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Territory-wide Massive Primary Postpartum Haemorrhage (PPH>1,500ml) Survey in Hospital Authority Obstetric Units with Recommendations and the Way Forward

Lau KW, Chan LL, Lo TK, Lau WL, Leung WC

Obstetrics and Gynaecology Quality Assurance Subcommittee, Hospital Authority, Hong Kong

Introduction

Massive primary PPH (>1,500ml within the first 24 hours after delivery) is an important cause of maternal morbidity and mortality. It has been chosen as the clinical indicator for obstetric performance in Hospital Authority (HA) units.

Objectives

To study the characteristics of cases with massive primary PPH in order to look for areas for improvement in terms of prevention and treatment.

Methodology

A prospective study was performed in 2013 in the eight HA Obstetric Units using a pre-designed code sheet to record the details of all cases of massive primary PPH, including causes, risk factors, mode of delivery, interventions (uterotonic agents, second line therapies and emergency hysterectomy), use of blood products, and maternal outcome.

Results and Recommendations

Massive primary PPH occurred in 0.76% (n=277) of all deliveries (n=36,510) in HA Obstetric Units in 2013. Majority occurred after Caesarean sections (84.1%). Uterine atony (37.5%), placenta praevia/accreta (49.9%) and uterine wound bleeding/tear during Caesarean section (24.2%) were the three most common causes. The total median blood loss was 2,000ml (range 1,500-20,000ml). Coagulopathy occurred in 16.2% (n=45). 27.4% (n=76) required Intensive Care Unit/High Dependency Unit admissions. There was no maternal mortality.

Second line therapies (balloon tamponade, compression sutures and uterine artery/internal iliac artery embolization or surgical ligation) were used in 40.1% (n=111). Emergency hysterectomy was required in 8.7% (n=24). A total of 1,052 units packed cells, 670 units platelets, 568 units full plasma and 200 units cryoprecipitate were transfused.

Three areas for improvement were identified after analysis from the database: (1) to increase the variety of uterotonic agents (Carbetocin into HA Formulary since January 2017) for prophylaxis of PPH in those cases with risk factors; (2) to increase the use (and use early) of second line therapies, but also need to watch out for failures; (3) to reduce the incidence of placenta praevia/accreta through education and to improve its management at various levels.

The pre-designed codesheet has been transformed into an electronic form (in use from January 2017) with multiple user-friendly functions in our Clinical Management System to facilitate documentation, clinical audit and root cause analysis of cases with massive primary PPH.