Audit of Anaesthetic Protocol: Adherence to a Day-Case Arthroplasty Pathway

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NHS Cheltenham Orthopaedic Ambulatory Pathway

Introduction:

The Cheltenham Orthopaedic Ambulatory Pathway (COAP) is a protocolised peri-operative care pathway. It was designed to deliver day-case arthroplasty to reduce length of stay (LoS) to within Getting It Right First Time (GIRFT) targets, and in response to GIRFT principles that reducing non-evidence-based variation in practice can enhance patient outcomes.

Aims:

To assess adherence to the COAP Anaesthetic Protocol.

Methods:

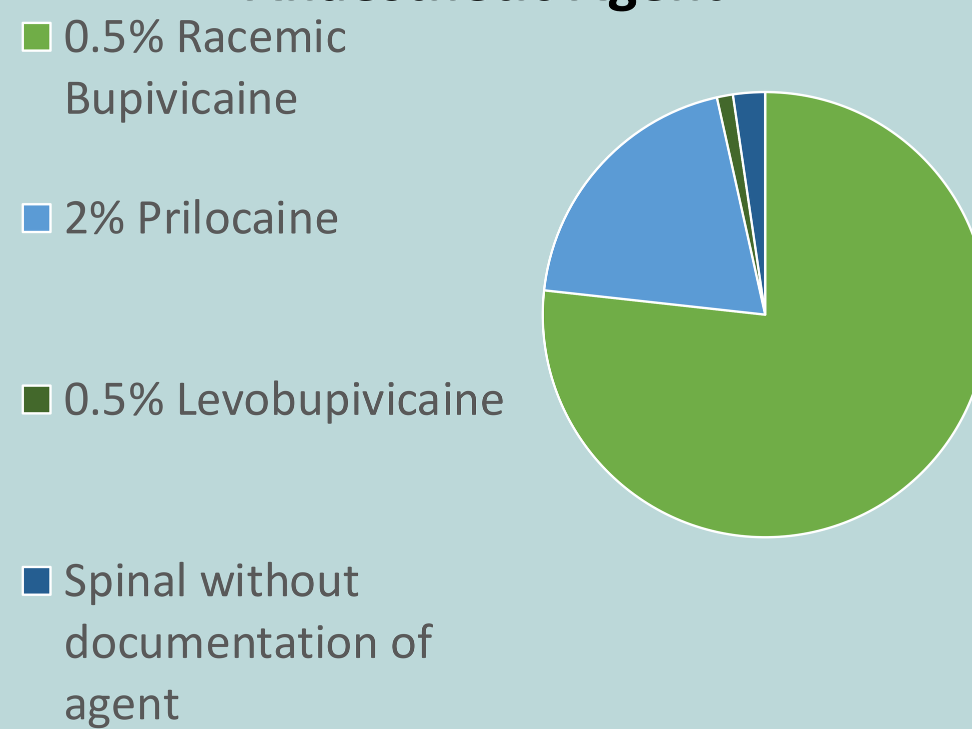
98 patients who underwent an elective total hip replacement (THR), total knee replacement (TKR), or unicompartmental knee replacement (uKR) and were identified as suitable for the COAP were selected. 90 patients' notes were available, including 63 TKR or uKR, and 27 THR. The anaesthetic charts and electronic patient records were audited to quantify adherence to the COAP Anaesthetic Protocol.

COAP Anaesthetic Protocol:

PREMEDS	These will be prescribed by the Pharmacist: **Paracetamol 1 gram** **Etoricoxib 90mg**
ANAESTHETIC: SPINAL	Aim for **low dose spinal** to avoid excessive durations delaying mobilisation and minimise haemodynamic effects. **Opioid free spinal** (GIRFT recommendation). **EITHER:** **0.25%* or 0.5% Racemic Bupivacaine** (or heavy Marcaine) with rapid injection to ensure appropriate spread (NB do not use the levobupivacaine version). (*currently there are limited supplies of 0.25% Racemic Bupivacaine) **OR:** **Prilocaine 2% Hyperbaric** (op time <90mins)
ANAESTHETIC: BLOCK (TKR and UKR)	**Proximal Adductor Canal block** with 0.25% Levobupivacaine with Adrenaline; USS guided.
ANTIBIOTICS & TXA	**ROUTINE:** Single IV dose of IV Ceftriaxone 2g at induction **MRSA or PENICILLIN ALLERGY:** weight adjusted Teicoplanin & Gentamicin single IV dose of each **OR** if CrCl<30ml/min, Teicoplanin and Ciprofloxacin 400mg. **TXA:** 1-2g IV at Induction
INTRA-OPERATIVE CARE	**DUAL ANTIEMETICS:** Dexamethasone 6.6mg PLUS Ondansetron 4mg **NORMOTHERMIA:** warmed IV fluids & warming blanket with regular temperature monitoring. **NORMOTENSION:** aim MAP within 20% of pts pre-op MAP. Use vasopressor rather than excessive fluid. **NORMOVOLAEMIA:** aim for single 1000ml bag IV fluids, unless significant blood loss **AVOID CATHETERISATION** **Avoid sedation:** where necessary, low dose conscious sedation with a single agent (0.5-1mcg/ml TCI propofol + capnomask 5l/min) to achieve anxiolysis and wean approximately 15minutes before the end of the operation
SURGICAL LOCAL ANAESTHETIC INFILTRATION	SURGICAL LOCAL ANAESTHETIC INFILTRATION: Protocol involves adding a weight adjusted dose of levobupivacaine to specified volumes of saline and adrenaline. 50-69kg: 30mls 0.25% levobupivacaine; >70kg: 40mls 0.25% levobupivacaine
POST OP: RECOVERY	**NUTRITION: Post op recovery drink, take fluids down and encourage oral fluids** **TXA: 1 gram PO 4 hours post op** **HAEMACUE: >100g/L, no need for formal bloods**

Results:

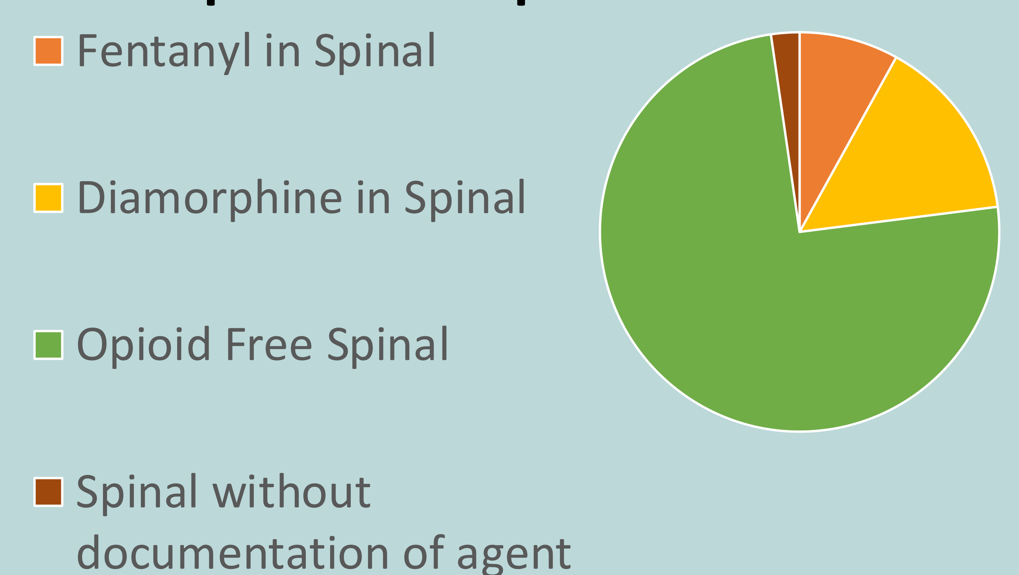
Adherence to Protocol For Anaesthetic Agent



86 patients had spinal anaesthetic.

Of these, 97% (n=83) received an agent that adhered to the protocol.

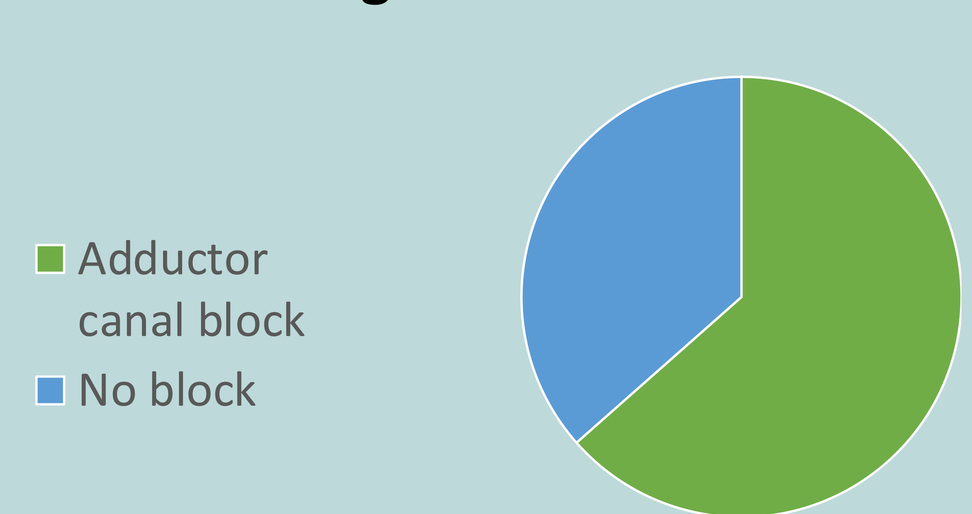
Adherence to Protocol for Opioid-Free Spinal



74% (n=65) had an opioid-free spinal. Median LoS = 1.2 days (0.3-5.3)

23% (n=21) had spinal diamorphine or fentanyl. Median LoS = 1.4 days (0.5-10.3)

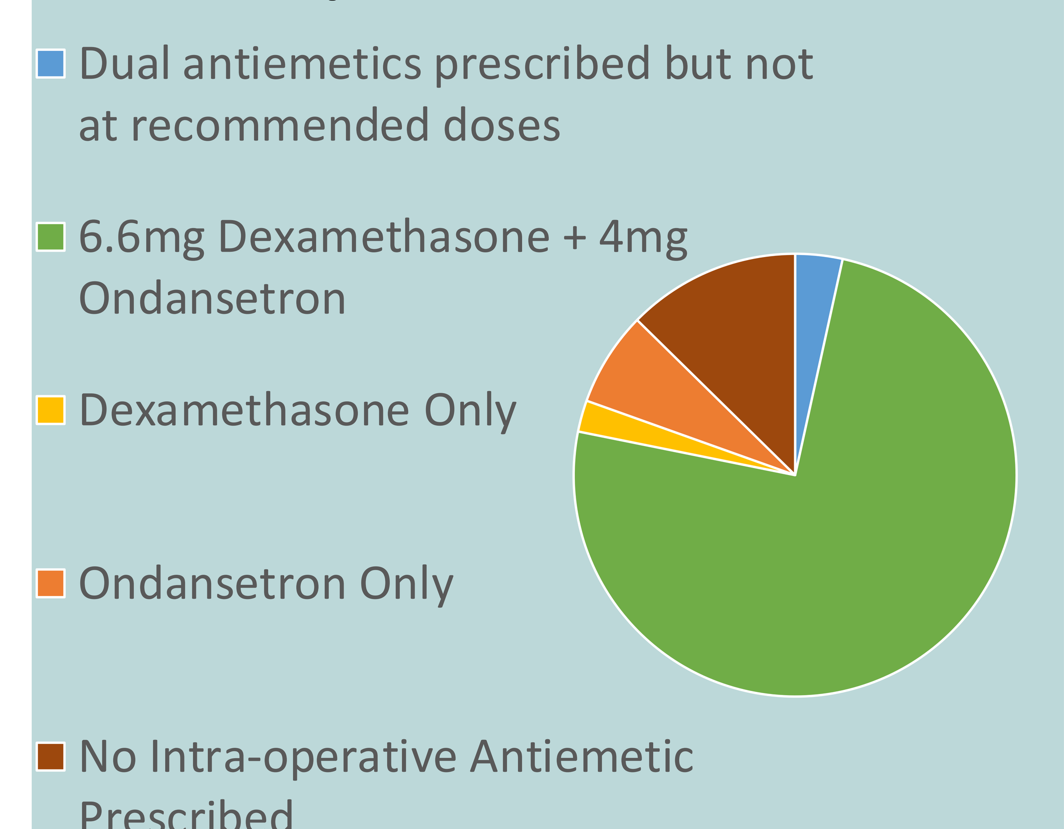
Adherence to Protocol for Regional Block



63% (n=40) of patients who had a TKR or uKR had an adductor canal block. Median LoS = 1.2 days (0.3-5.2)

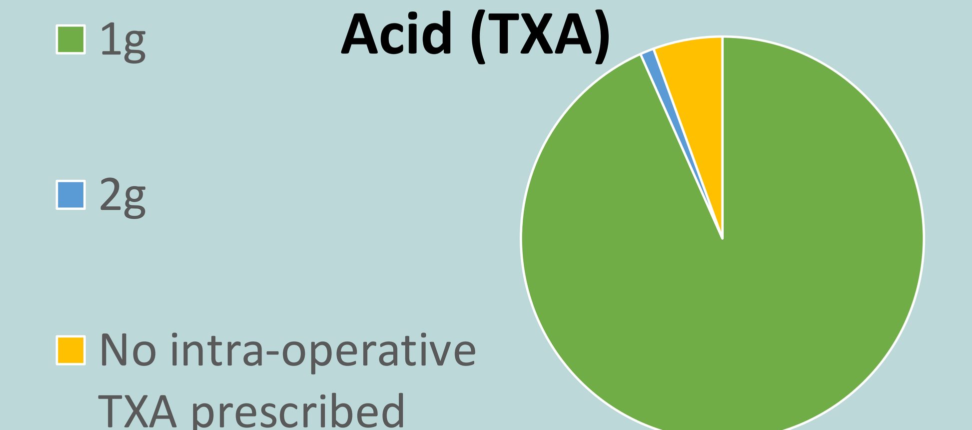
37% (n=23) didn't receive a block Median LoS = 1.4 days (0.3-9.4)

Adherence to Protocol for Intra-operative Antiemetics



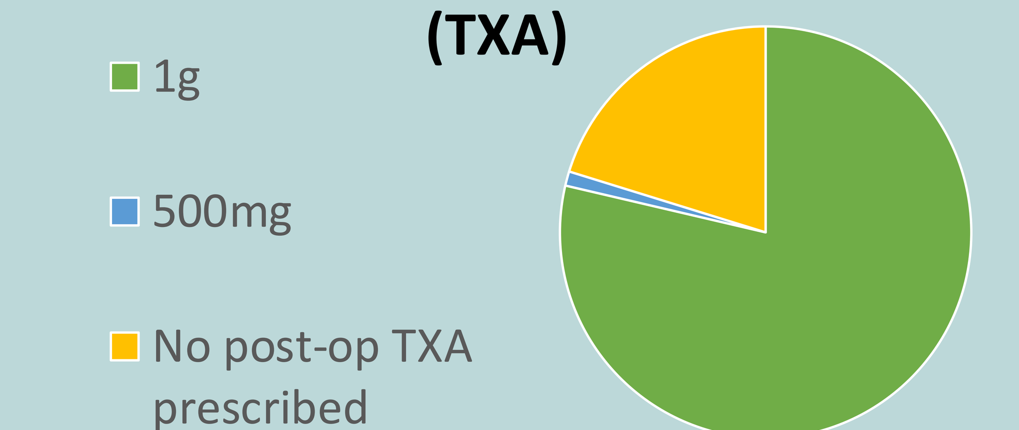
76% (n=67) of patients received the recommended dual antiemetics intraoperatively.

Adherence to Protocol for Intra-operative Tranexamic Acid (TXA)



94% (n=85) received intra-operative tranexamic acid.

Adherence to Protocol for Post-operative Tranexamic Acid (TXA)



79% (n=71) received post-operative tranexamic acid.

Conclusions:

Adherence to the protocol for spinal anaesthetic agent was 97%, however there was poorer compliance for regional block in knee replacements at 63%.

Next Steps:

To improve concordance, the Anaesthetic Protocol was presented at the monthly MDT meeting and the importance of non-opioid spinal anaesthetic and regional blocks was emphasised. In addition, an Anaesthetic Consultant engaged in the project as a champion.
We aim to reaudit in 2 months following this intervention.

References: GIRFT: Orthopaedic Elective Surgery Guide to delivering perioperative ambulatory care for patients with hip and knee pain requiring joint replacement surgery. https://gettingitrightfirsttime.co.uk/wp-content/uploads/2023/07/Ambulatory-Hip-and-Knee-Replacement-Guide-March-2023-FINAL-V1-1.pdf