

Custodial Versus Conventional Cardioplegia for Myocardial Protection during Coronary Artery Bypass Grafting

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ABSTRACT

AIM:

We aimed to compare the clinical outcome of early coronary artery bypass grafting (CABG) using blood cardioplegia versus Custodial solution for myocardial protection in patients with recent ST elevation myocardial infarction (STEMI).

METHODS:

This prospective comparative study included 100 patients with recent STEMI who underwent early CABG between January 2019 and December 2020. The patients were divided into two groups: group A (n=50) received blood cardioplegia and group B (n=50) received Custodial-HTK crystalloid cardioplegia.

RESULTS:

There were non-significant differences in postoperative mortality and complication rates between both groups except for significantly higher proportion of postoperative arrhythmia after Custodial cardioplegia (26% vs 8%, $P = 0.01$). Custodial associated with significantly lower levels of blood Troponin and higher levels of blood Lactate for 6 hours after CABG. Custodial results in significantly shorter durations of mechanical ventilation (11.98 ± 4.03 vs 18.28 ± 8.84 hours, $P < 0.001$) and ICU stay (70.04 ± 14.80 vs 80.20 ± 19.91 hours, $P = 0.01$), with non-significantly shorter duration of post-operative hospital stay (7.98 ± 2.76 vs 9.24 ± 3.41 days, $P = 0.06$).

CONCLUSION:

Custodial as a single shot offers shorter durations of mechanical ventilation and ICU stay than blood cardioplegia, with more acceptable levels of postoperative Troponin.