Uterotonics in the setting of placental abruption

Good practice point

# Aim

To provide guidance for clinicians managing confirmed and suspected placental abruption to reduce the risk of maternal morbidity associated with significant haemorrhage.

# Background

Postpartum haemorrhage (PPH) is a significant contributor to maternal morbidity. The PPH Collaborative has done excellent work in focusing attention on the effective management of postpartum bleeding. CCOPMM have recently reviewed cases where placental abruption has been the cause of significant PPH, and in these instances, aggressive use of uterotonics may have reduced the maternal morbidity associated with excessive blood loss.

## PPH associated with placental abruption

Placental abruption may be associated with significant blood loss, leading to complications including hypovolaemic shock and coagulopathy. The bleeding may be concealed, resulting in a large volume of blood retained in the uterine cavity and not identified until delivery of the baby and placenta.

Placental abruption is associated with hypertonic uterine activity, which paradoxically results in increased risk of atonic bleeding at completion of the 3rd stage of labour. Additionally, various clotting factors (in particular, thrombin) play a key role in maintaining uterine contractility. In the setting of significant peripartum bleeding associated with abruption, depletion of circulating coagulation factors not only increases the risk of disseminated intravascular coagulopathy (DIC)-related bleeding but also increases the risk of atonic bleeding.

## Key Points: When placental abruption is suspected:

* Early escalation to senior staff should be routine practice
* Aggressive use of uterotonics in the management of the 3rd stage is recommended
* Early activation of massive transfusion protocol and prompt correction of coagulopathy is recommended

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| **Melanie is G3P0 and 34 weeks pregnant when she presents with abdominal pain and decreased fetal movements. On review, is diaphoretic, tachycardic (HR 110) and hypotensive (BP 80/50). The fetal heart rate is auscultated at 110. The treating team suspect a concealed placental abruption and arrange urgent transfer to theatre. She has a caesarean section with a blood loss of 2000mL. Uterotonics including syntocinon, ergometrine and carboprost are used to maintain uterine tone, and a massive transfusion protocol is initiated to correct the evolving coagulopathy and replace the red cell volume.**  |

# Bibliography

Nishimura, F., Mogami, H., Moriuchi, K., Chigusa, Y., Mandai, M. and Kondoh, E., 2020. Mechanisms of thrombin-Induced myometrial contractions: Potential targets of progesterone. *PLoS One*, *15*(5), p.e0231944.

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