Successful Haemostasis with Extended Half-life Recombinant Factor VIII in Circumcision

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To the editor,

Intensified coagulation factor replacement is essential for surgical procedures in people with hemophilia A (HA). It is indicated during surgery and in the postoperative period [1,2]. The efficacy and safety of PEGylated recombinant human full length coagulation factor VIII (BAX 855) in prophylaxis and treatment of bleeding episodes have already been reported and its half-life in the circulation was proven to be 1.5 times longer compared to standard half-life FVIII (SHL-FVIII) [3]. Circumcision is a common surgical intervention in approximately half-of the world [4,5]. In this report, we aimed to present our experience about extended half-life recombinant FVIII (EHL-rFVIII)-BAX 855 treatment for circumcision in two severe HA.

The first patient was diagnosed at the age of 3-month with severe HA (factor VIII=0.001 IU/ml= 0.1%) with no family history. He was started to undergo primary prophylaxis twice a week at the age of 17-month; however, his prophylaxis regimen was required to be changed to 3 times a week at the age of 5-years old due to frequent elbow bleedings. He was enrolled in an EHL-rFVIII clinical trial at 5.5 years old, and the prophylaxis was continued twice a week for 3 years with no bleeding. The second patient was diagnosed at the age of 8-month with severe HA (factor VIII=0.003 IU/ml= 0.3%); he had a family history. He began primary prophylaxis twice a week at the age of 15-month. He was enrolled in an EHL-rFVIII clinical trial at 5.5 years old, and prophylaxis was continued twice a week for 3 years with no bleeding. Both patients had no adverse events and no inhibitors during this period. The two patients were circumcised at 8 years old in a pediatric urology clinic. Both patients were
hospitalised on the day of circumcision. One patient had phimosis and was hospitalised for 3 days; the other patient was hospitalised for 1 day. Both patients were circumcised under local anaesthesia using a diathermic knife. Hemostasis control was achieved by tranexamic acid and EHL-rFVIII. Both patients were under prophylaxis at a dose of 45 IU/kg/day twice a week. The circumcisions were performed on the prophylaxis day, and 2 extra EHL-rFVIII doses (50 IU/kg/dose) were used during the prophylaxis regimen. Factor FVIII level was assessed by chromogenic assay at the first day of the circumcision. Factor VIII level was under 0.030 IU/ml for both patients at the beginning and 1.252 IU/ml (125.2%) and 2.180 IU/ml (218%) at the 30th minutes, respectively. Both patients had regular wound healing. No unexpected bleeding and wound infections were recorded. They returned to their routine lives within 7 days.

Circumcision is a cultural and traditional surgical intervention, and many patients want to be circumcised around the world. In the previously published series, it was reported that circumcision could be performed with minimal complication rates by using a diathermic knife. In this routine clinical practice, tranexamic acid and SHL-FVIII products have been used for hemostasis with decreasing doses between 4-14 days until wound healing occurs depending on the degree of hemophilia [6,7]; In another protocol where circumcision was performed under general anesthesia; fibrin glue application with, 2-3 days of factor supplementation were found to be sufficient [8]. As we reported here, just two extra doses of EHL-rFVIII were needed on postoperative day 1 and 2 for the cases who underwent circumcision. Our experiences with these two patients demonstrated that PEGylated rFVIII is well tolerated and efficacious for bleeding prophylaxis before circumcision.

There is limited data for EHL-rFVIII products for surgical interventions in the literature [9,10]. The first prospective study reported 15 surgical interventions with PEGylated EHL-rFVIII, hemostatic efficacy was excellent in all subjects for both intraoperative and perioperative period; additionally all interventions were scored to be excellent postoperatively, except one dental procedure that was graded as good. In addition, no related adverse events, including thrombosis and inhibitors, were recorded [9]. To the best of our knowledge, this is the first report, which indicated two successful circumcision cases performed under perioperative and postoperative EHL-rFVIII prophylaxis. Additionally, successful prophylaxis was achieved by lower frequency of factor supplement compared to other series. As we mentioned above, no adverse events, no thrombotic events and no inhibitor formation were observed following prophylaxis.

In conclusion, EHL-rFVIII was safe and effective for circumcision management for severe HA. Decreasing the amount and frequency of factor support seem to be possible according to this report.

References