical, or metabolic explanations for hypoventilation have been excluded [1,2]. The clinical consequences of OHS are not trivial. Patients with OHS have greater levels of pulmonary hypertension, cor pulmonale, and metabolic comorbidity; consume more healthcare resources; and die earlier compared to eucapnic obese patients with OSA [3]. Crucially, OHS is treatable: positive airway pressure (PAP) therapy, whether continuous PAP or noninvasive ventilation, together with weight reduction, corrects hypercapnia, relieves symptoms, and improves survival [4]. Because effective therapy exists, the diagnosis should be established early and every delay in making it carries a measurable cost.

In practice, however, OHS remains consistently under-recognized and underdiagnosed. The estimated prevalence of OHS in Western countries is 8–20% among obese patients with OSA and 0.4% in the general adult population [2]. In acute care settings, the figures are higher. For example, obesity-associated hypoventilation was identified in nearly one-third of hospitalized severely obese patients in one prospective study [5]. The principal barrier to early diagnosis is the need to confirm daytime hypercapnia using arterial blood gas analysis, which is rarely performed until respiratory failure becomes clinically apparent. Data on Asian populations remain exceedingly scarce, which suggests that the condition is underdiagnosed in this demographic – a critical gap that is becoming important as obesity prevalence in Ko-

rea continues to rise.

Lee et al. [6] provide valuable insights into the prevalence and clinical outcomes for OHS in a Korean medical intensive care unit (MICU). Probable OHS was identified in 0.4% of all 3,660 MICU admissions to a tertiary referral hospital over eight years, 3.0% of patients with a BMI ≥ 27 kg/m², and 6.5% of those with a BMI ≥ 30 kg/m². Of the 16 patients with probable OHS, only one had been diagnosed with OHS prior to ICU admission and two were newly diagnosed with OHS while they were in the ICU. The majority of patients meeting the probable OHS criteria went unrecognized during their ICU stay, which meant that many patients were discharged without appropriate PAP therapy. The study highlights a critical gap in real-world clinical practice: the profound under-recognition of OHS. Furthermore, although patients with probable OHS presented with lower initial illness severity compared to their non-OHS obese counterparts, they paradoxically tended to have longer hospital stays (40 vs. 24 days). This prolonged hospitalization underscores the clinical cost of missed diagnoses. The study also revealed that obstructive airway diseases were more prevalent in the probable OHS group. In clinical settings, hypercapnic respiratory failure in obese patients is frequently misclassified as an acute exacerbation of chronic obstructive pulmonary disease or asthma. Such misclassification may delay initiation of PAP therapy while exposing patients to unnecessary treatments such as systemic corticosteroids.

Although the study provides valuable information about OHS in Korea, it also has inherent limitations. It is difficult to generalize the results to the broader Korean population because it is a single-center retrospective analysis. Furthermore, the reliance on arterial blood gas analysis and serum bicarbonate levels around the time of admission limits diag-

nostic precision because multiple confounders for acid-base imbalances may transiently exist.

A notable strength of this study is its definition of obesity. Nearly all previous OHS research has relied on a BMI ≥ 30 kg/m², a cut-point derived from Western populations. However, East Asians have a higher proportion of body fat and greater visceral adiposity at any given BMI and develop obesity-related complications at lower thresholds, which is why both the World Health Organization Asia-Pacific criteria and the Korean Society for the Study of Obesity define obesity as a BMI ≥ 25 kg/m² [7,8]. The same logic applies to sleep-disordered breathing: more restricted craniofacial skeletal dimensions render the upper airway of Asian patients susceptible to collapse at lower degrees of adiposity. This means that severe OSA occurs at BMI values that would be considered unremarkable in Western cohorts [9]. A total of four out of the sixteen cases captured by Lee et al. (25%) had BMIs in the 27–29.9 kg/m² range and were only identified after Lee et al. adopted a threshold BMI ≥ 27 kg/m² [6]. These were patients who would have been invisible under conventional criteria. This result implies that in Korean practice, OHS cannot be screened for based on a clinical impression of morbid obesity alone and it strengthens the argument that ethnicity-specific diagnostic thresholds are needed.

Overall, the authors effectively highlighted both the under-recognition of OHS in Korean clinical practice and the adverse outcomes of these patients. Beyond calling for multicenter prospective studies to better define the epidemiology of OHS in Korea, their findings carry important implications for clinical practice. Serum bicarbonate is an inexpensive and readily available test and should be used more actively as a screening tool to identify obese patients who warrant confirmatory arterial blood gas analysis. Furthermore, clinicians should maintain a high index of suspicion for OHS, not only in patients with a BMI ≥ 30 kg/m², but also in those with more modest degrees of obesity who present with suggestive clinical features or established risk factors. Earlier recognition and timely initiation of PAP therapy could potentially reduce avoidable morbidity and improve long-term outcomes for this treatable disease.

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