CSL Symposium - What to expect when you're expecting: how to implement Patient Blood Management in peripartum care and postpartum haemorrhage

Moderator: Filipa Lança

Monday, May 26, 2025

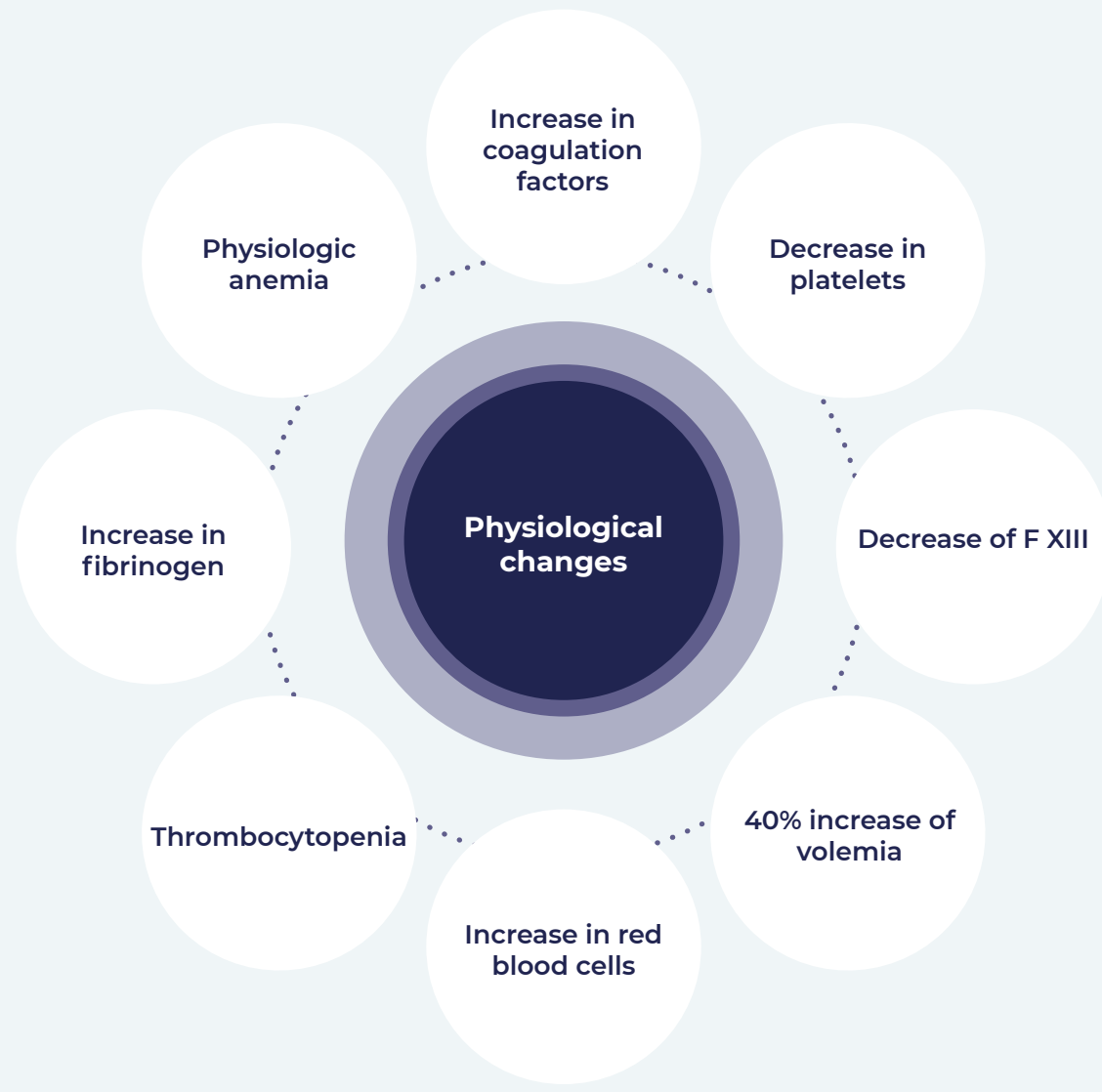
1. PREPARING PREGNANT WOMEN FOR SAFE DELIVERY

Filipa Lança

Patient Blood Management (PBM) programs are crucial in obstetrics for the following reasons:

All pregnant women are in potential risk of postpartum hemorrhage (PPH)	The chances of PPH are higher if there are risk factors	60% of women with PPH do not present preexisting risk factors	PBM programs reduce the risk of inappropriate transfusions from 79.7% to 31.1%[1]

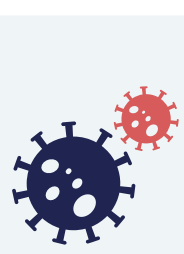
During pregnancy, many physiological changes take place in women that may be related to PPH[2]:



Anemia management

Anemia is associated with pregnancy and increases transfusion risk, morbidity, and mortality, and it is often related to iron deficiency. Treatment with iron is the standard of care for prepartum anemia[3], because it reduces:

The need for transfusion



The risk of infection

Hypovolemia

The risk of switching the blood type

Costs

RECOMMENDATIONS IN OBSTETRICS[2,4]

Assessment of fibrinogen

Fibrinogen levels may be useful to determine the risk of PPH and higher severity of PPH.

Management of placenta abnormalities

It is relevant to have a previous knowledge, to determine Hb, platelet, and fibrinogen levels, and to implement a multidisciplinary management[4], since these three factors can reduce the risk of:

Morbidity	Mortality	Hemorrhages	Transfusions	Emergency C-sections

Hb, fibrinogen, and platelet determination should be performed in the following scenarios[5]:

1. If the standard practice includes a blood draw

2. If the standard practice includes starting an IV

3. If the standard practice does not include it, it should be implemented in patients at high risk or in abnormal situations.

Multidisciplinary management is crucial and it should include the following:

- Hospital protocols including:
  - Interdisciplinary communication
  - Transportation
  - Participation of Immunotherapy departments
- Plans in rural areas to minimize delays in referrals to specialized services
- Deliveries in units of the right level for women with identified risk factors.
- Hemostatic treatment based on viscoelastic tests

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2. SCIENTIFIC CONSIDERATIONS FOR RESPONDING TO POSTPARTUM HAEMORRHAGE

Sarah Devroe

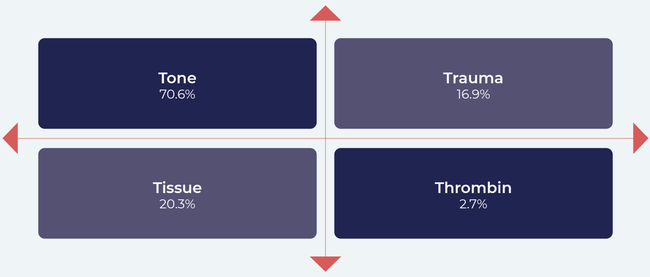
PPH is the largest cause of maternal death, although it can be prevented and cured.

It affects 70,000 women / year	**It is the first cause of maternal cardiac arrest**	**It is the first cause for maternal admission to the ICU**

The old definition of PPH did not consider differences in women's weight, and therefore, the current definition allows for an earlier detection:

Accumulated bleeding >1,000 ml or blood loss together with clinical signs of hypovolemia, regardless of the type of delivery[6].

The cause for PPH may be multiple, including the so-called 4Ts[7]. Not only the starting cause should be considered, but all factors that may constitute a vicious circle arising from PPH.



There are several identifiable risk factors, with a different degree of association, although sometimes no risk factor is identified[7].

PPH coordinated multidisciplinary management
Monitoring vital signs and symptoms in the mother
Precisely determining the lost volume
Effective communication
Identification and approach of the cause of bleeding
PBM: Fluid therapy and hemostatic support

MONITORING SIGNS AND SYMPTOMS

Early identification of certain conditions with an impact on maternal mortality and morbidity: cardiovascular disease, sepsis, thromboembolism, hemorrhage, and preeclampsia.

PRECISE DETERMINATION OF THE BLOOD LOST VOLUME

In order to reduce mortality, quantitative methods should be prioritized[8]:

Gravimetric method

- Weighting gauzes and pads

Calibrate V-drape

- Calibrated sterile collection bag

Colorimetry

- Algorithmic calculations based on color density

IDENTIFICATION AND APPROACH OF THE CAUSE OF BLEEDING

- ✓ **Tone:** uterotonics, balloon, compression sutures, surgery
- ✓ **Trauma:** absorbable sutures in the genital tract
- ✓ **Tissue:** Ultrasound or manual removal of the placenta
- ✓ **Thrombin:** tranexamic acid, fibrinogen, ROTEM monitoring

USE OF TRANEXAMIC ACID

- It decreases mortality due to bleeding and the practice of a laparotomy in PPH patients with no side effects, so it should be administered as soon as possible after the start of the hemorrhage[9].
- As a prophylaxis, it should be considered in patients at a high risk of death, before PPH[10].
- It should not be used as prophylaxis in all patients[11].

COAGULATION TEST AT THE POINT OF CARE

- The implementation of ROTEM® as a part of a PBM program reduces the progression of PPH[12].
- In case of hypofibrinogenemia (fibrinogen ≤2 g/L), replacement therapy with fibrinogen concentrate is required.
  - ✗ Fresh frozen plasma may entail dilutional anemia and a higher risk of transfusion-related acute lung injury (TRALI).
- ROTEM® with dual platelet inhibition ➡ Update of FIBTEM A5 from < 10 mm (ROTEM simpleplatelet inhibition) to < 8 mm[13]. Level correlated with 2 g/L of fibrinogen measured by Clauss.

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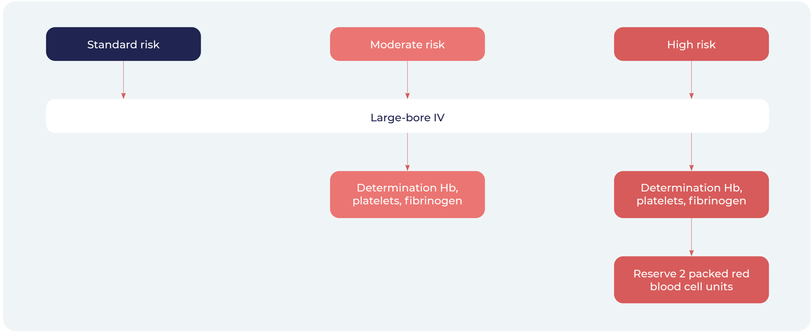
3. PRACTICAL CONSIDERATIONS FOR RESPONDING TO POSTPARTUM HAEMORRHAGE

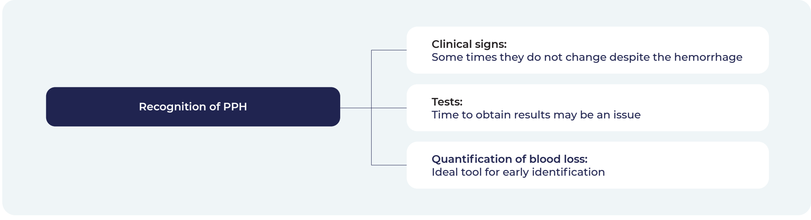
Fernanda Cristina Paes

Aspects that should be covered by a hospital protocol for PPH

1. ASSESSING THE RISK, BEING PREPARED FOR ANY RISKS, AND QUANTIFYING BLOOD LOSS.

All women in delivery have a certain risk of PPH. Every case can be assessed and approached according to the following PPH risk classification.





2. TREATING THE CAUSE, ESCALATING CARE AND FOLLOW-UP WHEN BLOOD LOSS > 1,000 ML:

Treating the cause

The approach will be different depending on which of the 4Ts is/are the cause.

UTEROTONICS	SURGERY	HYSTERECTOMY
• Since atony is the main cause, all institutions should have protocols or follow guidelines to use uterotonics. • Calcium assessment, since it has a role in womb contraction and coagulation. Considering the administration of calcium whenever necessary.	• When uterotonics do not work, it is time to use surgical methods such as the uterine balloon or compression sutures.	• At the right and necessary time.

Assessment and escalation of care

✓ Obstetric assessment of uterine tone every 3 minutes.

✓ Goal: achieving the right uterine tone 10 minutes after delivery.

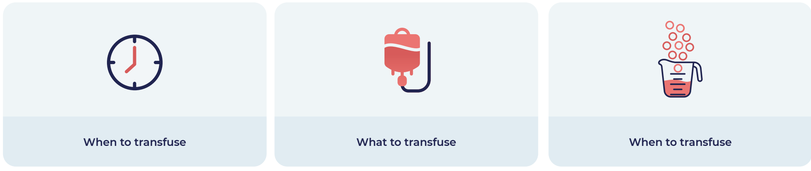
✓ Otherwise, resorting to non-pharmacological methods as soon as possible.

Follow-up

✓ Assessing tone every 15 minutes and vaginal bleeding for 2 hours after delivery (most critical time).

3. WHEN FACED WITH MASSIVE BLEEDING: RESUSCITATING THE PATIENT, PROVIDING HEMODYNAMIC SUPPORT, AND PREVENTING ORGAN DYSFUNCTION.

Questions anesthetists should ask themselves



Key points:

✓ Products to transfuse:

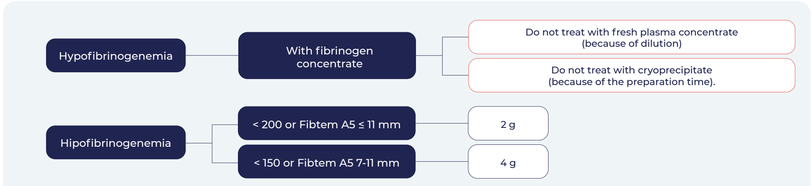
Replacement
• Red blood cells: guided by Hb and microcirculation
• Platelets: if < 50000
• Coagulation factors
Fibrinogen
• Low levels of fibrinogen (<2g/L) are associated to a higher risk of bleeding and severe PPH

✓ Fast access to the blood bank.

✓ Adequately apply the treatment in each situation:

✓ Test at the point of care and monitoring every 30 minutes.

✓ Identify and subsequently treat the condition:



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