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Tepid Versus Cold Blood Cardioplegia in Patients with Low Preoperative Ejection Fraction

Rahmi ZEYBEK[1,2]
Egemen TÜZÜN[2]
Tayfun ADANIR[3]
İhsan İŞKESEN[2]
Mert KESTELLİ[1]
Department of [1]Thoracic and Cardiovascular Surgery, [3]Anesthesiology and Reanimation, Atat.rk State Hospital, Izmir, [D]epartment of Thoracic and Cardiovascular [2]Surgery, Celal Bayar University Medical Faculty, Manisa - TURKEY

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Authors

medsci@tubitak.gov.tr

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Abstract: Patients undergoing aortocoronary bypass surgery were randomly assigned to receive cold (+10 ^{o}C, Group A, n: 36) or tepid (+29 ^{o}C, Group B, n: 47) blood cardioplegia. The preoperative ejection fraction of all the patients was under 40%. Cardioplegic solution was delivered in antegrade and retrograde fashion in both groups. The myocardial protective effects of these 2 different cardioplegic temperatures were compared in terms of the postoperative cardiac index and left ventricle stroke work index, dopamine and dobutamine requirements in the intensive care unit, intra aortic balloon pump requirement, intensive care unit stay length and mortality ratios. The daily mean cardiac index and left ventricular stroke work index values of Group B were significantly higher than those of Group A for the first and second postoperative days ($p<0.0001$). The daily mean dopamine and dobutamine requirements of the Group B were significantly lower than those of Group A for the first and second postoperative days ($p<0.0001$). The mean intensive care unit stay was 3.6 ± 0.8 days for Group A and 2.9 ± 0.7 days for Group B ($p<0.0001$). The postoperative intra aortic balloon pump requirement and mortality did not differ between the 2 groups. We concluded that tepid blood cardioplegia reduces the need for postoperative positive inotropic support and the required intensive care unit stay length. Therefore, it provides better myocardial function than cold blood cardioplegia in patients who undergo aortocoronary bypass surgery with low preoperative ejection fraction.

Key Words: Myocardial protection, tepid car- dioplegia, aortocoronary bypass

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