

Controversies in Prophylaxis and Treatment of Post Surgical Pericardial Syndromes: a Critical Review with a Special Attention to the Paediatric Age.

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Background: post-surgical pericardial syndromes (PSPS) are common complications after cardiac surgery, however their pharmacological treatment remains controversial. We reviewed the accuracy and limits of clinical trials over prophylaxis and treatment of PSPS with the aim to identify (if feasible) a therapeutical flow-chart.

Methods: A computerized literature search in the National Library of Medicine using the keywords pericardial effusion +/- cardiac surgery +/- paediatric/congenital.

We redefined the research adding separately the keywords *post-pericardiotomy syndrome (PPS)*, *anti-inflammatory-drugs*, *non-steroidal anti-inflammatory-drugs (NAIDs)*, *steroids*, and *colchicine*.

Case reports, and studies not entirely constituted by post-surgical patients were excluded.

Results: We identified 12 clinical trials for PSPS prophylaxis (8 works) and treatment (4 works). Three majors classes of agents have been tested: NSAIDs, corticosteroids and colchicine.

Studies regarding PSPS treatment present many limitations: end-points were not homogeneous (not allowing a metanalysis), only a few agents (NAIDs and corticosteroids) have been tested in randomized controlled trials (RCT), some studies considered only specific age/disease sub-groups, and different agents have never been compared in the same protocol.

NSAIDs have been employed in 3 RCT in adults with contrasting results (2 studies proved benefits, 1 did not), while no studies were conducted in children.

Despite a widespread use of steroids in cardiac surgery, especially in children, only one small paediatric study instead proved prednisone effectiveness in PPS treatment.

As far as PSPS prophylaxis is concerned, robust evidences from two wide RCT support and a recent metanalysis support the role of colchicine in adults.

On the contrary prophylaxis with NAIDs and corticosteroids failed to prove significant advantage in children, while a few data are available for adults.

Conclusions: Evidences for the treatment of PSPS are fragmentary and incomplete. As a result, on the basis of actual knowledge, it results difficult to understand when to treat and which agent to employ, especially in children. Treatment is usually based on personal experience and institutional practice with NAIDs generally employed first and steroids reserved for more severe forms of PSPS or recurrences. Further wider and multi-agents studies are advised in order to establish a therapeutical flow-chart for the treatment of PSPS.