

Recombinant FVIIa therapy of major bleedings in cardiac surgery in Iceland.

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Objectives: First line treatment of major bleedings in cardiac surgery usually consists of the combination of procoagulant drugs, anti-fibrinolytic agents and blood products. Such a treatment is not always effective and mortality can be high. Recombinant factor VIIa (Novoseven®) is primarily used for certain bleeding disorders and coagulopathies. It has also been used for major intra- and postoperative bleedings when other treatment has failed, sometimes with promising results. Information is scarce on the use of rFVIIa in cardiac surgery. We studied the indications and results of rFVIIa treatment in cardiac surgery in Iceland.

Materials and Methods: From June 2003 to February 2006, 10 patients received rFVIIa due to major bleeding in cardiac surgery in Iceland. Clinical information was retrospectively gathered from patient charts and operation reports.

Results: Complicated AVR with and without CABG was the most common type of operation (n=5). The average age of the patients was 66 yrs. (range 36-82) and all were in NYHA class III or IV preoperatively. 2 patients were preoperatively on Warfarin or Clopidogrel treatment. 3 patients underwent an urgent operation for live threatening symptoms. Average operation time was 673 min. (range 475-932), perfusion time was 287 min (range 198-615), and X-clamp time 190 min. (range 85-389). The average bleeding was 12.9 L (range 9-18 L) and the patients received 16 units of plasma (range 10-40) and 17 units of packed red cells (range 5-61) in addition to blood from the cardiopulmonary bypass circuit. Haemostasis was acquired in 9 cases after the administration of rFVIIa, with significant improvement in coagulation parameters in 9 cases. Five patients succumbed, one of them secondarily to cerebral thrombosis and pulmonary embolus confirmed at autopsy. Other causes of death were intractable bleeding, myocardial infarction, multiorgan failure and disseminated intravascular coagulopathy.

Conclusions: Advanced age, long operative time and major bleeding (> 9.1 L) characterise cases where rFVIIa has been used in cardiac surgery in Iceland. In all cases rFVIIa was an end-of-the-line treatment where all other therapy had failed. Mortality in this group of patients was high (50%), however, in certain cases the use of rFVIIa seems to be very effective in achieving haemostasis. Further studies on the side effects and indications of rFVIIa treatment are needed, as this recombinant coagulation factor could potentially have induced a fatal venous and arterial thrombosis in one of our patients.