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Introduction

Thoracic epidurals are widely deemed gold standard analgesia.[1] Coupled with careful insertion and high quality post-operative care, they have shown benefit that outweighs risk in certain patient groups.[2]

University Hospital Birmingham provides complex surgical care for a diverse group of patients and wide range of surgical sub-specialities. Provision of effective post-operative analgesia is a key component of Enhanced Recovery After Surgery (ERAS) protocols and is crucial to improving patient experience, morbidity and mortality.

We undertook a review of perioperative epidural use at our Trust to determine **key areas for change or improvement**.

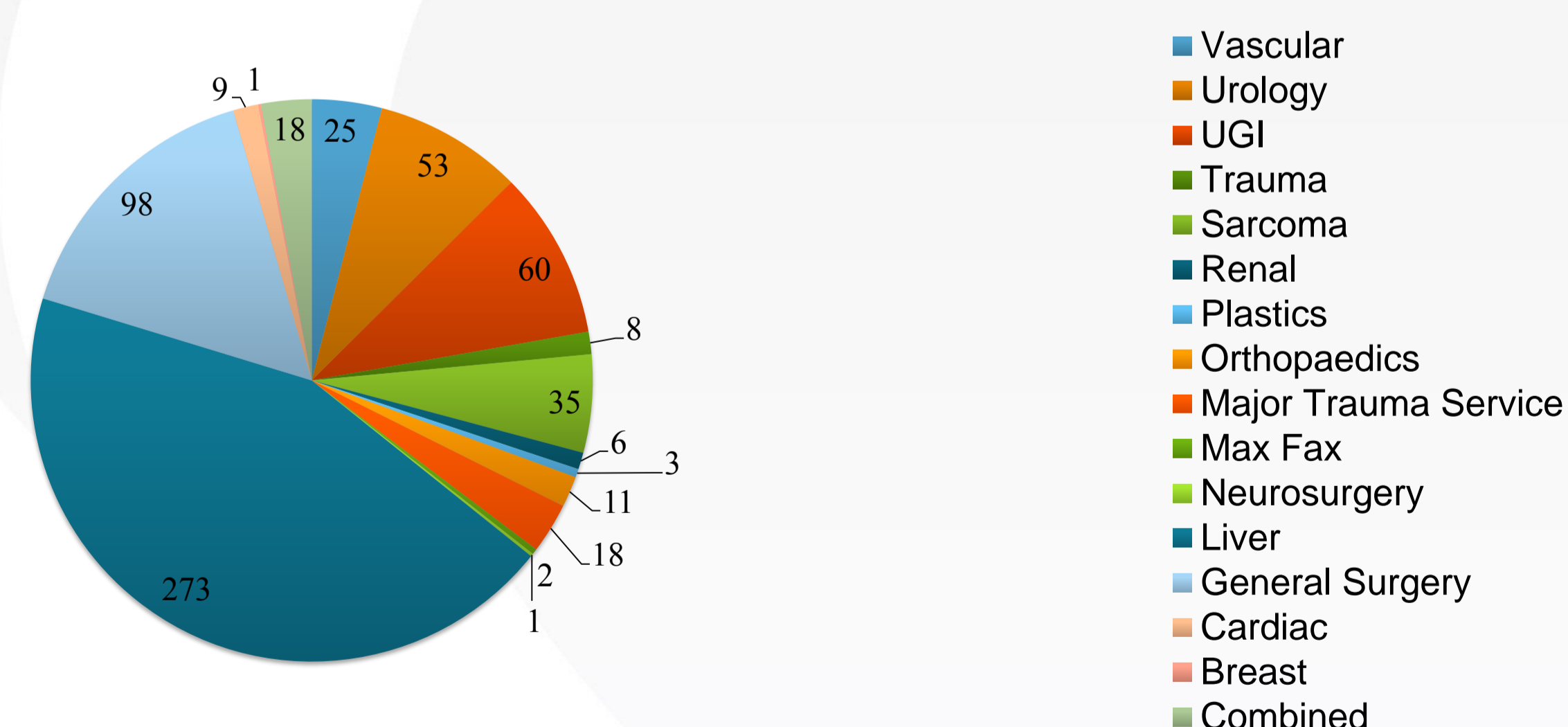
Methods

A single centre retrospective review of perioperative epidurals over 12 months in adult patients undergoing major surgery at University Hospital Birmingham. Initial sample was gathered via interrogation of the hospital Prescribing Information and Communications System (PICS). Subsequent manual review of PICS for data and Excel for chart generation and analysis.

Results

- All 619 cases performed in 2017 were reviewed.
- Patients were aged between 17 and 88 years, with a median age of 65.
- The majority were male, at 59.5%.
- 77% were admitted to ITU post-operatively, including elective and emergency cases.

Chart 1. Surgical Sub-speciality



- 6% of prescriptions were plain bupivacaine 0.125% with 67% and 27% adding 2mcg & 4mcg fentanyl respectively
- Average epidural duration of use (mean, median) was 68 hours.
- Median time to mobilisation was 24 hours, mean 46 hours; 48% of all patients mobilised within 24 hours, 70% within 48 hours.
- Most often documented pain score was 2
- Disabling pain (a maximum pain score of 6 or more) was documented in 54.8% of all cases (339 patients).

Chart 2. Documented problem with epidural (%)

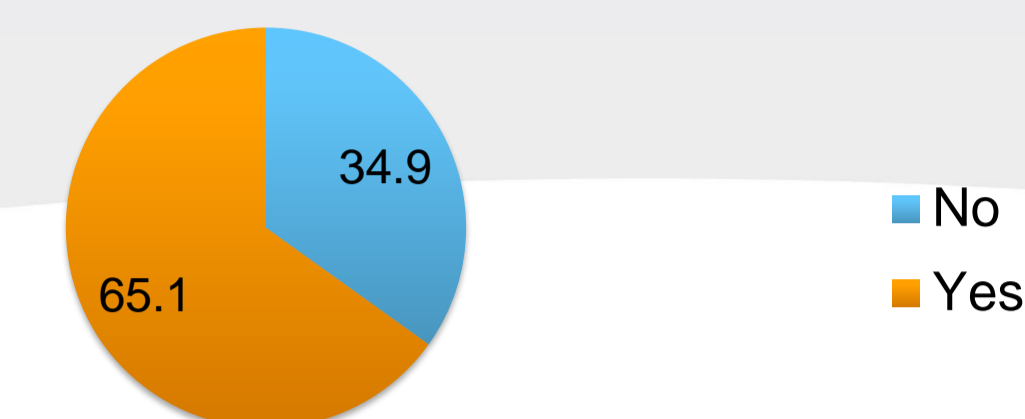


Chart 3. PCA commenced (%)

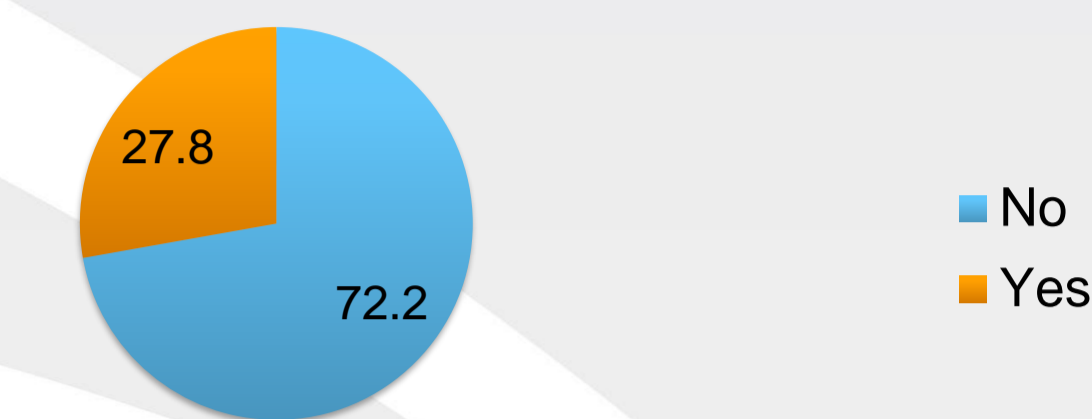


Chart 4. Maximum pain score (%)

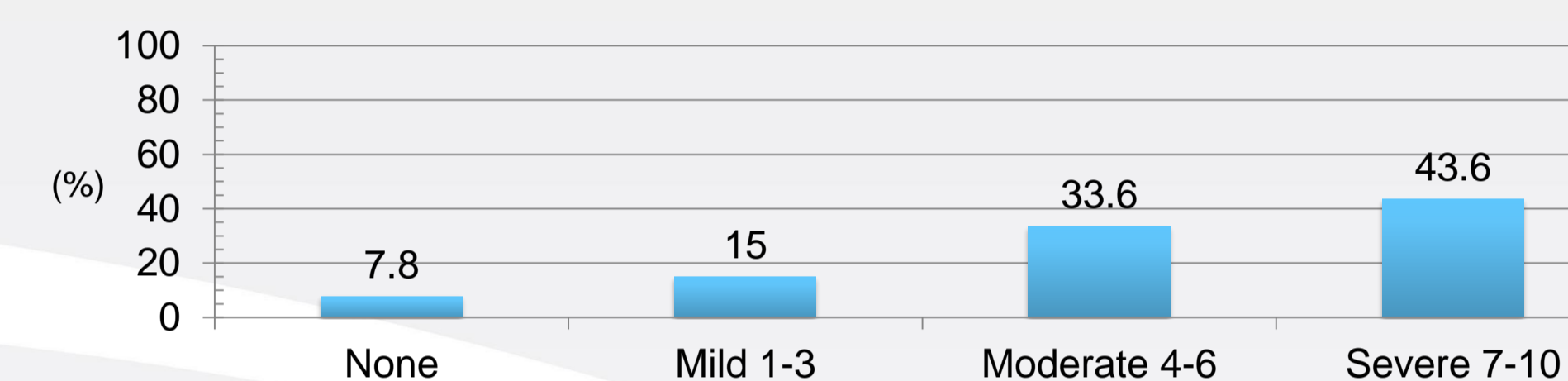
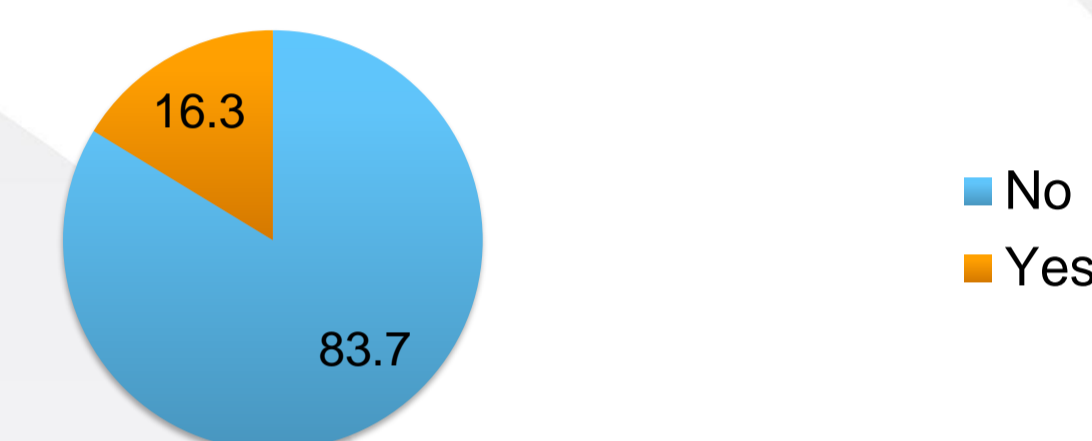


Chart 5. Coagulopathy (%)

Platelets <100, INR >1.5



Conclusions

- This is a heterogeneous group of 619 patients receiving epidural analgesia following complex surgery in a tertiary centre.
- Over half of patients had a documented problem with the epidural – these included cardiovascular effects, which affected early mobilisation in a subset of patients.
- Despite this only 27% had a PCA commenced; if this was taken as ‘failure’, rates are comparable to current literature.[3] Failure rates traditionally quoted in the obstetric population cannot be relied upon when consenting patients in the non-obstetric surgical setting, and patient literature on perioperative epidural use should reflect this – **review of our hospital patient literature** is required.
- Pain score may not correlate with patient satisfaction - for example Trust hepatobiliary PQIP data reflects this – and there was no apparent correlation between maximum pain score and early mobilisation.
- Coagulopathy affected nearly a fifth of cases. These were predominantly in patients undergoing liver surgery and sarcoma surgery. Therefore, in certain patient groups, other options for post operative analgesia may need to be considered, including perioperative intravenous ketamine [4] and rectus sheath catheters [5] which are used both globally and in other centers in the UK.
- Studies to **assess alternatives to epidural** in ERAS are on-going in the UK. Patient preference for post operative analgesia may increasingly play a part in decision making as viable non-epidural alternatives become more widely used.
- In patient cohorts where epidurals are gold standard for post operative analgesia, **use of a PCEA protocol** may provide the optimum level of analgesia and reduce maximum pain scores.[3] These are not currently available at UHB, or widely used in the UK, unlike in the obstetric population where their use is routine.
- In the interim, **ongoing, continual, education of medical and nursing staff** is required to provide optimal management post operative epidurals, including prioritising early review of the epidural if pain is not controlled.

Acknowledgements

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