

Policy for the administration of rFVIIa (recombinant factor VII activated, Novoseven™) in uncontrolled haemorrhage.

If you take this product you must inform your Clinical Pharmacist or the Pharmacist on Call so that it may be replaced for future use.

April 08 (updated October 2015)

Adapted from the original protocol written by Jon Train, Consultant Anaesthetist (Nov 2005)

Policy for the administration of rFVIIa (recombinant factor VII activated, Novoseven™) in uncontrolled haemorrhage.

The Trust recognises that good clinical evidence has now become available that exogenous factor VII administration can be beneficial in reducing blood loss in certain situations where adult patients continue to suffer life-threatening haemorrhage after trauma, despite receiving all appropriate conventional therapy.

NovoSeven™ (rFVIIa, eptacog alfa) is not yet specifically licensed for administration in these circumstances but use under this policy and the accompanying guidelines, protocol and audit system is supported by the Trust.

The aim of the policy is to ensure that such adult patients under the care of this Trust are afforded the opportunity to receive this treatment if considered appropriate by clinicians.

Eligible patients for rFVIIa (Novoseven) use must be identified by senior clinicians only i.e. Consultant Medical staff and only under their personal, recorded, supervision will it be administered. Each administration will be monitored and the outcomes audited.

The mechanism of action of rFVIIa (NovoSeven) is thought to be via an interaction with platelets, involving factor X and cofactor Va to produce a “thrombin burst” leading to formation of fibrin and a stable clot at the site of small blood vessel injury. This occurs when supranormal levels of factor VII are present. Clearly it follows that adequate platelet and other factor levels are required for rFVIIa (NovoSeven) to be effective. These guidelines reflect these necessary conditions for effect. Further, rFVIIa (NovoSeven) is considered to be most effective in arresting diffuse haemorrhage rather than frank bleeding due to rupture of major blood vessels. Full surgical evaluation is mandatory prior to use.

Adapted from the original protocol written by Jon Train Consultant Anaesthetist (Nov 2005)

Guidelines for the use of rFVIIa (NovoSeven™)

1. **A Consultant Anaesthetist must contact a Consultant Haematologist to sanction the administration of rFVIIa (NovoSeven) after satisfying themselves that the following conditions have been met:**
 1. Massive bleeding (>10 units PRC transfused in <24hrs) in a patient that continues to haemorrhage.
 2. Persistent coagulopathy due to blood loss despite adequate blood product replacement as indicated by laboratory tests and other guidance.
 3. All feasible surgical, medical or radiological means to control bleeding have been considered or attempted, **short of organ removal. In ALL cases of massive obstetric haemorrhage the use of NovoSeven MUST be considered prior to the decision to perform hysterectomy.**
 4. Blood loss is the immediate threat to life.
 5. No other condition exists which will preclude patient survival beyond 24hrs.
 6. Survival of the episode is in the best interests of the patient
2. **NB Before administering rFVIIa (NovoSeven) the following conditions should be achieved:**
 1. Platelet count >50 ($\times 10^9$)
 2. Fibrinogen >1 (g/l)
 3. pH >7.0
 4. Temperature >35 ($^{\circ}\text{C}$)

Obtaining rFVIIa (NovoSeven)

During normal opening hours contact the ward pharmacist.

In an emergency out of hours rFVIIa (NovoSeven) may be obtained directly from the Emergency Drug Cupboard, but you must contact the on call pharmacist (available 24 hours a day via switchboard) to tell them the stock has been taken. Otherwise, the stock will not be able to be replaced for the next time that it is needed.

A supply of rFVIIa (NovoSeven) is available at the following locations:

1. **Doncaster Royal Infirmary:** In the Emergency Drug Cupboard. This is located in the emergency cupboard in the pharmacy department (old waiting area). The key is held by the nursing staff on AMU.
2. **Bassetlaw Hospital:** In the Emergency Drug Cupboard. This is located inside the first set of double doors leading in to the pharmacy department. The key is held by the nursing staff on ITU (ext 2106) and Ward C2 (ext 2186).

Three vials each of 5mg, 2mg and 1mg rFVIIa (NovoSeven) are kept in each location. If any extra is required, it will be necessary to transfer drug between sites. Contact your pharmacist (on call if necessary) who will arrange this.

Protocol for administration of rFVIIa (NovoSeven)

Dose of rFVIIa (NovoSeven)

The recommended dose of rFVIIa (NovoSeven) is **90 micrograms/kg** as a slow IV bolus. Use the pack supplied with the rFVIIa (NovoSeven) vials to reconstitute the injection, following the directions below. rFVIIa (NovoSeven) is available in 1mg, 2mg and 5mg vials.

- rFVIIa (NovoSeven) is given by slow IV bolus (over two to five minutes). It should **not** be given as an infusion.
- rFVIIa (NovoSeven) should not be mixed with other infusion solutions.
- A coagulation screen should be performed one hour after administration, by which time successful treatment is usually apparent.
- Ongoing transfusion should NOT be slowed or withheld after administration of rFVIIa (NovoSeven) except as clinically indicated: the product is more effective if the circulating volume is optimised with appropriate infusions of packed cells and other blood products.
- Administration of rFVIIa (NovoSeven) **must not be repeated** unless recommended by a Consultant Haematologist.

Reconstitution

Use the pack supplied with the rFVIIa (NovoSeven). This is stored separately with the product in the above locations. Always use an aseptic technique.

1. The powder and solvent vials should be at room temperature before reconstitution. Remove the plastic caps from the two vials. If the caps are loose or missing, do not use the vials. Clean the rubber stoppers on the vials with the alcohol swabs and allow them to dry before use.
2. Take the syringe out of its package. Open the vial adapter pack. Keep the vial adapter in the pack while screwing it tightly onto the syringe. Take care not to touch the tip of the vial adapter.
3. Pull the plunger to draw in a volume of air that is equal to the amount of water in the water vial (ml equals cc on the syringe). Take care not to touch the spike of the vial adapter.
4. Click the vial adapter onto the water vial. To inject the air into the vial, push the plunger until you feel a clear resistance.
5. Hold the syringe with the water vial upside down and pull the plunger to draw the water into the syringe.
6. Remove the empty water vial by tipping the syringe with the vial adapter.
7. Click the vial adapter, still attached to the syringe, onto the powder vial. Hold the syringe slightly tilted with the vial facing downwards. Push the

- plunger slowly to inject the water into the powder vial. Make sure not to aim the stream of water directly at the NovoSeven powder as this will cause foaming.
8. Gently swirl the vial until all the powder is dissolved. Do not shake the vial, as this will cause foaming.
 9. NovoSeven reconstituted solution is colourless and should be inspected visually for particulate matter and discolouration prior to administration.
 10. The enclosed disposable syringe is compatible with the reconstituted preparation, but **do not** store reconstituted NovoSeven in plastic syringes.
 11. It is recommended to use NovoSeven immediately after reconstitution.

Administration

1. Ensure that the plunger is pushed all the way in before turning the syringe upside down (it may have been pushed out by the pressure in the syringe). Hold the syringe with the vial upside down and pull the plunger to draw all the solution into the syringe.
2. Unscrew the vial adapter with the empty vial.
3. NovoSeven is now ready for injection. Locate a suitable site, and slowly inject NovoSeven into a vein over a period of 2-5 minutes without removing the needle from the injection site.
4. Safely dispose of the syringe, vial adapter, vials, infusion set and any unused product, in accordance with local procedure.