

A Prospective Multi-Centre Audit: Major Lower Limb Amputation Severn Trainee Anaesthetic Research Group 2013

C Newell, G Nickols, M Pachucki, P Bewley, B Peringathara, K Oglesby, R Mouton

On Behalf of 'STAR' (www.anaesthesiaresearch.org)

Aims

- To measure the quality of the perioperative care for patients who are undergoing major lower limb amputation surgery against the Quality Improvement Framework published by the VSGBI¹
- To identify areas in the perioperative pathway for this patient group with a high perioperative mortality rate (8-32%²) where Quality Improvements are needed
- To implement changes through vascular multi disciplinary team and leadership provided by vascular anaesthetists and vascular surgeons
- To provide a snapshot of current anaesthetic practice relating to major amputation surgery within the Severn Deanery

Methods

Audit Standards: Derived from "Quality improvement framework for major amputation surgery". VSGBI 2010¹

Inclusion Criteria:

- All Patients > 18 years-old undergoing major lower limb amputation surgery (Below-knee amputation or higher OR re-amputation at higher level on amputation stump)
- Surgery between 01/07/2013 and 31/08/2013

Exclusion Criteria:

- Surgery relating to traumatic injury or malignancy

Centres involved in study:

- North Bristol NHS Trust
- University Hospitals Bristol NHS Foundation Trust
- Royal United Hospital Bath NHS Trust
- Gloucestershire Hospitals NHS Trust

Results

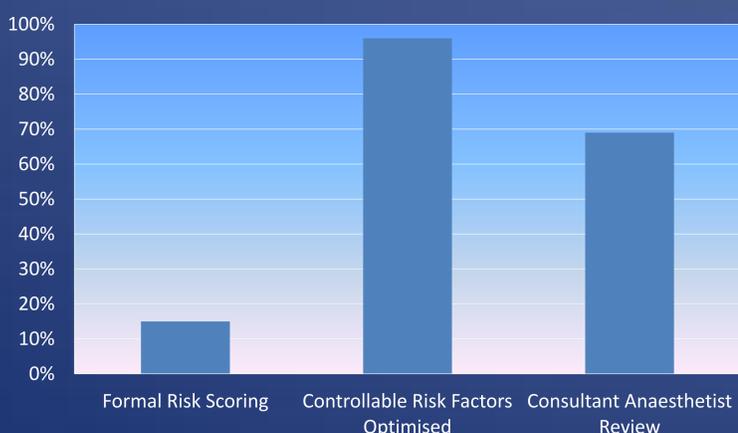
26 Patients were included in the study:

- NBT: 10
- UHBT: 8
- GRH: 6
- RUH: 2

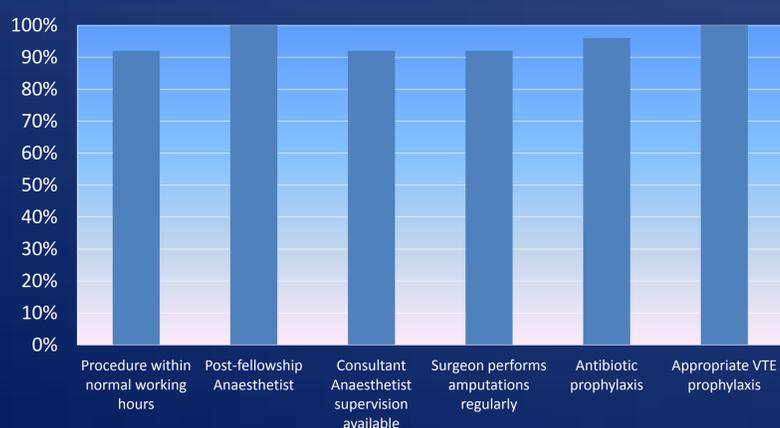
Demographics:

Male: 19 Female: 7 ASA III: 16 ASA IV: 9 ASA Unknown: 1

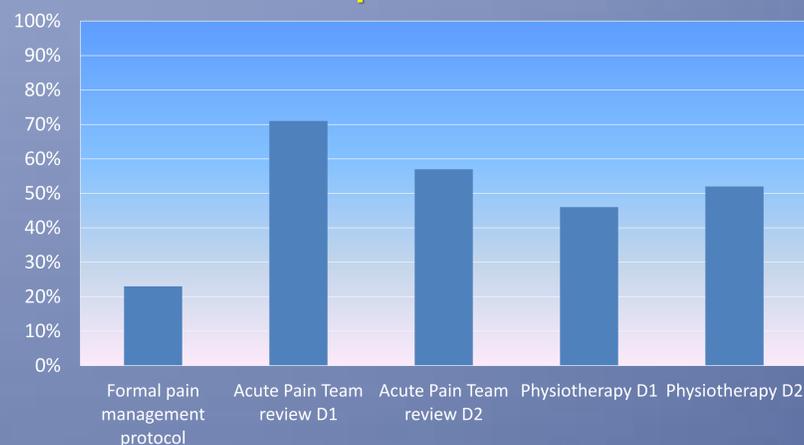
Pre-operative Care



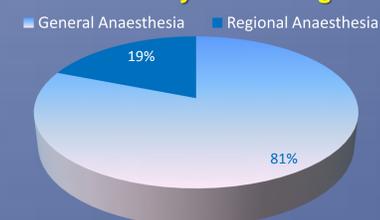
Perioperative Care



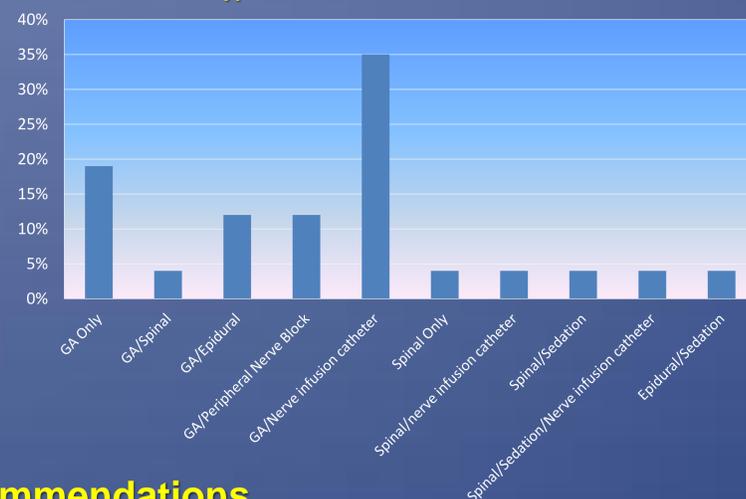
Post-operative Care



Current Anaesthetic Practice Within Severn Deanery: GA vs Regional



Type of Anaesthetic Performed



Recommendations

- Findings to be presented to vascular surgeons + anaesthetists at each centre
- Compliance with perioperative care recommendations was excellent, with nearly all procedures being performed at an appropriate time of day with a senior anaesthetist and surgeon present
- Pre- and post- operative care was less good
- A formal estimation of operative risk should be made for all patients, for example a V-POSSUM Score³. This is concurrent with recent guidance from NCEPOD, which recommended an assessment of mortality risk to be made, documented and clearly communicated to the high risk surgical patient⁴
- Three out of the four centres need a formal pain management protocol to be introduced for patients post-amputation
- Acute pain team follow-up was variable and needs to be improved, as does post-operative physiotherapy
- The majority of cases were performed under general anaesthesia, supplemented by peripheral nerve blockade. There is no strong evidence showing a benefit to any particular technique, although a recent propensity score-matched observational study demonstrated a significantly higher 30-day mortality in patients undergoing major lower extremity amputations under GA compared with regional anaesthesia²
- Re-audit can be completed through upcoming NCEPOD Lower Limb Amputation Study⁵

This audit showed that a multicentre project can be completed successfully and within a short timeframe using a network of trainees across the Bristol School of Anaesthesia (STAR) [@STARResearch](http://www.anaesthesiaresearch.org)

References

- Quality improvement framework for major amputation surgery. VSGBI 2010. http://www.vascularsociety.org.uk/assets/wp-content/uploads/2012/11/vsgbi_framework_for_amputations.pdf, accessed 03/11/2013
- Khan SA, Qianyi RL, Liu C et al. Effect of anaesthetic technique on mortality following major lower extremity amputation: a propensity score-matched observational study. *Anaesthesia* 2013; **68**:612-620
- <http://www.ncepod.org.uk/press-releases>, accessed 03/11/2013
- NCEPOD Perioperative Care: Knowing The Risk, 2011. http://www.ncepod.org.uk/2011-report2/downloads/POC_fullreport.pdf, accessed 03/11/2013
- NCEPOD Lower Limb Amputation Study. NCEPOD 2013. <http://www.ncepod.org.uk/amputation.htm>, accessed 10/11/2013