



Intravenous immunoglobulins and Corticosteroids for Sepsis: A Systematic Review and Network Meta-analysis

A Systematic Review and Network Meta-analysis
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Key message

Among different corticosteroid regimens and different Intravenous immunoglobulin (IVIG) preparations, only anti-cytokines (very low certainty), and hydrocortisone plus fludrocortisone (moderate certainty) showed effectiveness for reducing short term mortality when compared with standard care. Data on long term mortality, hospital length of stay and ICU length of stay were limited.

Background

IVIG and corticosteroids are the most extensively studied immunomodulators for sepsis. However, the comparative effectiveness of different corticosteroid regimens, different IVIG preparations and standard care in the management of sepsis remains unclear.

Data sources

67 RCTs

24,667 patients (>1 year of age) with sepsis, severe sepsis or septic shock

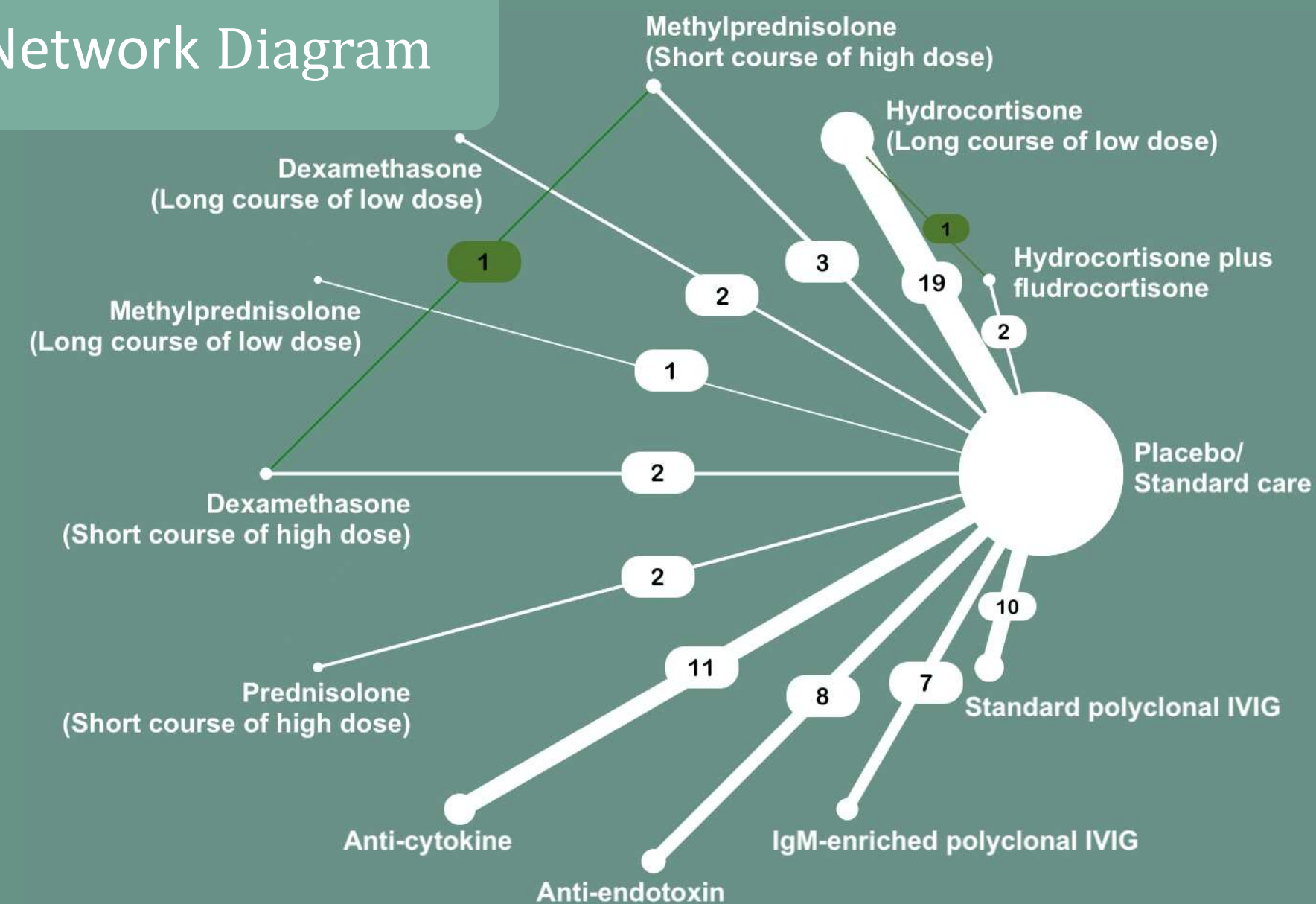
Comparison

Nodes and edges are weighted according to the number of studies including the respective comparisons

Short course of high dose (SH)
>400mg hydrocortisone (or equivalent) daily for ≤3 days

Long course of low dose (LL)
≤400mg hydrocortisone (or equivalent) daily for >3 days

Network Diagram



Results

Compared with **Placebo/Standard care**

Short term mortality (mortality up to 30 days)

Network meta-analysis, Odd ratio with 95% CrI

	0.1	1	7	
Hydrocortisone plus fludrocortisone		◆		0.79 (0.61, 1.00) ⊕⊕⊕⊕
Hydrocortisone (LL)		◆		0.97 (0.83, 1.10) ⊕⊕⊕⊕
Methylprednisolone (LL)	◆			0.41 (0.12, 1.30) ⊕⊕⊕⊕
Methylprednisolone (SH)		◆		1.30 (0.90, 1.90) ⊕⊕⊕⊕
Dexamethasone (LL)	◆			0.62 (0.26, 1.30) ⊕⊕⊕⊕
Dexamethasone (SH)		◆		1.40 (0.40, 6.50) ⊕⊕⊕⊕
Prednisolone (SH)	◆			0.82 (0.34, 1.80) ⊕⊕⊕⊕
Anti-cytokine		◆		0.87 (0.77, 0.99) ⊕⊕⊕⊕
Anti-endotoxin		◆		0.96 (0.80, 1.10) ⊕⊕⊕⊕
Standard polyclonal IVIG		◆		0.96 (0.67, 1.30) ⊕⊕⊕⊕
IgM-enriched polyclonal IVIG		◆		0.84 (0.54, 1.30) ⊕⊕⊕⊕

Consistency test: No statistical inconsistency

Sensitivity analysis: Similar results on patients with septic shock, or on adults, or on studies with ICU settings

GRADE score
Moderate ⊕⊕⊕⊕
Low ⊕⊕⊕⊕
Very low ⊕⊕⊕⊕