Use of recombinant Factor VIIa (rFVIIa) in acute life threatening primary postpartum haemorrhage: A case report

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INTRODUCTION

Primary Postpartum Haemorrhage (PPH), although falling in recent years, is one of the leading causes of maternal mortality and morbidity in the western world with a maternal mortality rate of 8.4% of all direct maternal deaths in the United Kingdom[1]. Massive PPH is defined as a cumulative blood loss >1,500mls of blood or ongoing severe bleeding. The treatment for massive PPH is a combination of blood and blood product transfusion, uteronics, surgical and pharmacological agents such as Tranexamic Acid and recombinant FVIIa (rFVIIa). rFVIIa is a prohaemostatic drug that activates Factor X on activated platelets and on tissue factor to promote thrombin generation at the site of injury with the formation of a stable fibrin clot. rFVIIa is used in the treatment of haemophilia and FVII deficiency. Outside this, use of rFVIIa is very controversial, in particular in the field of Obstetrics where it is not licensed for the treatment of obstetric haemorrhage due to severe risk of thrombosis in an already prothrombotic patient.

BACKGROUND

This was a retrospective individual case report. 39 year old, Para 3, (LSCS x3, cord prolapse, breech presentation and elective caesarean section). Antenatal care was uneventful; however ultrasound at 33 weeks noted placenta accreta. Care transferred from rural hospital to tertiary referral centre. Planned caesarean section and tubal ligation planned for 38 weeks gestation.

OBJECTIVES

To review the efficacy of rFVIIa post major post-partum haemorrhage

To review the clinical outcome of the patient post obstetric haemorrhage.

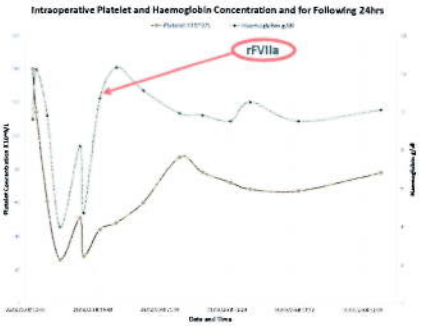
DELIVERY

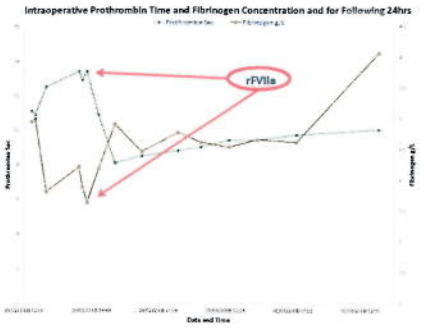
- Laparotomy, high transverse caesarean section, ligation internal iliac artery, sub total hysterectomy and left salpingo-oopherectomy.
- Liveborn female infant, 3710g, Apgars 7@1, 9@5.
- Maternal estimated blood loss (EBL) = 19570 mls.
- Hb decreased from 12.0 to 4.0 g/dl

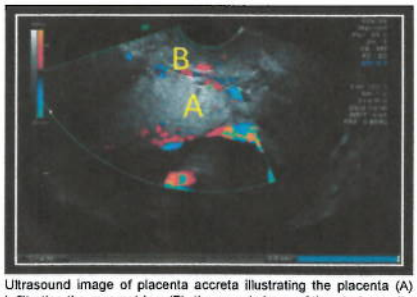
MANAGEMENT

- Received 31 RCC, 4 Pools of platelets, 21 Plasma units, and 11g of fibrinogen.
- The patient continued to bleed.
- The patient then received recombinant Factor VIIa under Consultant Haematologist instruction (Fibrinogen = 1.63 g/l and PT = 13.4 seconds).
- The bleeding arrested with no further requirement for red cell transfusion. A top-up platelet transfusion was required post event.

LABORATORY RESULTS







Ultrasound image of placenta accreta illustrating the placenta (A) infiltrating the myometrium (B), the muscle layer of the uterine wall.

4 major risk factors associated with Placenta Accreta

TRANSFUSION SUMMARY

Bleeding started at 12:40 and arrested at 17:40. Duration 5 hours

PRODUCT	QUANTITY
Red Cells	31
Plasma	21
Platelets	4
Fibrinogen	11g
Novo7	7.2g

CONCLUSIONS

This case demonstrates that rFVIIa was effective in arresting an acute life threatening primary post partum haemorrhage with no thrombotic adverse effects seen in the aftermath. In the absence of randomized controlled trials on the use of rFVIIa in obstetrics, the use of independent case reports and review articles published lend support to the weak evidence that is currently available on the use of rFVIIa for obstetric haemorrhage. While some studies support the use of rFVIIa as a safe and efficacious treatment for massive obstetric haemorrhage[2], other studies do not support its routine use[3]. Until randomised controlled trials take place in obstetrics with established protocols for its use, rFVIIa should only be prescribed by a Consultant Haematologist.

References:
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3. McMorrow R, Ryan S, Blunnie W *et al*. Use of recombinant factor VIIa in massive post-partum haemorrhage. *Eur J Anaesthesiol* **2008**; 25: 293-8.

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