Body Mass Index and Hospital Mortality in Korean Critically Ill Patients

Body Mass Index (BMI) has been extensively studied in various populations, but its impact on hospital mortality in critically ill patients, particularly in Asian populations like Koreans, remains controversial. This study aimed to investigate the relationship between BMI and hospital mortality in Korean critically ill patients.

The study was a prospective multicenter cohort study involving 15 medical and surgical intensive care units (ICUs) from the Validation of Simplified Acute Physiology Score 3 in Korean ICUs (VSKI) study cohort. Patients consecutively admitted to ICUs from July 1st, 2010 to January 31st, 2011 were included. BMI was categorized into four groups: underweight (<18.5 kg/m²), normal (18.5-24.9 kg/m²), overweight (25-29.9 kg/m²), and obese (>30 kg/m²).

The median BMI was 22.7 kg/m², with underweight being 11.5%, normal 62.4%, overweight 22.6%, and obese 3.5%. ICU mortality was 14% (573/4,084), and hospital mortality was 20.3% (830/4,084). The unadjusted odds ratios of underweight, overweight, and obese with regard to hospital mortality were 1.782, 0.825, and 0.780 (95% CI = 1.431 to 2.218, p=0.000; 0.677 to 1.004, p=0.055; 0.494 to 1.231, p=0.286). After adjusting for other potential risk factors, underweight remained an independent risk factor for mortality (1.401, 1.075 to 1.827, p=0.013), and obesity was a protective factor (0.512, 0.295 to 0.889, p=0.017). BMI was independently associated with hospital mortality in Korean critically ill patients. Underweight is an independent risk factor, and obesity is a protective factor for hospital mortality in Korea.

Characteristics and Outcomes in Patients Receiving Mechanical Ventilation

This study aimed to investigate the epidemiology and outcomes of patients receiving mechanical ventilation (MV) by analyzing a Korean database from an international study on MV headed by Esteban et al. The study included prospective cohort patients admitted to 13 ICUs of 12 hospitals in Korea who received MV for more than 12 hours between April 1, 2010, and May 31, 2010. During the study period, 282 patients received MV for a median (IQR) duration of 6 (3-9) days. Age was 69 (54-75) years old, 59% were male, and SAPS II was 50 (38-63.5). ICU mortality was 36%. The main reasons for initiating MV were pneumonia (23%), sepsis (16%), and ARDS (10%). Commonly used ventilator modes at initiation were pressure control (40%) and assist-control (31%). The use of pressure-limited modes increased gradually with time on ventilator. Most commonly used sedatives were midazolam (32%) and fentanyl (32%). Neuromuscular block agents were used in 17% of patients at initiation of ventilator, T-piece (68%) and CPAP (14%) were the most common used method for weaning. Re-intubation was performed in 23% of extubated patients, due to increased work of breathing in 47% and ineffective secretion expectoration in 21%.

Majority of patients on MV were elderly patients with severe physiologic derangement resulting in significant mortality. Pressure-limited modes were more frequently used compared to reports from other countries.