

The Efficacy and Safety of Micro-dose Aprotinin in Primary Coronary Artery Bypass Grafting

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Since it was first approved for use during cardiac surgery, there has been controversy surrounding aprotinin. Several meta-analyses have found a significant reduction in peri-operative blood loss. Others have shown an increase in mortality, myocardial infarction and acute kidney injury attributed to the use of aprotinin.

There have been several works comparing the full dose recommended by the manufacturer, and a smaller dose administered only through the cardio-pulmonary circuit. At our institution a third regimen is used – the recommended test dose (100,000 units) only.

In light of the recent FDA warning regarding the safety of aprotinin, and the manufacturer's decision to suspend marketing, we reviewed the results of the three different dosing regimens at our center.

The case records of all first time, non-emergent, coronary artery bypass grafting patients between March 1, 2006 and March 1, 2008 were reviewed. A comparison was made between those receiving a test (micro) dose of 100,000 units only (Group 1), those receiving 2,000,000 units in the cardio-pulmonary circuit (Group 2), and those administered the full dose as recommended by the manufacturer (Group 3).

There was no significant difference in age, kidney function, or prevalence of diabetes, hypertension and dyslipidemia between the three groups. Pre-operative Hemoglobin, Hematocrit and coagulation studies also showed no significant difference.

24-hour chest tube output, total chest tube output, re-operations for bleeding, transfusion requirements, change in kidney function and mortality were compared.

No significant p-values were found.

In summary – the use of a micro dose of aprotinin was found to be as effective in reducing peri-operative blood loss with no increase in adverse effects.