

**Does optimising antenatal management of iron stores contribute to decreased rates of blood transfusion post-delivery in patients with placenta accreta?**Presenting Author [Murgan, Nevani](#)<sup>1</sup>, Calvert Katrina<sup>1</sup>, Epee-Bekima, Mathias<sup>1</sup><sup>1</sup>King Edward Memorial Hospital, Perth, Western Australia, Australia  
Email: [Nevani.murgan@health.wa.gov.au](mailto:Nevani.murgan@health.wa.gov.au)**Introduction:**

Placenta accreta is a potentially life-threatening complication of pregnancy that may require interventions such as caesarean hysterectomy and high volume blood transfusion<sup>1</sup>. The dedicated placenta accreta team at our unit has managed all patients with placenta accreta under multidisciplinary care since 2018. Antenatal optimisation of iron stores, including IV iron infusion may lead to a decreased requirement for blood transfusion post-delivery. This approach may reduce the overall morbidity and duration of intensive care unit admission among patients with placenta accreta. We wished to determine if this service has had an impact on rates of iron infusion for this patient group.

**Aim:**

To determine if optimising antenatal management of iron stores with iron infusion contributes to decreased rates of blood transfusion post-delivery in patients with placenta accreta. This project will evaluate if patients who received iron infusion prior to elective surgery were less likely to require a blood transfusion.

**Methods:**

This is a retrospective cohort study, comparing two groups of patients with placenta accreta managed in King Edward Memorial Hospital pre and post implementation of the accreta team. The cohorts were derived from 2004 to 2014 and 2018 to 2019 respectively. Rates of iron infusion antenatally and blood transfusion postnatally were compared. Data were derived from multiple sources including patient notes, operative records, and pathology database. Data including patient age, parity, gestation at diagnosis, gestation at delivery and outcome were included.

**Ethics approval:**

Approval was given for this project by the hospital Governance Evidence Knowledge and Outcomes (GEKO) Committee (No 28759)

**Stakeholders:**

The following group were recognised as stakeholders in King Edward Memorial Hospital where the audit was conducted which include clinical nursing coordinators and staff, obstetrics and gynaecology medical staff, pathwest and blood bank staff, governance, evidence, knowledge, outcomes coordinator and clinical quality and safety committee. The stakeholders listed above were aware at the commencement of this audit and shall be informed upon completion of the audit.

**Results:**

A total of 84 patients with placenta accreta were identified in the pre-accreta team cohort; 6 patients were excluded from this cohort due to problems retrieving data. Twenty-six patients were included in the post-team cohort. All patients were delivered by caesarean section.

Table 1 compares antenatal management of iron stores and the rates of blood transfusion pre-operatively and post-operatively in patients with placenta accreta.

**Table 1: Antenatal management of iron stores and the rates of blood transfusion pre-operatively and post-operatively in patients with placenta accreta**

Total number of patients	84	26
Number of patients excluded	6	0
Total number of patients included in the study	78	26
Number of Elective caesarean sections	42	16
Number of Emergency caesarean sections	36	10
Total number of patients who received iron infusion pre-ELUSCS	3	8
Percentage of patients who received pre-operative iron infusion (%)	3.8	30.7
Total number of patients who received post-operative iron infusion	14	2
Percentage of patients received post-operative iron infusion (%)	17.9	7.6
Total number of patients received blood transfusion pre-ELUSCS	1	0
Percentage of patients who received pre-operative blood transfusion (%)	3.8	0
Total number of patients who received blood transfusion post-operative	31	13
Percentage of patients who received blood transfusion post operatively (%)	39.7	50
Number of units of blood transfused (Median/Range)	4	1.2

**Discussion:**

This audit was undertaken to evaluate if optimising antenatal management of iron stores with iron infusion would contribute to decreased rates of blood transfusion post-delivery in patients with placenta accreta. Out of the 31 patients in 2004-2014 cohort who received post-operative blood transfusion, only 3 patients received iron infusion pre-operatively. 4 patients out of the 13 patients in the post-operative blood transfusion cohort received iron infusion pre-operatively. Overall, the number of patients who received blood transfusion post-delivery were relatively similar in both groups. This may be because the group who did not receive iron pre-operatively were more likely to receive it post-operatively; the 2004-2014 group displayed higher rates of post-operative than pre-operative iron infusion comparative to the 2018-2019 group.

The advantage of pre-operative optimisation of iron stores is that it can be done electively at a time to suit both patient and team. IV iron can be associated with a risk of complications including allergic reactions and skin staining. The ability to give an iron infusion in a controlled environment with adequate supervision is likely, in cohorts with larger numbers, to result in improved patient safety and oversight of the process. Number of units red blood cells transfused has reduced from 4 to 1.22 units between the years 2005 to 2014 and 2018.

Placenta accreta is an increasingly common complication of pregnancy with high morbidity. Managing patients under a dedicated service allows optimisation of many parameters including ferritin levels by IV iron infusion prior to delivery. This is reflective of the antenatal care provided to patients with placenta accreta with the initiation of the placenta accreta team in 2018 at King Edward Memorial Hospital.

**References:**

Miller DA, Chollet JA, Goodwin TM. Clinical risk factors for placenta previa-placenta accreta. Am J Obstet Gynecol 1997 Jul; 177 (1): 210-4