

Intra aortic balloon pump use among female and male in cardiac surgery – retrospective analysis.

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Background:

Intra-aortic balloon pump (IABP) is a well-accepted and widely used mechanical circulatory support in cardiac surgery. In contrast to inotropes, this technique provides physiological assistance to the failing heart by decreasing myocardial oxygen demand. Although it is an invasive technique with several potential complications, it has proven invaluable in improving the results of surgery in high-risk patients.

Methods:

Between August 1998 and August 2005, a total of 320 patients undergoing cardiac operation in University Hospital of Wales in Cardiff received IABP, 192 (60%) preoperatively.

There were 86 (23.9%) females (Group A) and 234 (76.1%) males (Group B). The preoperative risk factors in both groups were studied and analyzed. Multivariate analyses were performed to identify risk factors for in hospital mortality.

Results:

Logistic EuroSCORE was higher in female group 33.6 vs. 27.6 ($p=0.03$). There was no difference in Parsonnet score (13.3 vs. 13.3) and additive EuroSCORE (11.2 vs. 10.5) between two groups.

There was higher in hospital mortality in group A 34 (39.5%) vs. 65 (27.8%) in group B ($p=0.022$).

Females were more likely to have good ejection fraction (EF) 31 (36%) vs. 53 (22.7%) ($p=0.03$), peripheral vascular disease 6 (7%) vs. 6 (2.6%) ($p=0.03$) and permanent pacemaker 6 (7%) vs. 3 (1.3%) ($p=0.003$). The indication for IABP use among females was more frequently hemodynamic instability 27 (31.4%) vs. 43 (18.4%) ($p=0.006$). Males more frequently had two or more myocardial infarcts in the past 9 (10.5%) vs. 46 (19.6%) ($p=0.027$), poor EF 20 (23.3%) vs. 91 (22.7%) ($p=0.005$) and had larger BSA 1.69 (SD 0.16) vs. 1.93 (SD 0.17) ($p<0.001$). Multiple logistic regression analysis revealed gender, age above 80, renal impairment, redo, CHF and IV inotropes prior to anaesthesia as independent risk factors for in hospital mortality.

Conclusions:

Our data reveal that female gender is still risk factor in high-risk patients in cardiac surgery. Rest of risk factors found in our study correlate with EuroSCORE and Parsonnet score, however only logistic EuroSCORE was able to predict higher in hospital mortality among females.