ICU
MANAGEMENT & PRACTICE

Ceftriaxone to Prevent Early VAP in Patients With Acute Brain Injury

Patients with acute brain injury are at high risk of ventilator-associated pneumonia (VAP). The debate surrounding the benefit of short-term antibiotic prophylaxis in this population is a key aspect of the investigation.

The objective of this study was to determine the impact of a single early dose of the antibiotic ceftriaxone on the incidence of early VAP in patients with severe brain injury requiring mechanical ventilation.

The PROPHY-VAP trial was a multicentre, randomised, double-blind, placebo-controlled study conducted in nine intensive care units across eight French university hospitals. The trial focused on comatose adult patients (Glasgow Coma Scale score ≤12) aged 18 years or older requiring mechanical ventilation for at least 48 hours after acute brain injury. Participants were randomly assigned to receive intravenous ceftriaxone 2 g or placebo within 12 hours following tracheal intubation. The primary outcome of the trial was the proportion of patients developing early VAP from the 2nd to the 7th day of mechanical ventilation.

Between October 14, 2015, and May 27, 2020, a total of 345 patients received either ceftriaxone (n=171) or placebo (n=174). Of these, 330 received the allocated intervention, and 319 were included in the analysis (162 in the ceftriaxone group and 157 in the placebo group). One hundred sixty-six participants (52%) were men, and 153 (48%) were women. Adjudication confirmed 93 cases of VAP, including 74 early infections.

The incidence of early VAP was lower in the ceftriaxone group compared to the placebo group. Importantly, no microbiological impacts or adverse effects attributable to ceftriaxone were observed in the study.

The study concludes that in patients with acute brain injury, a single dose of ceftriaxone significantly reduces the risk of early VAP. Based on these findings, it is recommended that an early, single dose of ceftriaxone should be included in prevention bundles for VAP in patients with brain injury requiring mechanical ventilation.

Source: The Lancet
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