Myocardial protection during open heart surgery using intermittent antegrade warm blood cardioplegia

Osama Abo-El Kass Ahmed, Hussin Gassar, Mahmoud El-Batawy, Wagih Saad El Boray

Cairo University
Giza, Egypt

Doctorial (PhD) Thesis, 2001

Abstract

The initial goal of myocardial preservation techniques is to minimize ischemic damage during the surgical procedure. This goal has been achieved by using hypothermia as a standard method of myocardial protection for many years. Warm heart surgery was introduced in recent years as an alternative way for fulfilling this goal particularly in high risk cases. Fifty patients were randomized in this study, and were arranged into one of two groups. The warm group (n=25) received intermittent antegrade warm blood cardioplegia at systemic normothermia, and the cold group received intermittent antegrade cold crystalloid cardioplegia at systemic hypothermia; clinical and metabolic study have been carried to evaluate the myocardial protection in the two groups. The warm cardioplegic technique provides better myocardial protection, the intraoperative myocardial recovery, and the postoperative myocardial performance in terms of low incidence of conduction disturbance, less inotropic support, and less release of cardiac isoenzyme CK-MB denotes significant myocardial preservation and less myocardial injury. So, it was concluded that intermittent antegrade warm blood cardioplegia at systemic normothermia is superior for myocardial preservation and it is a safe technique.

Keywords

Myocardial preservation, warm heart surgery, intermittent antegrade warm blood cardioplegia, normothermic cardiopulmonary bypass.