

surgery. Those in the LA group received a mixture of 0.5% bupivacaine (2 mg/kg) and 2% lignocaine (4 mg/kg) at the pin insertion sites 10 minutes prior to fixation. The skull block group received circumferential scalp infiltration for supraorbital, supratrochlear, auriculotemporal, greater auricular and occipital nerves with 0.5% bupivacaine (2 mg/kg) plus 2% lignocaine (4 mg/kg), 10 minutes prior to fixation. Heart rate (HR), systolic (SBP), and diastolic blood pressures (DBP), and mean arterial pressure (MAP) before induction, baseline (before placement of skull pins following induction), and the highest reading during pin placement up to three minutes were recorded.

Results: The increase in the hemodynamics was less in the local anesthesia infiltration group as compared to the other groups ($p < 0.05$). DBP increase was lesser in the pin infiltration group as compared to the clonidine or skull block groups ($p < 0.05$) and SBP, MAP, and HR were comparable among all the groups.

Conclusions: Local anesthetic infiltration at the pin application site is more effective than the others.

Keywords: blood pressure; bupivacaine; cardiovascular; clonidine; heart rate; lignocaine; pin application; skull pin

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(R102) Efficacy and Safety of a Novel Abdominal Tourniquet Device for the Control of Pelvic and Lower Extremity Hemorrhage

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Introduction: Hemorrhage from the pelvis and lower extremities is a significant and potentially preventable cause of death and morbidity. Currently, there are few effective field techniques available to control bleeding in these areas. This preliminary study examines the efficacy and safety of a novel, externally applied pneumatic abdominal tourniquet to significantly decrease or halt blood flow from the abdominal aorta.

Methods: Two anesthetized, Yorkshire swine models were utilized. Pressure transducers were inserted into the internal jugular vein, carotid and femoral arteries, and urinary bladder. The device was deployed continuously for 90 minutes. Serum potassium and lactate levels were obtained at baseline, five minutes before and five minutes after release. Distal blood flow was assessed by femoral artery pressure monitoring and color flow Doppler ultrasound. Open laparotomy was performed and the abdominal viscera were examined for evidence of gross and histological signs of injury.

Results: Mean central arterial pressure rose by 48.4%, central venous pressure by 10.8%. Bladder pressure rose by an average of 302.5%. Potassium levels rose to a peak of 5.8 and 9.3 mg/L, respectively. Lactate rose to 5.8 and 8.1 mg/%.

Arterial monitoring and Doppler ultrasound demonstrated complete cessation of flow in Subject 1 and near complete cessation in Subject 2. Gross and histological examination revealed no signs of significant ischemia or necrosis.

Conclusions: This preliminary study demonstrated efficacy of a novel, abdominal tourniquet device. While there were no signs of direct injury, the rise in potassium in one animal is concerning. Further studies are needed to determine significance.

Keywords: abdominal tourniquet; hemorrhage; lower extremities; pelvis

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(R103) Using GRADE to Assess Quality of Prehospital Medicine Literature

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Introduction: Guideline developers use a variety of systems to rate the quality of the evidence underlying their recommendations. The Grading of Recommendations Assessment, Development, and Evaluation (GRADE) Working Group has been working on the GRADE approach for developing and presenting recommendations to prepare a highly structured, transparent, and informative system for rating quality of evidence. This has been incorporated in the Cochrane Collaboration's assessment of clinical evidence, which extends to prehospital literature. GRADE offers four levels of evidence quality: high, moderate, low, and very low. In this study the quality of prehospital literature published in journals over the previous five years based on the GRADE recommendations was explored.

Methods: Ten emergency and prehospital medicine journals with a high impact factor were searched for publication of prehospital studies over the past five years. They include *Academic Emergency Medicine* (AEM), *Annals of Emergency Medicine*, *American Journal of Emergency Medicine* (AJEM), *Emergency Medicine Journal* (UK) (EMJ), *Canadian Journal of Emergency Medicine* (CJEM), *Emergency Medicine Journal of Australasia* (EMJA) and *European Journal of Emergency Medicine* (EJEM), *Prehospital and Disaster Medicine* (PDM), *Prehospital Emergency Care* (PHEC), and *Disaster and Public Health Preparedness*. The quality of the studies was assessed using GRADE criteria.

Results: The work is on going and results will be presented at the conference.

Conclusions: A systematic and explicit approach to making judgments about the benefits of prehospital care interventions using a uniform grading of quality of information can help to prevent errors, facilitate critical appraisal of these judgments, and can help to improve communication of this information.

Keywords: Grading of Recommendations Assessment, Development, and Evaluation (GRADE); literature; prehospital; quality; research

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