

Steroids for the prevention of postpericardiotomy syndrome: a meta-analysis

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Background: Postpericardiotomy syndrome (PPS) can occur in up to 40% of patients after cardiac surgery. Corticosteroid therapy has long been used for pericarditis and pericardial effusion due to its anti-inflammatory properties. The benefit of corticosteroids for the prevention of post pericardiotomy syndrome (PPS) is not consensual.

Purpose: We performed a systematic review and meta-analysis of trials assessing the efficacy of corticosteroids to prevent PPS in patients submitted to cardiac surgery.

Methods: We searched MEDLINE, Google Scholar and the Cochrane Library databases using the key terms "corticosteroids" and "post pericardiotomy syndrome" without language or date restriction. Articles were considered for inclusion in the analysis if they comprised a population of patients submitted to cardiac surgery and a comparison between patients treated with corticosteroids for the prevention of PPS and those who were not. Three studies were identified, comprehending a total of 1268 patients. The primary endpoint was the occurrence of PPS. Pooled odds ratios (OR) and 95% confidence intervals (CI) were estimated based on a random effects meta-analysis and were obtained from the pooled adjusted OR of primary studies.

Results: Studies included in the analysis comprehend a controlled randomized trial in children (1 mg/kg methylprednisolone pre-operative and four additional doses over 24h vs placebo); a controlled randomized trial in adults (1 mg/kg dexamethasone intra-operative vs placebo) and a retrospective study in adults (1 mg/kg intra-operative methylprednisolone vs standard care). Of the total 1268 patients included, 641 received glucocorticoids for the prevention of PPS. Main reason for surgery was correction of a congenital heart defect in 19% of the patients; coronary artery bypass graft in 15% and valvular disease in 66% of the cases. 217 patients had PPS during the follow-up time; 15% in the corticosteroid prophylaxis group and 18% in the placebo/standard care group. Overall, corticosteroid prophylaxis was not useful for the prevention of PPS compared to placebo/standard care (pooled OR: 0.78, 95% CI: 0.51–1.20, I² = 46%) – Figure 1.

Conclusion: According to our data, steroid therapy has no role as a preventive therapy of post-pericardiectomy syndrome.

Abstract Figure 1 - Pooled analysis

