BIOMARKERS IN CARDIAC SURGERY AND MYOCARDIAL REGENERATION AFTER CORONARY ARTERY BYPASS GRAFTING

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Coronary artery bypass grafting (CABG) is worldwide performed procedure for ischemic heart disease treatment. Nevertheless, there are a lot of issues. The challenge is to decrease cardiac complications namely postoperative acute myocardial infarction which occur in 4-8% cases [1]. Searching of early serum predictor of reversible intraoperative myocardial ischemic reperfusion injury may assess myocardial regeneration ability and predict outcomes of surgical procedure [2].

Aim. To assess myocardial regeneration ability with plasma protein profile and ischemic reperfusion injury after off- and on-pump CABG.

Material and methods During clinical trial Assessment of Myocardial Ischemic-Reperfusion Injury During Off- and On-Pump CABG, identifier: ClinicalTrials.gov NCT03050489 with 200 participants was performed protein profile analyses before and after off- and on-pump CABG and assessed surgical outcomes.

Results There is plasma protein profile (troponin I, myeloperoxidase, C-reactive protein and others proteins) which shows pattern of worse surgical outcomes. Myocardial ischemic reperfusion injury was measured by speckle-tracking technique. Troponin I level elevation was higher in on-pump group whereas in off-pump group it was lower but in acceptable level. It was found that level of myeloperoxidase in plasma was higher in group with elevated level of troponin I (>9 ng/ml). Despite of higher level of troponin I in on-pump group there were no differences in mortality, inotrope dosage, hospital and intensive care unit length of stay with off-pump group. One of the important issues is to looking for early blood predictor of worse CABG outcomes which can predict regeneration ability during surgical procedure and can aid to choose optimal surgical approach.

References:

Keywords: biomarker, Parkinson’s diseases, miRNA, binding sites cluster, target gene

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