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

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3. Paul J., Ling, E. Lalonde,C. and Thabane L,. Deliberate hypotension in orthopaedic surgery reduces blood loss and

transfusion requirements: A meta-analysis of randomized controlled trials. Canadian Journal of Anaesthesia 54 (10):

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