Audit of Estimated Blood Loss During Delivery and its Impact on Haemoglobin and Anaemia Treatments Provided to Women Post-delivery

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Introduction

Post-partum haemorrhage is defined in vaginal deliveries as an estimated blood loss volume (EBL) of ≥500mL, and in caesarean sections ≥1000mL. Often women with an EBL of 500 – 999 mL with a normal starting haemoglobin will not require treatment for anaemia. Often this subset of women still have post-delivery full blood counts (FBCs) performed, which costs money and uses hospital resources. At Redland Hospital, it is estimated that approximately $10,000 per annum can be saved by not performing routine FBCs in women with an EBL of <1000mL. This audit aims to determine if EBL impacts haemoglobin investigations and anaemia treatment provided to women post-delivery.

Method

Retrospective clinical audit of 154 women who delivered at Redland Hospital in May, 2020. EBL was compared across groups of <500mL, 500–999mL and ≥1000mL. Anaemia treatment was measured by blood transfusion, iron infusion or newly commenced oral iron supplementation.

Table 1 – Treatment comparison across EBL groups

EBL	<500mL	500-999mL	≥1000mL
Treatment	1 (0.9%)	5 (17.9%)	10 (62.5%)
No treatment	109 (99.1%)	23 (82.1%)	6 (37.5%)

Results

In the audit group, the mean age of women delivering was 30 years (sd 4.9). There were 93 vaginal deliveries, 14 instrumental deliveries, and 47 caesarean sections. 18 women (12%) received treatment for anaemia during this period. FBCs were undertaken post-delivery in 16% (18/110) of women with an EBL of <500mL, in 85% (24/28) of women with an EBL 500-999mL and in 100% (15/15) of women with an EBL ≥1000mL.

A difference in treatment rates across EBL groups was demonstrated. As shown in Table 1, only 0.9% of patients with an EBL <500mL received treatment, 18% of patients who lost 500-999mL received treatment and 63% of patients with an EBL ≥ 1000mL received treatment. Of the five women who received treatment with an EBL of 500-999mL, four were commenced on oral iron supplementation and one had an iron infusion.

Of those with a normal haemoglobin prior to delivery, the median post-delivery haemoglobin for those with an EBL between 500 and 999mL was 110 (101-117).

Discussion

Of 154 charts audited, 139 mothers had a normal haemoglobin prior to delivery. The pre-delivery haemoglobin was completed in 147 of 154 women, averaging 127.75. In comparison to the Redland Hospital average pre-delivery haemoglobin of 123.35 in December 2016, there has been significant improvement in antenatal haemoglobin optimization within the department.

Of the women with an EBL of <500mL, one symptomatic patient received treatment, therefore a routine post-delivery FBC is unnecessary. The median post-delivery haemoglobin was 115 in this group. Of the women with an EBL ≥1000mL, 57% required anaemia treatment, and the median post-delivery haemoglobin was 104 (<110 is considered anaemic). This suggests that all women in this subset should be considered for a post-delivery FBC.

Of the five women who received anaemia treatment with an EBL of 500-999mL (18%), four were iron supplementation and one was an iron infusion. The median post-delivery haemaglobin was 110, the anaemia cutoff. Based on this result, it cannot be determined that women of EBL 500-999mL do not require routine post-delivery FBCs.

Limitations are that this is a single centre study with a small sample size.

Conclusion

This audit begins to raise questions around the appropriateness of routine post-delivery FBCs for women with EBL<1000mL unless there is a clear clinical indication.