12.16 RECOMBINANT FACTOR VIIa (NOVOSEVEN RT)

BACKGROUND
Recombinant Factor VIIa (NovoSeven, NovoNordisk Australia) is the recombinant form of activated plasma coagulation Factor VII that plays a critical role in the initiation of blood coagulation.

NovoSeven® RT is supplied in vials of 1, 2, and 5 mg as a stable sterile freeze-dried powder in single use vials with a dedicated solvent. NovoSeven® RT can be stored at room temperature up to 25oC. Reconstituted NovoSeven RT should be used immediately. The final concentration after reconstitution is 1mg/ml.

Indications
- Control of bleeding and surgery prophylaxis in patients with inhibitors to coagulation factors VIII and IX.
- Control of bleeding and surgery prophylaxis in patients with congenital FVII deficiency.
- Control of bleeding and surgery prophylaxis in patients with Glanzmann’s Thrombasthenia.
- Massively transfused patients with ongoing bleeding. Where, in the opinion of two consultants, this bleeding is life-threatening despite appropriate blood component therapy to try and correct coagulopathy, pharmacologic measures such as DDAVP and anti-fibrinolytic agents, general haemostatic measures including efforts to correct hypothermia and hypocalcaemia and surgical intervention where appropriate.

Contraindications
- Patients with known hypersensitivity to rVIIa or any of the components of NovoSeven.
- Patients with known hypersensitivity to Mouse hamster or bovine proteins.

Recombinant Factor VIIa Guidelines in Bleeding Patients
rVIIa may be considered in the following situations (each of these criteria should be met):
- Massively transfused patients with life threatening bleeding despite:
- Appropriate blood component transfusion (fresh frozen plasma, platelets cryoprecipitate), pharmacological measures (DDAVP, anti-fibrinolytic agents) and correction of hypothermia and hypocalcaemia.
- Additional surgical intervention where appropriate.

At least two Hospital Consultants (preferably Surgeon, Anaesthetist, Intensive Care Physician, Emergency Department Physician, and Haematologist) consider the condition of the patient to be such that death is likely from bleeding. This should be documented in the patient medical records. A full blood count and coagulation profile (APTT, INR, and fibrinogen) should be available prior to considering the use of rVIIa. If this is not possible then a blood sample should be taken for retrospective testing. The FBC and Coagulation profile should be repeated after the NovoSeven is
administered to assess the response. The patient’s temperature and pH at time of NovoSeven RT administration must be recorded in the notes

DOSE
Refer to Consultant Haematologist.
The most commonly reported dose of rVIIa used for life-threatening haemorrhage in surgical patients is 90 µg/kg body weight, given as an intravenous bolus dose. To minimise wastage, the patient’s weight should be quoted at the time of ordering theNovoSeven and the dose should be rounded to the nearest whole vial.
Occasionally a second dose is required 2-4 hours after the first dose. If the Blood Bank does not have sufficient stock to cover this dose, the scientist will arrange for delivery of additional vials. It is important to note that even after the use of rVIIa, transfusion of further blood components (fresh-frozen plasma, platelets, cryoprecipitate) may need to be given as appropriate.

RECONSTITUTION AND ADMINISTRATION
- NovoSeven® RT is supplied in vials of 1, 2, and 5 mg with a dedicated solvent. Product and solvent vials are colour-coded and are packaged together.
- The solution is clear and colourless after reconstitution. Do not use it if there are particles or discolouration.
- Reconstituted NovoSeven RT should be used immediately.
- The final concentration after reconstitution is 1mg/ml
- NovoSeven is intended for intravenous bolus injection only and should not be mixed with infusion solutions or be given in a drip. Always use aseptic technique.
- The patient’s temperature and pH at time of NovoSeven RT administration must be recorded in the notes.
- Following intravenous injection, the time to peak concentration is 15 minutes. Half life is approximately 2 – 3 hours.

Click for additional Novoseven RT Manufacturer Information
Click for Novoseven Consumer Medicine Information including reconstitution instructions

POTENTIAL SIDE EFFECTS AND ADVERSE EVENTS OR REACTIONS
The administration of rVIIa may rarely be associated with thrombotic complications, including myocardial infarction, stroke, or venous thromboembolism. Maintain vigilance for untoward coagulation/thrombosis. Thrombogenic potential or induction of DIC is possible in conditions associated with circulating tissue factor. FVII deficient patients should be monitored for prothrombin time and FVII coagulant activity before and after administration of NovoSeven. Risk of potential interaction with coagulation factor concentrates is unknown – avoid simultaneous use of prothrombin complex concentrates.
Adverse Reactions: (Clinical Trials) fever, haemorrhage, fibrinogen plasma decreased, haemarthrosis, hypertension. (Post marketing) (each <1/10000) DIC, myocardial infarction, CVA and cerebral ischaemia, arterial and venous thrombotic events. Development of inhibitors for FVII has been reported in a small number of patients after treatment with rVIIa. Any adverse reaction should be reported to the Clinical Haematologist.

COST, REPORTING AND AUDIT
The drug costs are to be borne by the department making the request for NovoSeven. The KEMH Transfusion Committee will audit the use of rVIIa.

REFERENCES
NovoSeven Product Information http://www.novosevenrt.com/