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The value of preoperative administration of aminophylline as a cardio protective agent during coronary artery bypasses grafting

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Objectives: Myocardial ischemic reperfusion injury remains the most uncontrolled aspect of cardiac operations. This study aims at testing the hypothesis that aminophylline could serve as a potential myocardial protector against reperfusion injury during coronary artery bypass grafting (CABG).

Methods: A prospective, randomized, single blinded, placebo - controlled study involving 60 patients divided into two groups. Group A (30 patients) preoperatively received aminophylline, 200 mg orally per day for 3 days with a total dose of 600 mg. Group B (30 patients) was given placebo. All patients underwent uniform pre/intra/post-operative management. Assessment of cardiac markers (Troponin I) and cardiac enzymes were done before induction of anesthesia, after 30 min of aortic cross clamping and postoperatively (1, 24 and 48 hours). Preoperative concentration of aminophylline in serum was measured. Postoperative, 12 lead ECG after 48 hours and echocardiographic full study examination at the 6th day were examined.

Results: Total ICU stay hours and ventilation hours were statistically higher (p-value<0.05) in group B (67.20 ± 21.28 and 16.47 ± 8.76 hours, respectively) than in group A (46.87 ± 14.46 and 12.20 ± 3.56 hours, respectively). The need of inotropes in group A was lower than that in group B in the immediate postoperative period. However, Troponin I and cardiac enzymes in both groups were of no statistical significant difference (p-value>0.05).

Conclusions: Aminophylline may have beneficial role in CABG surgeries by decreasing the ventilation hours, need of inotropic support and total ICU stay hours. However, there was no relevant impact on cardiac marker and enzymes.

Biography

Sherif A S A Mansour is a Consultant of Cardiothoracic Surgery in Ministry of Health Hospitals, in addition to working as a Surgeon in Royal Stoke Hospital, Stoke-on-Trent, UK. He works at Ain Shams University in Cairo, Egypt as a Senior Lecturer. He is subspecialized in Off Pump CABG, minimal invasive cardiac surgery with fantastic results and many contributions to various cardiac surgery centers in the Middle East, Asia and Africa. He has publications in the peer reviewed journals and contributions in some published cardiothoracic books with many contributions at international conferences across Europe and Asia. Recently, he started to explore the field of Robotic Heart Surgery with strong steps toward achieving his goal of mastering it.

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