

Effect of prophylactic high-dose methylprednisolone on postoperative delirium in elderly patients undergoing hip fracture surgery; a double-blind, randomised, placebo-controlled trial.

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Christopher Clemmesen, Troels Haxholdt Lunn, Morten Tange Kristensen, Henrik Palm, Nicolai Bang Foss

Department of Anaesthesiology, Hvidovre Hospital; Department of Anaesthesiology, Hvidovre Hospital; Departments of Physiotherapy & Orthopaedic Surgery, Hv; Department of Orthopaedic Surgery, Hvidovre ; Department of Anaesthesiology, Hvidovre Hospital

Background: Postoperative delirium is a common complication in elderly patients after hip fracture surgery. Neuroinflammation due to stress response might be a key element in the pathophysiological mechanisms to most postoperative delirium.

Purpose / Aim of Study: If prophylactic high single dose methylprednisolone could attenuate the stress response and thereby lower the severity of postoperative delirium in elderly patients after hip fracture surgery.

Materials and Methods: A randomised, double-blind, placebo-controlled trial. Patients were aged ≥ 65 years, admitted with hip fracture and able to give informed consent. They were allocated to receive either i.v. methylprednisolone (125 mg), or placebo as soon as possible after admission and confirmed hip fracture. The primary outcome was severity of postoperative delirium assessed once daily with the Confusion Assessment Method delirium severity scoring system for the first three postoperative days.

Findings / Results: 117 patients were included in modified intention-to-treat analyses of the primary outcome. There was no significant difference in median cumulated CAM-S score between the methylprednisolone group (1 [IQR 0-6]) and the placebo group (2 [IQR 0-9.5]), $p=0.294$. The incidence of postoperative delirium (defined as CAM-S > 5) was significantly lower in the methylprednisolone group (10 out of 59 [16.7%]) compared with the placebo group (19 out of 58 [31.7%]) odds ratio [OR] 2.39, 95%CI 1.00 to 5.72; $p=0.048$). The median cumulated postoperative fatigue score was significantly lower in the methylprednisolone group (5 [IQR 2-6]) compared with the placebo group (6 [IQR 4-8]), $p=0.008$.

Conclusions: Prophylactic high-dose methylprednisolone to elderly patients with hip fracture might have a preventive effect on postoperative delirium and fatigue after surgery.

No conflicts of interest reported