

16. ANAESTHETIC TECHNIQUE

Anaesthetic agents and techniques can impact on perioperative blood loss (PBM pillar 2).

Key Messages

- Anaesthetists play a key role in PBM strategies across the three pillars.

Clinical Implications

- Anaesthetic techniques to reduce blood loss should be considered and utilised where appropriate. Some options include but are not limited to:
 - ♦ Propofol-based total intravenous anaesthesia (TIVA) has been associated with reduced blood loss in several settings¹
 - ♦ Neuraxial block has been found to reduce blood loss and transfusion requirements^{1,2}.
 - ♦ Positive pressure ventilation has been associated with increased intraoperative blood loss compared to spontaneous ventilation in total hip replacement surgery under general anaesthesia¹.
 - ♦ Choice of anaesthesia technique for total hip arthroplasty should take account of the potential benefit of regional techniques with regard to blood conservation¹.
- Deliberate induced hypotension, acute normovolaemic haemodilution, cell salvage and point of care testing should also be considered.

Background

Anaesthetists have a key role in PBM from preoperative optimisation of red cell mass and coagulation status, to minimisation of perioperative blood loss, to appropriate management of postoperative anaemia. Anaesthetists should be aware of the contribution that strategies such as volatile (inhalational) versus total intravenous anaesthesia; regional versus general anaesthesia; and spontaneous versus positive pressure ventilation have on blood loss. Propofol-based TIVA has been associated with reduced blood loss in several settings such as spinal surgery, endoscopic surgery and first trimester pregnancy termination. Neuraxial anaesthesia has been shown to reduce blood loss by 25-30% and reduce transfusion rates from 33% (with general anaesthesia) to 12% in total hip arthroplasty.¹ Although there is less evidence for the choice of anaesthesia having a significant effect on perioperative bleeding in other types of surgery, anaesthetists should be aware of the possible benefits of regional anaesthesia, TIVA and spontaneous ventilation in reducing blood loss¹.

References

1. National Blood Authority. [Patient Blood Management Guidelines: Module 2 - Perioperative](#). Australia 2011
2. Mauermann WJ, Shilling AM and Zuo Z. [A comparison of neuraxial block versus general anaesthesia for elective total hip replacement: a meta-analysis](#). *Anesth Analg* 103(4): 1018-1025

