

## COLD VERSUS WARM CARDIOPLEGIA IN CABG OPERATIONS

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### Abstract

**Objective:** The objective of this study is to prospectively evaluate two different cardioplegia techniques: intermittent cold cardioplegia and warm blood cardioplegia

**Patients and Methods:** During the period between 2008 and 2011, 35 consecutive patients undergoing elective CABG were studied in a prospective randomized trial. The patients were randomized in 2 groups: group I (20 patients) received intermittent cold crystalloid cardioplegia (15 °C), and group II (15 patients) received undiluted warm blood (37 °C), antegrade cardioplegia enriched with potassium and magnesium.

**Results:** Patients were predominantly male and the mean age was 56±5 years in group I and 54±5 years in group II. There was no significant statistical difference between the 2 groups as regard the risk factors for CAD (smoking, hypertension, diabetes and hyperlipidemia). Preoperative ejection fraction (EF) was 54±2% in group I and 52±2% in group II with P=0.380338 (NS). The cross clamp time was 55±5 min in group I and 53±6 min in group II with P=0.429421 (NS). The CPB time was 99±16 min in group I and 95±17 in group II with P=0.108781 (NS). Vasoconstrictive drugs were used in 7 patients (35%) in group I as compared to 5 patients (33%) in group II with P>0.05 (NS). The total volume of crystalloid solution infused during CPB was 1332 ±309 ml. for group I and 1520±227 ml. for group II with P=0.000263(HS). Hematocrit value during CPB was 29±2% in group I and 32±3% in group II with P=0.037741(S). The patients continued on mechanical ventilator for 9±1 hours in group I and 8.5±1 hours in group II. The postoperative chest tubes drainage was 460±153 ml in group I and 530±59 ml in group II with P=0.086227(NS). Hematocrit value after CPB was 35±4% in group I and 34±3% in group II with P=0.505103(NS). The patients stayed in the ICU for 2.9±0.6 days in group I and 3.2±0.5 days in group II with P=0.334282(NS). There is no statistical difference between the 2 groups before aortic cross-clamping as regard serum lactate and troponin I. One minute after aortic unclamping, the serum lactate was 0.9±0.3 mmol/L in group I and 0.7±0.4 mmol/L in group II with no significant difference (P>0.05). Troponin I was 0.4±0.3 ng/L in group I and 0.6±0.3 ng/L in group II with P>0.05(NS).

**Conclusion:** The findings of our study did not reveal any significant difference between the warm blood cardioplegia and the cold cardioplegia in terms of myocardial protection, either for clinical or biological data