

Less is More

Recognising Major Obstetric Haemorrhage in Low Maternal Weight

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Introduction

Obstetric haemorrhage is a common occurrence on labour ward. In women with low body weight, a smaller volume of blood loss can have significant clinical consequences¹.

In these patients, blood loss should be assessed as a percentage of the individual's circulating blood volume to ensure accurate evaluation and appropriate management are carried out.

In Wales, **OBS Cymru** is a four-stage postpartum haemorrhage (PPH) checklist² using risk assessment and measured blood loss to guide staged intervention and escalation.

Case Report

A woman at 34⁺¹ weeks’ gestation, booking **BMI of 16.4 kg/m²** (40 kg), presented to triage with active vaginal bleeding, severe lower abdominal pain and tachycardia (142bpm). A category 1 caesarean section was called due to suspected **placental abruption**. Maternal blood loss was 1,334 ml, representing a **33 % loss** of her calculated circulating blood volume (100mls/kg).

The **OBS Cymru** checklist was followed. Initial blood gas further demonstrates maternal compromise: pH 7.2, base excess -10.6, lactate 4.4

Resuscitation included 3.5L of IV fluid, and 3 units of packed red blood cells. Repeat ROTEM samples indicated no coagulopathy. The patient was kept intubated for a short period to allow fluid resuscitation, as surgery was only 26 minutes. Postoperative care was carried out on delivery suite with enhanced maternal care. 2 days later, she was discharged home (Haemoglobin 121g/L). Written consent given.

Discussion

This case highlights the importance of assessing blood loss relative to circulating blood volume. Stage 2 of the OBS Cymru is defined as blood loss greater than 1L, with Stage 3 starting at 1.5L. The OBS Cymru PPH management has a prompt to adapt blood loss for low BMI patients, therefore adjusting the thresholds for blood loss at each stage. Stage 2 to ≥15% loss of calculated circulating volume (100mls/kg), and Stage 3 to ≥30% loss, based on the All-Wales Guideline for PPH² (see table). The blood loss in this case met criteria for **Stage 3 management** due to a 33% loss, requiring major haemorrhage protocol activation, consultant leadership, ROTEM-guided transfusion alongside pharmacological support. These structured protocols offer best practices for managing such critical cases effectively and with standardised documentation. In future cases, the adjusted volumes should be displayed on the surgical board to ensure the entire team is informed.

Maternal weight (kg)	Est. blood vol (100ml/kg)	7.5% blood loss (ml)	15% blood loss (ml)	30% blood loss (ml)	40% blood loss (ml)
40kg	4000	300	600	1200	1600
50kg	5000	375	750	1500	2000
60kg	6000	450	900	1800	2400

Blood loss proportionate to a pregnant women’s circulating blood volume²

References:
1. Knight M, Bunch K, Tuffnell D, Shakespeare J, Kotnis R, Kenyon S, Kurinczuk JJ, editors, on behalf of MBRRACE-UK. *Saving Lives, Improving Mothers' Care: Lessons Learned to Inform Maternity Care from the UK and Ireland Confidential Enquiries into Maternal Deaths and Morbidity 2016–18*. Oxford: National Perinatal Epidemiology Unit, University of Oxford; 2021
2. OBS Cymru Quality and Safety Subgroup, Maternity Network Wales. *All-Wales Guideline for the Prevention and Management of Postpartum Haemorrhage*. Public Health Wales; April 2025. [Accessed July 2025]