ABSTRACT

Cardiogenic shock (C. shock) following acute myocardial infarction (MI) still carries a high mortality rate despite advances in pharmacotherapy including thrombolytic reperfusion, the prompt availability of diagnostic angiography and therapeutic interventions i.e. (primary PCI) with or without the support of circulatory augmentation using intra aortic balloon counter pulsation (IABC). The clinical benefits of the latter procedure are related to the augmentation of the coronary diastolic perfusion and the unloading effect of the pre-systolic sink. The purpose of the present study was to assess in an objective way the positive effects (if any) of the IABC on real cardiac haemodynamics as measured by the tissue Doppler technique in cardiogenic shock. Twenty patients with C. shock complicating acute MI not more than 48 hrs after MI constituted the material of the present study (12 males and 8 females, mean age 55.95±13.12 yrs). Pts were divided on alternate bases into two groups, with and without IABC. Following clinical and laboratory evaluation, all pts were started on vasoactive and/or inotropic therapy and rolled into the cath laboratory for diagnostic coronary angiography. Primary PCI without circulatory augmentation was performed in 10 pts and followed by IABC in 10 pts. Tissue Doppler imaging (TDI) and M-mode to measure cardiac dimensions and function, were performed before and within one hour following PCI. A non-significant difference was observed in almost all echo parameters assessed between the two groups of patients on admission. The diastolic blood pressure (BP) of group I pts showed significant improvement from admission readings. Systolic BP of group II pts showed correspondingly higher readings in follow up. Serum lactate decreased significantly with IABC, whereas for group II a non-significant difference was observed between admission and follow up readings. A significant improvement was observed between the admission and follow up readings in group I pts in terms of LVEDd, LVESd, IVSTd, %FS, and %EF. Higher % ↑ in Sm and Em and higher % ↓ in Am was observed in group I in comparison to group II. There was no difference in survival between pts treated with IABC and those who were not. Fifty *per cent* of pts from each group died by the end of the study. Logistic regression analysis has reported the following as final predictors of unfavourable outcome with specificity and sensitivity of 100%: follow up systolic BP ≤ 80, CK ≤1700 and pH ≤ 7.18. In conclusion, despite the obvious immediate haemodynamic benefits of IABC, the short term outcome might not be correspondingly significantly better.

Key word: Cardiogenic shock, myocardial infarction (MI), intra aortic balloon counter pulsation (IABC)