13. DELIBERATE INDUCED HYPOTENSION

Deliberate induced hypotension (DIH) is the controlled decrease of mean arterial pressure (MAP) to reduce surgical blood loss (PBM pillar 2).

Key Messages

- DIH is used to reduce surgical blood loss and improve visibility in the surgical field.
- Hypotension must be closely monitored and controlled to ensure adequate perfusion of vital organs.¹

Clinical Implications

- In patients undergoing radical prostatectomy or major joint replacement, if substantial blood loss (blood loss of a volume great enough to induce anaemia that would require therapy) is anticipated, deliberate induced hypotension (MAP 50–60mmHg) should be considered, balancing the risk of blood loss and the preservation of vital organ perfusion (PO – R13).²

Background

There are a number of techniques used to control hypotension, such as inhaled anaesthetic agents, vasodilators, beta blockers, and/or alpha adrenergic receptors, combined with mechanical manoeuvres to potentiate the action of hypotensive agents. In patients undergoing radical prostatectomy or major joint replacement, DIH was associated with a significant reduction in operative blood loss. DIH also significantly reduced the volume of blood transfusion with 55.8% of the hypotensive groups receiving a transfusion, compared to 78.7% in the control groups.³

A meta-analysis of randomised controlled trials found that DIH reduces blood loss most effectively for.³

- hip arthroplasty (503ml reduction)
- spine fusion (318ml reduction)
- orthognathic surgery (147ml reduction)

The clinical significance of DIH is dependent on patient co-morbidity and the specific surgical procedure.³

DIH should not be confused with the concept of permissive hypotension as described in the Patient Blood Management Guidelines: Module 1 - Critical Bleeding/Massive Transfusion section 3.4.⁴

References


3. Deliberate Hypotension: A Cochrane Database of Systematic Reviews. 2019

