

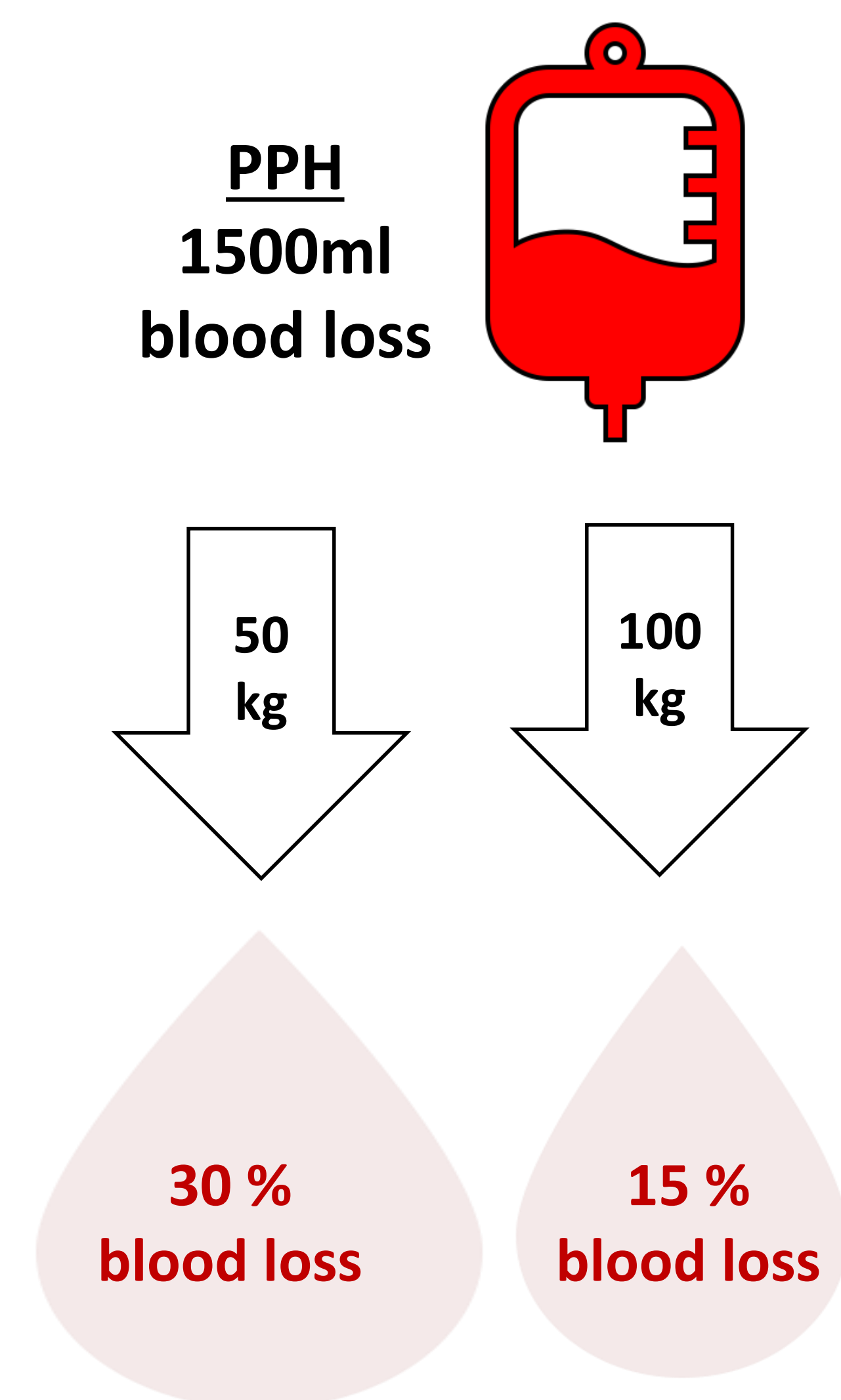


Impact of Focusing Definitions of Postpartum Haemorrhage

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- Major obstetric haemorrhage (MOH) after C-section is generally thought to be a blood loss in excess of 1500ml and this threshold may be used to trigger a MOH protocol [1]
- This is considered to represent a 30% blood loss, or class 3 shock, in the typical 70kg adult with 70ml/Kg blood volume.
- Normal maternal physiology produces an increase in blood volume approaching 100ml/Kg in late gestation.
- Patient BMI introduces considerable variation in estimation of haemorrhage significance when thought of as a simple volume.
- When a 50Kg patient bleeds 1500mls it is of higher impact proportionally than a 100Kg patient exposed to the same blood loss, yet both are described as having a major PPH by traditional blood loss volume definitions.
- We aim to examine the impact of defining a patient group's intraoperative bleeding by three different means – actual blood loss, percentage blood loss for actual body weight (ABW) and percentage blood loss for ideal body weight (IBW).

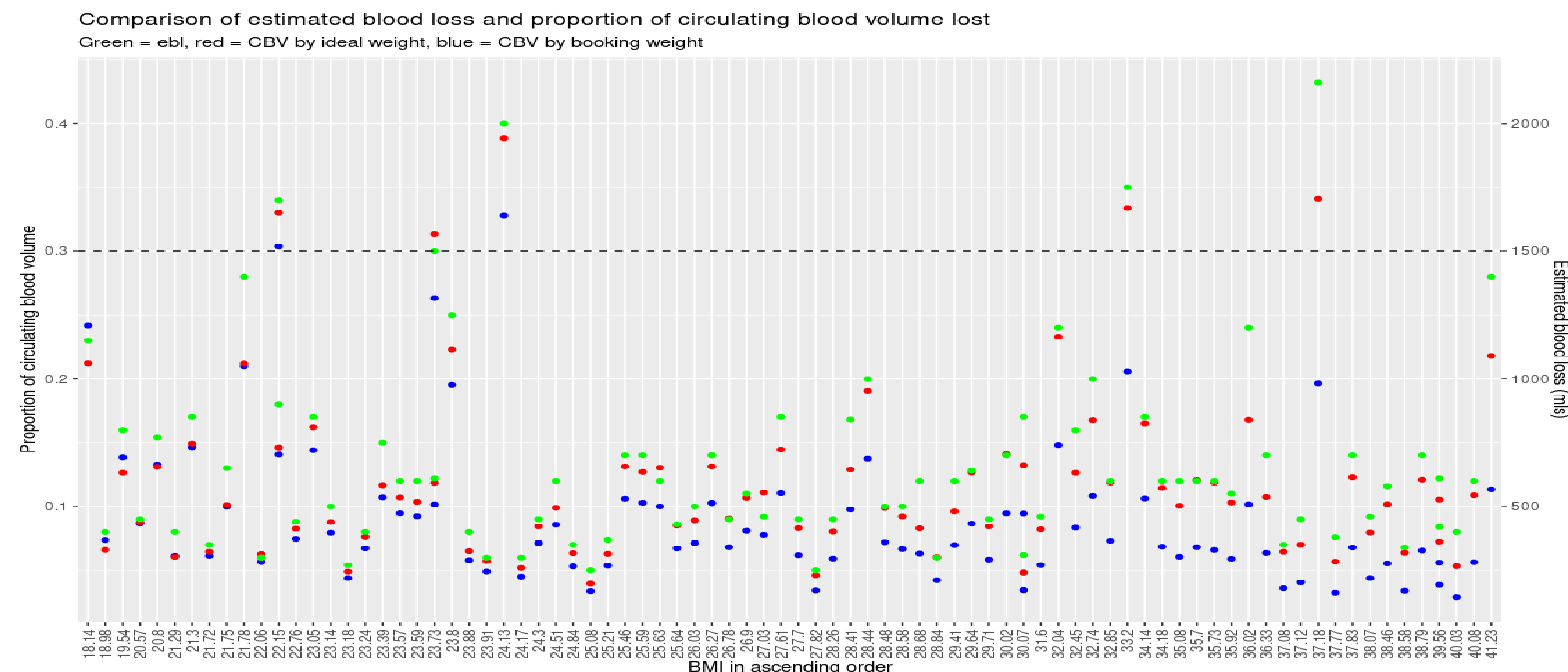


Methods

- A retrospective audit of patients undergoing either elective or emergency caesarean section between January 2021 and May 2021 in a district general hospital was carried out.
- We examined the data for patient height, weight and actual blood loss.
- For each patient we calculated percentage blood volume losses assuming 100ml/Kg total blood volume for both ABW and IBW (using the Devine formula).
- Additionally we subjected this data to locally established definitions of MOH at both 1500ml and 30% blood volume loss.

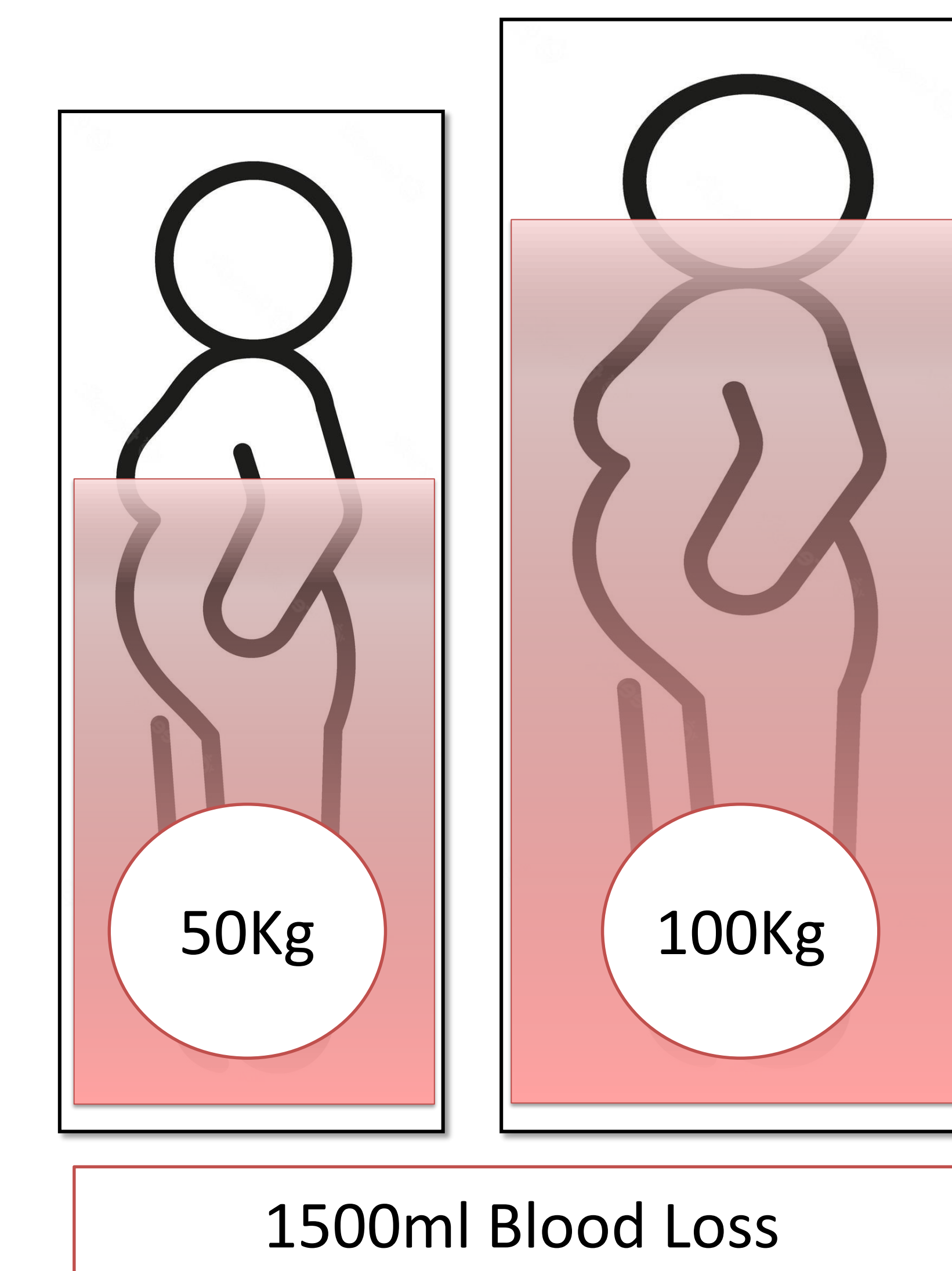
Results

- Our sample included 91 consecutive caesarean section patients.
- Mean ABW was 77Kg (SD 19), mean IBW 56Kg (SD 6), mean BMI 28.5 (SD 6.1) and mean actual blood loss 667ml (SD 379).
- For each patient, blood loss was expressed according to three definitions: estimated blood loss, percentage loss ABW and percentage loss IBW.
- Our results showed that 5 patients crossed above the major PPH threshold of either 1500ml or 30% blood loss.
- However 3 of the 5 patients would be classified variably as major PPH positive or negative depending on the definition used indicating variation. In general, of the range of definitions, using actual blood loss most commonly resulted in a top end description of haemorrhage and percentage blood loss ABW resulted in a low end. Percentage blood loss IBW most commonly fell between these two extremes.



Discussion

- We believe our results represent an interesting and important clinical dilemma over the use of standard definitions of PPH. Variation in definition of haemorrhage has been demonstrated.
- Haemorrhage assessment should be tailored to an individual patient with percentage blood volume calculation seeming appropriate.
- ABW predicts a falsely high starting blood volume in the raised BMI group when considered to be 100ml/Kg in late pregnancy. This is because adipose tissue has a relative paucity of blood supply compared to other body tissues. The resulting lower percentage of total blood loss in a raised BMI patient can lead to false reassurance of the haemorrhage impact.
- IBW, as the basis of blood volume calculation, represents a more bespoke method of quantifying blood loss, with less propensity to over or underestimation, as suggested by adopting the middle ground in this study.



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REFERENCE

1. Mavrides, S. Allard, E Chandrachan et al. Prevention and Management of Postpartum Haemorrhage. International Journal of Obstetrics & Gynaecology; Volume 124 (Issue 5), p.e106-e149