How effective coordination of perioperative management in patients with inherited bleeding disorders leads to safe and effective haemostasis at sites external to the HTC

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Aim

The Haemophilia Treatment Centre (HTC) of Western Australia coordinates the perioperative management of patients with congenital bleeding disorders at a variety of sites across the state. This audit aims to review the management and outcomes of these patients focusing on safety and efficacy.

Method

A prospective review of congenital bleeding disorder patients who undergo major dental and surgical procedures both at the HTC site and external sites was undertaken. Outcomes reviewed include availability of laboratory support and clinical measures of surgical haemostasis and thrombosis. Review of patients was performed day of discharge and day 30 post-operative.

Results

From 2nd February 2015- 3rd September, there were 51 surgical procedures performed on 47 patients which were managed by the HTC including those having surgical procedures at the HTC hospital and externally (Fig 1). 27 patients had Von Willebrand Disease (vWD) – including 8 with type 2 vWD, 12 had mild/moderate haemophilia A or B with a further 3 with co-inheritance of mild haemophilia A and type 1 vWD. There were 2 patients with severe haemophilia A. 1 patient had mild FXI deficiency and a further 1 patient had a severe platelet dysfunction (Fig 2).

Procedures included: 8 orthopaedic – including 3 joint replacements; 13 general surgeries – including 2 bowel resection; 9 ENT (including major dental); 9 gastro procedures; 3 plastics, 3 urology, 4 ophthalmology and 2 gynaecological (Fig 3).

Pre-operative treatment was given by HTC staff in all procedures occurring at the HTC hospital (11) and for 7 patients undergoing procedures elsewhere. For the remaining procedures, treatment was primarily administered by the anaesthetist.

Clotting factor concentrates were administered for 31 surgical procedures, with DDAVP given in a further 14. In 2 cases a combination of DDAVP and pdFVIII/vWF concentrate was administered during the perioperative period. In 25 procedures tranexamic acid was used as an adjuvant treatment (Fig 4).

There were 2 patients who had post procedural bleeds prior to discharge which were unrelated to management of inherited bleeding disorder. There were 3 further bleeding

complications between discharge and day 30. In one case the patient ceased planned management prematurely and in another case an arterial bleed from an anastomotic leak resulted in significant haematoma despite adequate factor replacement. The remaining bleeding complication, which resulted in a small haematoma post hydrocele repair, may be related to the management of the bleeding disorder – however this procedure was conducted privately and post-operatively there was no communication from the surgical team. Nil treatment was required and the surgical team were happy with outcome. There were no post-operative thrombotic events. There were no adverse events related to administration of DDAVP. (Fig 5).

70% of surgery occurred in a non-tertiary setting in which there was no on-site laboratory services, which impacted on the decision to request clotting factor assays. In 22 procedures factor assays were requested, however the majority of these were when the surgery or pre-operative treatment was undertaken by the HTC staff (54%) with a further 23% taking place in a tertiary setting with onsite coagulation laboratories. This leaves 23% requested in hospitals in which samples are sent off-site for processing – only 50% were collected as requested.

Conclusion

Whilst it may be ideal to have surgical procedures undertaken at the HTC hospital site it is not always possible due to a number of reasons. However with appropriate multidisciplinary care and extensive communication between the surgical and haematology teams, management of surgical procedures in complex haemostasis patients is possible at various centres without onsite haematology clinical services.

Complex and high risk cases should continue to be managed in the tertiary setting, preferably at the HTC hospital, due to the availability of laboratory assays and haematology support.