Diagnosis of Acute Myocardial Infarction after Coronary Artery Bypass Graft (CABG) Surgery: A Systematic Review

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Introduction: Myocardial infarction after coronary artery bypass grafting is a serious complication and one of the most common causes of perioperative morbidity and mortality. Multiple mechanisms have been proposed to explain myocardial injury after CABG**.** Diagnosis will be established according to creatine kinase (CK) values more than five times the 99th percentile of the normal reference range during the first 72 hours following CABG, (or Troponin or CKMB more than ten time increase) when associated with the appearance of new pathological Q-waves or new left bundle-branch block (LBBB), or angiographically documented new graft or native coronary artery occlusion, or imaging evidence of new loss of viable myocardium, should be considered as diagnostic of a CABG related MI.

Objectives: to identify the methods of diagnosis of post coronary artery bypass graft (CABG) acute myocardial infarction.

Data sources: MEDLLINE (PubMed), EMBASE, Google Scholar and the Cochrane Library and all materials available in the internet till 2017.

Study selection: this search presented 23 eligible studies which studied the diagnostic methods for acute myocardial infarction after coronary artery bypass graft (CABG) surgery.

Data extraction: if the studies did not fulfill the inclusion criteria, they were excluded. The methodological quality of included studies was assessed using an adjusted QUADAS-tool.

Data synthesis: comparisons was made by structured review with the results tabulated.

Coclusion: Troponin I and T can both be used to indicate myocardial damage, with the level correlating well with the level of injury. However until issues such as a 'gold standard' for peri-operative MI are addressed, one single cut-off point cannot be recommended for either test.

Key words: (coronary artery bypass/OR CABG/ OR cardiac surgical procedures/ OR coronary bypass OR cardiac surgery) AND (troponin OR Troponin T/OR Troponin I OR TnI OR TnT) AND (Myocardial Infarction/OR MI/ OR myocardial damage OR myocardial injury) AND (postoperative OR perioperative) AND (diagnosis OR diagnostic methods).

References:

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