

Mean Arterial Perfusion Pressure in relation to Cerebral Ischemia and Kidney Injury

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Objective: The objective of this randomized clinical trial of elective coronary artery bypass grafting (CABG) patients was to investigate, whether mean arterial perfusion pressure (MAPP) below 60 mmHg could lead to cerebral ischemia and impaired kidney function postoperatively. Patients were randomized to a low MAPP group (LP), 40-60 mmHg or a high MAPP group (HP), 60-80 mmHg.

Methods: A total of 21 low risk patients (age>60 years) undergoing primary CABG were randomized to either the LP group (n = 10) or the HP group (n = 11). The impact of the two MAPP strategies was assessed by measuring rSO₂, S100Beta and creatinine. Results were analysed using simple comparison with t-test and Fisher's exact test. A p-value of <0.05 was considered statistical significant.

Results: The LP and HP group were comparable in relation to demographical and clinical factors. Significant differences were observed regarding MAPP (p<0.000001), use of norepinephrine (p=0.050), lowest haematocrit (p=0.02) and creatinine 24 hours postoperative (p=0.049). No significant difference was seen regarding S100Beta (p=0.98) or NIRS (p=0.42/p=0.50)

Conclusion: We were not able to conclude that conduct of CPB at MAPP below 60 mmHg leads to cerebral ischemia and impaired kidney function.

Keywords: Low perfusion pressure; CABG; Cardio Pulmonary Bypass