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

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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 VSGBI 1
• To identify areas in the perioperative pathway for this patient group with a high perioperative mortality rate (8-32%) 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 2010 1
• 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
  - Centre Audit:
• 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:

<table>
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<tr>
<th>Male</th>
<th>Female</th>
<th>ASA III</th>
<th>ASA IV</th>
<th>ASA Unknown</th>
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<td>19</td>
<td>7</td>
<td>16</td>
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Pre-operative Care

- Formal Risk Scoring
- Controllable Risk Factors Optimised
- Consultant Anaesthetist Review

Perioperative Care

- Procedure within normal working hours
- Post-Relationship Anaesthetist
- Consultant Anaesthetist supervision available
- Surgeon performs amputation regularly
- Antibiotic prophylaxis
- Appropriate VTE prophylaxis

Current Anaesthetic Practice Within Severn Deanery: GA vs Regional

- General Anaesthesia
- Regional Anaesthesia

Type of Anaesthetic Performed

- GA: 19
- GA with regional: 6
- GA without regional: 2
- Regional: 8

Post-operative Care

- Formal pain management protocol
- Acute Pain Team - General
- Acute Pain Team - Physiotherapy D2
- Physiotherapy D2

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 Score 2. 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 patient 2
• 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 anaesthesia 2
• Re-audit can be completed through upcoming NCEPOD Lower Limb Amputation Study 5

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) www.anaesthesiaresearch.org/STARResearch

References

3. RCPA. Anaesthetic Care and Quality Assurance. Accessed 03/11/2013
5. This journal is open access. Published by the Anaesthetics Trainee Research Network [STAR] www.anaesthesiaresearch.org/STARResearch