

**FC-018****The effect of hypotensive epidural anaesthesia (HEA) on blood loss during pelvic and sacral tumor surgery**

A. Freeman, C. Thorne, L. Gaston, R. Shellard, L. Jeys

Royal Orthopaedic Hospital, Birmingham, United Kingdom

Introduction: Pelvic tumour resections cause significant blood loss.^[1-2] This can have consequences for the patient such as occult myocardial infarction (MI), stroke, acute kidney injury (AKI) and the need for massive blood transfusions. Decreasing the need for blood transfusions reduces the risk of transfusion related pathology. Hypotensive epidural anaesthesia (HEA) maintains high cardiac output hypotension. This entails standard induction with propofol/alfentanil, spontaneous breathing on laryngeal mask airway, utilisation of the epidural to decrease the mean arterial pressure (MAP) to 50-60mmHg, an adrenaline infusion and tranexamic acid. The aim of this study was to examine the effect of HEA on blood loss during pelvic tumour resections.

Method: All patients who underwent a hemipelvectomy, sacrectomy or hindquarter amputation between 2000 and 2014 at the Royal Orthopaedic Hospital NHS Foundation Trust were included. Patient demographics, anaesthetic technique, operation details, and blood product transfusion requirements were obtained from the patients' medical notes. Blood results were collected electronically. Blood loss was calculated from the pre- and post-operative haemoglobin, estimated blood volume and volume of blood transfused. Patients were analysed depending on whether they received HEA or any other anaesthetic technique as the control group.

Results: HEA was performed in 59% (76/130) with 41% receiving standard anaesthetic (54/130). Intra-operative MAP was not significantly different between the groups (54mmHg v. 58mmHg respectively, $P > 0.05$). There was no significant difference in mean blood loss (1560ml v. 1812ml respectively, $P > 0.05$) or blood products transfused in the first 24 hours (median 2 units, IQR 0-3units, $P > 0.05$). In the HEA group 5.8% of patients developed an AKI, compared to 3.2% in the control group. This difference was not significant ($P = 0.453$). Two patients (1.5%) had a post-operative MI, one from each group. There were no post-operative strokes.

Conclusion: HEA did not demonstrate any significant difference in blood loss, or reduced transfusion requirements when compared to standard anaesthetic technique. This is likely because both groups were kept significantly hypotensive during their procedures. Complications of hypotensive anaesthesia were in line with previous data. When compared to previously published data, however, our patients demonstrated substantially lower blood loss and consequently receive significantly fewer transfusion products.^[1-2]

References:

- ¹ Tang X et al. Evaluation of blood loss during limb salvage surgery for pelvic tumours. *International Orthopaedics* 2009;33:751-6
- ² Molnar R, Emery G, Choong PFM. Anaesthesia for hemipelvectomy - a series of 49 cases. *Anaesth Intensive Care* 2007;35:536-543