

## Steroids in Septic Shock

**This guideline describes the indications for the administration of steroid treatment in septic shock.**

In patients with septic shock<sup>1</sup> there is evidence that the addition of **Hydrocortisone 50mg QDS** (total daily dose 200mg) may be associated with a significant improvement in mortality at 90 days.<sup>2</sup>

**The following (SEPSIS-3) definitions can be used to help identify patients who may benefit from this therapy:**

Sepsis is life-threatening organ dysfunction due to a dysregulated host response to infection<sup>1</sup>

Septic shock is a subset of sepsis in which underlying circulatory and cellular/metabolic abnormalities are profound enough to substantially increase mortality.<sup>1</sup>

Septic shock clinical criteria: <sup>1</sup>

Sepsis and (despite adequate volume resuscitation) both of:

- Persistent hypotension requiring vasopressors to maintain MAP greater than or equal to 65 mmHg, and
- Lactate greater than or equal to 2 mmol/L

Trial data has shown hydrocortisone therapy has been associated with **significantly reduced time to discharge from intensive care, time to cessation of mechanical ventilation and time to resolution of shock.**<sup>3</sup>

Patients requiring the equivalent of Noradrenaline > 0.25 µg/kg/min (approx 12ml/hr of 20mg in 250ml) **after volume resuscitation** are thought most likely to benefit from steroid treatment.

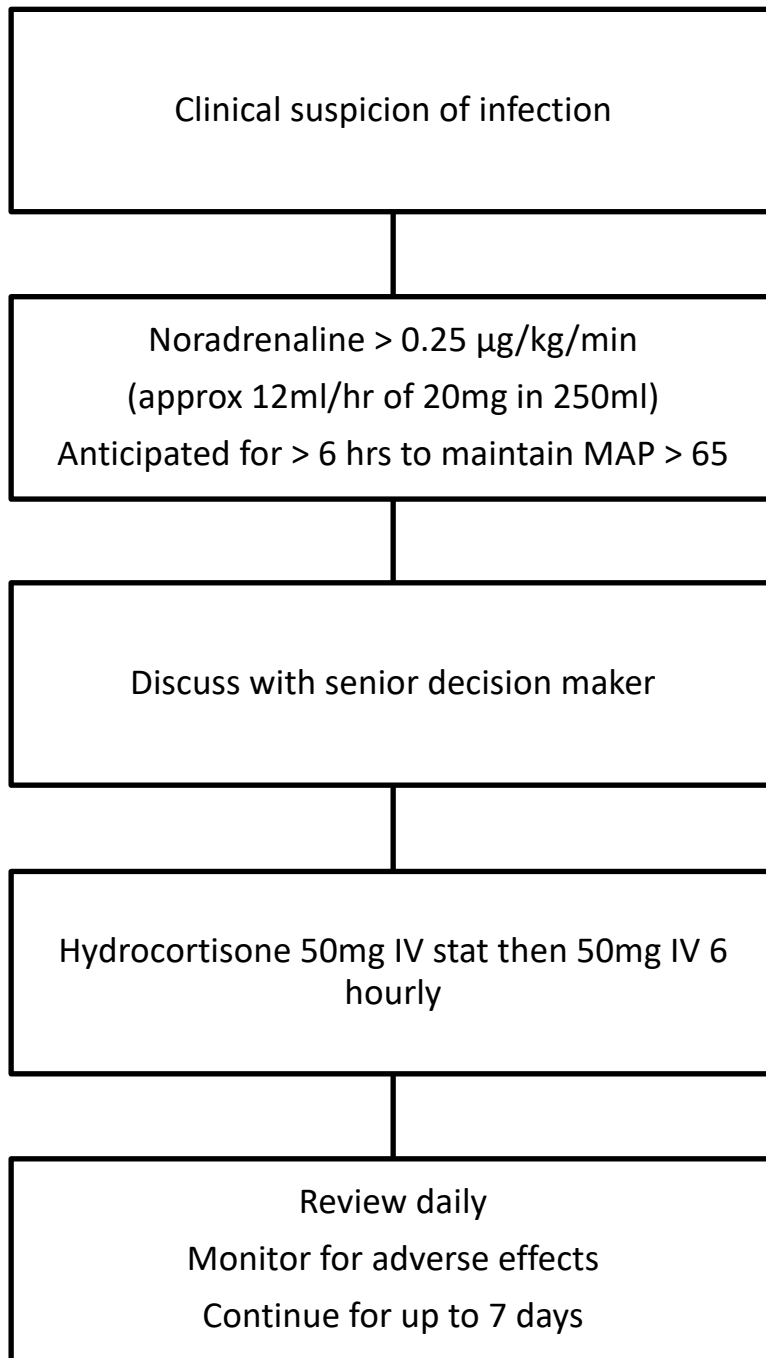
Adverse events associated with steroid therapy are **rare** (approximately 1% of patients treated<sup>3</sup>) but can be significant. These can include:

- Hyperglycaemia (all patients on hydrocortisone therapy should have regular blood glucose monitoring and a variable rate insulin infusion commenced if required)
- Hyponatremia (through actions on mineralocorticoid receptors)
- Encephalopathy
- Neuromuscular weakness
- Surgical wound dehiscence

A suggested algorithm for introducing steroid therapy is shown overleaf. Introduction of steroid therapy should only occur after discussion with a senior member of the medical team, and careful consideration of the risks and benefits of this therapy. Patients prescribed steroid therapy should be monitored for the above adverse effects.

Patients who are taking prescribed steroid therapy prior to admission should continue this therapy at an increased dose during their critical illness. They should not have their prescribed steroids abruptly discontinued.

**Critical Care Guidelines  
FOR CRITICAL CARE USE ONLY**



**References**

1. Singer M, Deutschman CS, Seymour CW, et al. The third international consensus definitions for sepsis and septic shock (Sepsis-3) JAMA. 2016;315:801–810. doi: 10.1001/jama.2016.0287
2. Annane D, Renault A, Brun-Buisson C, et al. Hydrocortisone plus Fludrocortisone for Adults with Septic Shock. N Engl J Med. 2018;378:809-818.
3. Venkatesh B, Finfer S, Cohen J, et al. Adjunctive glucocorticoid therapy in patients with septic shock. N Engl J Med. 2018;378:797-808.

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