Whittington Health NHS

Extended use of recombinant factor VIIa (Novoseven®)

Subject:	Extended use of recombinant factor VIIa (Novoseven®)
Policy Number	N/A
Ratified By:	Clinical Guidelines Committee
Date Ratified:	August 2009, reviewed with no change November 2015
Version:	4.0
Policy Executive Owner:	Clinical Director, Medicine, Frailty and Networked Service ICSU
Designation of Author:	Hospital Transfusion Team
Name of Assurance Committee:	Clinical Guidelines Committee
Date Issued:	November 2015
Review Date:	November 2018 (3 years hence)
Target Audience:	Haematologist, A/E, Intensivists, Anaesthetists, Obstetrics
Key Words:	rVIIa (Novoseven®), Massive blood loss

➢ Criteria for use

For use by haematologists and intensivists in non-contraindicated patients that are experiencing acute massive blood loss which fails to respond to appropriate blood component therapy and surgical management.

➢ Background/ introduction

rVIIa (Novoseven®) is a potentially effective treatment for intractable bleeding (by direct thrombin generation on the platelet surface). It is however unlicensed for this indication. It is also an expensive product and is not suitable for all patients.

rVIIa (Novoseven®) may have a role in rare cases of acute massive blood loss which fail to respond to appropriate blood component therapy and surgical management. Every effort must be made to correct thrombocytopenia and clotting factor deficiencies with appropriate platelet, fresh frozen plasma (FFP) and cryoprecipitate therapy as indicated prior to considering rVIIa (Novoseven®).

➢ Indication for treatment

Clinical Situation:

• Life threatening bleeding due to surgery or trauma or due to an acute spontaneous bleed that persists despite optimal blood component replacement and surgical haemostasis.

The following guidelines may be useful as a guide to optimal blood component replacement but these must not be absolute. However rVIIa (Novoseven®) will be more effective if the platelet count and clotting are as close to optimal as possible.

- *more than 10 units of red cells in under 24 hours and still bleeding significantly.*

- *For use in life threatening haemorrhage - defined as:*

  Blood loss at a rate of 150 ml per minute
  Blood loss at a rate of 1.5ml/kg/min for 20 minutes or more

- at least 2 doses of platelets (if count <50) without any benefit

- and / or 1 litre of fresh frozen plasma (if PT >20sec) without any benefit

and / or 2 pools (10 units) of cryoprecipitate (if Fibrinogen <1 g/l BCSH guidelines)without any benefit

Patients:

• Any patient with bleeding as described above even in the absence of a known inherited or acquired clotting disorder

• Patients with severe trauma and ongoing massive blood loss (e.g. multiple trauma, blunt deep penetrating trauma, pelvic fracture)

	Please see Whittington Health Guideline: ***Major Haemorrhage in Adults***

• Patients with thrombocytopenia who are bleeding despite platelet transfusion or in the presence of platelet refractoriness

• Patients with inherited disorders of platelet function, factor VII deficiency, factor XI deficiency or inhibitors to factors VII or XI

• Patients who have refused blood component replacement (e.g. Jehovah's witnesses) but will accept some blood products particularly if they are of non-human origin such as recombinant products

Obstetric haemorrhage:

• In women with life threatening haemorrhage that persists despite optimal blood component replacement and surgical haemostasis, rVIIa (Novoseven®) must be considered before proceeding to hysterectomy, except in women with an atonic uterus where hysterectomy is the treatment of choice. If excessive haemorrhage is likely, and is not responding quickly to conventional therapy, including intra-myometrial therapy, rVIIa (Novoseven®) can be administered early.

	Please see Whittington Health Guideline: ***Massive Obstetric Haemorrhage***

➢ rVIIa (Novoseven®) must NOT be given in:

• Patients with known hypersensitivity to the active substance, the excipients, mouse, hamster or bovine protein

• Patients with a history of venous thrombo-embolism or a thrombotic tendency.

• Patients with a history of myocardial infarction, stroke or disseminated intravascular coagulation (without discussion with a haematologist)

• Patients with advanced atherosclerotic disease or a recent atherosclerotic event (stroke, myocardial infarction, peripheral vascular disease)

• Patients with known metastatic malignancy

➢ Authorisation of rVIIa (Novoseven®):

The need for rVIIa (Novoseven®) must be discussed with the consultant supervising the care of the patient prior to discussion with the haematologist. The consultant haematologist will authorise the release from blood bank.

➢ Storage of rVIIa (Novoseven® :

The rVIIa (Novoseven®) stock is to be stored in the laboratory blood bank.
The product will be issued on a named patient only basis.

➢ Dose of rVIIa (Novoseven® :

Can be collected, reconstituted and administered within minutes.

The rVIIa (Novoseven®) is dissolved in the accompanying solvent before use. Three 2.0 mgs vials will be issued if the patient is above 50 kg. For a patient between 50 to 100kg in weight this will provide a 45 to 90µg/kg dose.

Initial dose: three 2.0mgs vials of rVIIa (Novoseven®) by bolus over 2 - 5 minutes

If after 2 hours there is a significant response but bleeding has not stopped then a further three 2.0 mg vials may be administered.

If there is no response after 2 hrs a single further dose calculated according to body weight may be administered using the following table:

BODY WEIGHT (Kg)	*Dose required in mg*	Number of 2.0 mg vials
50	*4.5*	3
60	*5.4*	3
70	*6.3*	4
80	*7.2*	4
90	*8.1*	4
100	*9.0*	5

Further administration will only be as a result of combined clinical discussion with a haematologist

➢ Efficacy and management of use

The primary measure of haemostasis is the clinical assessment of bleeding as stopped, decreased or unchanged.

The secondary measure of haemostatic efficacy is a reduction in blood component usage.

Drain losses, drop in haemoglobin, rate of red cell requirements must be monitored and recorded.

➢ Laboratory Investigations

Blood must be taken for full blood count, activated partial thromboplastin time (APTT), international normalised ratio (INR) and semi quantitative fibrinogen (SQF) pre and 20 minutes post rVIIa (Novoseven®) and then dependant on the clinical situation. The prothrombin time will shorten dramatically and the APTT may also shorten post dose.

rVIIa (Novoseven®) has a short half life so these effects will not be long lasting and need regular monitoring if bleeding reoccurs or continues.

➢ Record of rVIIa (Novoseven®) use

The batch number, vial size and number of vials issued will be recorded on the blood transfusion computer system. Details issued with the product are to be stored in the patient's notes. Usage will be documented and discussed at the Hospital Transfusion Team and Hospital Transfusion Committee meetings.

• The consultants responsible for administration will be expected to present a case study at a clinical audit meeting.

• The consultants responsible for administration will be expected to record and feedback the dose level at which haemostasis improved to help update the protocol.

➢ Audit

The use of rVIIa (Novoseven®) will be audited as a matter of routine and reported to the Hospital Transfusion Committee.

➢ Contacts

- Consultant haematologist (via switch)
- Blood transfusion laboratory ext 5766 or 5762 during routine hours and bleep 2686 out of hours.

➢ References

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14. O'Connell NM, Perry DJ, Hodgson AJ et al. Recombinant FVIIa in the management of uncontrolled hemorrhage. Transfusion. 2003 Dec;43(12):1711-6.

Appendix A

Plan for Dissemination and implementation plan of new Procedural Documents

To be completed and attached to any document which guides practice when submitted to the appropriate committee for consideration and approval.

Acknowledgement: University Hospitals of Leicester NHS Trust

Title of document:	Extended use of recombinant factor Vlla (Novoseven®)		
Date finalised:	**Re-issued Nov 2015**	**Dissemination lead: Print name and contact details**	**Dr Farrukh Shah** **Consultant haematologist**
Previous document already being used?	**Yes**		
If yes, in what format and where?	**Trust Guideline on the intranet**		
Proposed action to retrieve out-of-date copies of the document:	**Electronic copy only**		
To be disseminated to:	**How will it be disseminated/implemented, who will do it and when?**	**Paper or Electronic**	**Comments**
Haematology	**Via intranet**	**Electronic**	
Intensivists	**Via intranet**	**Electronic**	
Anaesthetists	**Via intranet**	**Electronic**	
Obstetricians	**Via intranet**	**Electronic**	
A/E	**Via intranet**	**Electronic**	
Is a training programme required?	**no**		
Who is responsible for the training programme?			

Appendix B

Equality Impact Assessment Tool

To be completed and attached to any procedural document when submitted to the appropriate committee for consideration and approval.

Impact (= relevance) 1 Low 2 Medium 3 High	Evidence for impact assessment (monitoring, statistics, consultation, research, etc	Evidential gaps (what info do you need but don't have)	Action to take to fill evidential gap	Other issues
Race	**1**			
Disability	**1**			
Gender	**1**			
Age	**1**			
Sexual Orientation	**1**			
Religion and belief	**1**			

Once the initial screening has been completed, a full assessment is only required if:

- The impact is potentially discriminatory under equality or anti-discrimination legislation
- Any of the key equality groups are identified as being potentially disadvantaged or negatively impacted by the policy or service
- The impact is assessed to be of high significance.

If you have identified a potential discriminatory impact of this procedural document, please refer it to relevant Head of Department, together with any suggestions as to the action required to avoid/reduce this impact.