CABG in the Post-Aprotinin Era: Are We Doing Better?

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Objective(s): Aprotinin was the routinely-used prophylactic antifibrinolytic agent in cardiac surgery till May 2008. At that time, the FDA recommended suspending its distribution, due to reports which demonstrated increased morbidity and mortality associated with its usage. The aim of this study was to compare morbidity and mortality between the pre- and post-aprotinin usage eras.

Methods: The routine use of prophylactic aprotinin was ceased at our institute in January 2008. We compared two patient groups, one operated before 2008 (from January 2, 2005, until August 31, 2007), designated as Group A which received aprotinin routinely, and one operated after 2008 (from September 1, 2009, until April 8, 2010), designated as Group B which received tranexamic acid instead. A total of 1134 patients were operated in both periods, of which 360 were elective patients who underwent on-pump CABG (256 patients in group A, 104 in group B).

Results: The groups were comparable in most pre-operative variables, except for CHF (13.5% vs. 3.5%; p=0.001) and previous CVAs (10.6% vs. 3.9%; p=0.023) which were more prevalent in group B. Group B demonstrated significantly larger bleeding values (465±249 vs. 302±155; p<0.0001), and increased requirements for blood transfusions (40.4% vs. 27.8%; p=0.024). A similar rate of post-operative CVAs was recorded (one patient in each group, 1.0% vs. 0.4%; p=0.495). There were higher values of maximal post-operative troponin levels in group B (7.9±13.8 vs. 1.7±4.9; p<0.0001). Acute renal failure (ARF) rates were higher in group B (12.5% vs. 5.5%; p=0.028). There was a trend toward higher mortality in group A (3.5% vs. 2.1% p=0.22).

Conclusions: The abrupt change and usage of tranexamic acid in our institute was shown to result in a significantly greater bleeding tendency which was found to be of clinical significance. In our cohort, the routine use of aprotinin was not associated with a higher incidence of stroke, ARF, post-operative MI or mortality.