ICU
MANAGEMENT & PRACTICE

Effect of Higher Protein Dosing in Critically Ill Patients

The international critical care nutrition guidelines recommend a wide range of protein doses that are based on low-quality evidence. The impact of high-dose protein in critically ill patients is unknown.

A study was conducted to test the hypothesis that a higher dose of protein improves clinical outcomes in critically ill patients. This was an international, registry-based, single-blinded, randomised trial conducted in 85 intensive care units across 16 countries.

The study enrolled nutritionally high-risk adults over 18 years old undergoing mechanical ventilation. The objective was to compare the effects of high-dose protein (≥2.2 g/kg per day) and usual-dose protein (≤1.2 g/kg per day) given within 96 hours of ICU admission and continued for up to 28 days or until death or transition to oral feeding.

Participants were randomly assigned to receive either high-dose protein or usual-dose protein, with stratification based on location. The main efficacy outcome was the time to discharge alive from the hospital, up to 60 days after ICU admission. The secondary outcome was 60-day mortality.

Between January 2018 and December 2021, 1329 patients were randomised, and 1301 were included in the analysis. This included 645 patients in the high-dose protein group and 656 in the usual-dose group. The cumulative incidence of alive hospital discharge 60 days after randomisation was 46.1% in the high-dose group compared to 50.2% in the usual-dose protein group. The 60-day mortality rate was 34.6% in the high-dose protein group compared to 32.1% in the usual-dose protein group. A subgroup effect was observed, with higher protein provision appearing to be particularly harmful in patients with acute kidney injury and higher scores of organ failure at baseline.

The findings of the study show that higher doses of protein to mechanically ventilated critically ill patients did not improve the time to discharge alive from the hospital and may have led to worse outcomes for patients with acute kidney injury and high scores of organ failure.

Source: The Lancet
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