

## Hydrocortisone in Severe Sepsis: HYPRESS Trial Results



The results of the first randomised controlled trial investigating the effects of adjunctive early low-dose hydrocortisone to prevent progression to shock in patients with severe sepsis presenting without shock are published in *JAMA* today. There were no significant differences between treatment groups with regard to mortality or length of stay in the ICU or hospital, or mortality up to 180 days. Patients treated with hydrocortisone had a significantly higher risk of developing hyperglycaemia and a lower risk of developing delirium in a post hoc analysis.

The [Hydrocortisone for Prevention of Septic Shock \(HYPRESS\)](#) was conducted in 34 intermediate or intensive care units of university and community hospitals in Germany, including 380 adult patients with severe sepsis who were not in septic shock. The trial ran from January 13, 2009, to August 27, 2013, with follow-up of 180 days until February 23, 2014.

Patients were randomly allocated 1:1 either to receive a continuous infusion of 200mg of hydrocortisone for 5 days followed by dose tapering until day 11 (n = 190) or to receive placebo (n = 190).

The primary outcome was development of septic shock within 14 days. The hydrocortisone dose was the same as that used in two earlier RCTs which showed significant effects on septic shock resolution.

### Results

Hydrocortisone group: 36/170 (21.2%) developed septic shock  
Placebo group: 39/170 (22.9%) developed septic shock

No significant differences were seen for time until septic shock, mortality in the ICU or in the hospital; or mortality at 28 days.

In an accompanying editorial Sachin Yende, MD, MS and B. Taylor Thompson, MD explore the unresolved questions about glucocorticoids for patients without septic shock, and suggest that "it may be time to change direction and consider alternative trial designs to identify glucocorticoid-responsive subtypes and enable greater precision in current intensive care unit practice."

Source: *JAMA*  
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