# LOWER LIMB ARTHROPLASTY PATHWAY

## PREADMISSION

- Pre-assessment pathway as per orthopaedic/trust guidelines:
  - JCUH and FHN: Same orthopaedic TKR/THR booklet
  - Health and function questionnaire
  - Bloods/ECG/G&S: Check Auto-Antibodies
    - Care: Anaemia and CKD (Check Creatinine and eGFR)
  - MRSA and Urinalysis (MSU if required).
  - DVT risk assessment
  - ***Early anaesthetic assessment if required***
- Positive reinforcement of the following principles:
  - Clarify expectations, distribute information booklets (Appendix 1)
  - DOSA
  - Need for regular medication. Continued as per protocol
    - Bring regular medications with them on admission.
  - Fasting guideline:
    - See trust document (needs to be in preassessment)
  - Spinal anaesthesia plus or minus sedation
    - Information booklets. (Link to RcoA)
- Need for Physiotherapy and early mobilization
    - Preoperative joint education
    - Information booklet/classes/DVD/website
- Check Consent: Formal consent taken in orthopaedic clinic
- Prescription stickers completed and filed in drug kardex (Appendix 2)
- Expected discharge date:
  - Discharge risk assessment, early involvement of orthopaedic discharge team, consider TTO needs (Appendix 3)

## DAY OF SURGERY ADMISSION: Day Zero

- Patients admitted into SAU/ward area:
  - Trust TKR/THR documentation completed Consent checked
  - G&S clarified: Repeat if required
  - Dressed for theatre
  - MRSA status checked
  - Dipstick urine (MSU if required)
- Continue patient's own medication as required/instructed
- The side of surgery must be marked
  - As per the correct side surgery protocol (Policy G25 trust intranet)
- Fasting as per trust guidelines:
  - Six hours for solids/food/non clear fluids
  - Free clear fluids up until 2 hours of operation.
    - Water should be encouraged in the preoperative setting to avoid dehydration in the elderly population
- Premedication:
  - Oral Paracetamol as per SAU pgd policy
  - As per sticker prescription (Appendix 2)
  - Lansoprazole 30mg
  - Gabapentin 300mg (not if patient already on Gabapentin)
    - Consider omitting dose in the very elderly/frail/renal impairment

## INTRAOPERATIVE SETTING

- Anaesthesia must be tailored to allow an early return of postoperative function including:
  - Cognitive and functional recovery
  - The exact recipe is not dictated here and is at the discretion the individual anaesthetist
  - If General Anaesthesia is used, minimise intraop opiates
- Spinal. 0.5% Heavy Marcain 2.5-2.8ml or 3.0-4.0ml 2% Heavy Prilocaine
- Consider avoiding intrathecal opiates
- TCI Propofol sedation as required
- IV Diclofenac 75mg or Parecoxib 40mg and IV Paracetamol 1g
  - If not contraindicated
- IV Ondansetron 4mg and Dexamethasone 3.3-6.6mg (formulation dependant).
- Consider low dose IV Ketamine: up to 0.5mg/kg

## INTRAOPERATIVE SETTING

- IV Antibiotic (Prior to inflation of tourniquet)
  - Usually: Ceftriaxone 2g +Teicoplanin 400mg
- Avoidance of urine catheter and surgical drain where appropriate
  - Consider urine catheter for CKD 3/4 and high risk patients
  - If surgical drain used this should be removed as soon as possible- Either in recovery or on return to the ward
- Optimise IV fluids intraop
- Patient warming e.g. Bair Hugger (Warming of IV fluids is not necessary).
- Tranexamic acid: 1g IV (Consider a higher dose 1.5-2.5g in some patients).
  - This needs discussion between consultant surgeon and anaesthetist
  - Standard dose equates to approx 15mg/kg
- Surgical dressings should be kept to a minimum to allow mobilization in the ward area.

## LOCAL INFILTRATION ANALGESIA

- Ropivacaine 0.2% up to 150ml in divided doses
- Consider the addition of 1mg Adrenaline to the LIA
  - 1mg/200ml bag: 1:200,000 ADR
  - Scrub nurse makes up 3x 50ml syringes from 200ml bag
  - Epidural needle allows easier insertion
  - *Total drug dose recorded on anaesthetic form and operation note*

    **TKR:**
    - Posterior capsule
    - Proximal to the supra-patellar pouch
    - Subcutaneous structures

    **THR:**
    - Anterior capsule
    - Deep tissues
    - Subcutaneous tissues

## DISCHARGE FROM RECOVERY

- Standard recovery protocols apply
- Ensure prescription of:
  - Regular postop and step-down analgesia
  - Breakthrough analgesia prescribed
  - Antibiotics and DVT prophylaxis
- Check block height
- Regular observations, pain score, sedation, nausea: Complete theatre care plan.
- Check dressings and drains
- Remove IV fluids and drains as instructed.

## POSTOPERATIVE/ WARD SETTING

**Standard Analgesia:**

- Regular multi-modal morphine sparing analgesia is required
- Continue the patients' current medication e.g. Fentanyl patch, MST, Gabapentin etc
- Regular oral/Iv Paracetamol 1g 6 hourly and NSAID throughout admission if not contraindicated:
  - Diclofenac/Ibuprofen 50mg/400mg 8 hourly or Naproxen 250-500mg BD
  - Diclofenac SR 75mg bd or COX2
  - Careful consideration in Elderly/Diabetics/ACEI/Renal/Cardiac Disease
- Regular Codeine 30-60mg QDS or Tramadol 50-100mg TDS as deemed appropriate
  - *Step down analgesia to commence on day one, prescribed with regular meds.*
- Gabapentin 600mg
  - Single dose, $22^{00}$ evening of surgery
  - Not if patient already on Gabapentin, consider reduced dose in elderly/renal
- Oxycontin 5mg -10mg, two doses according to timing on the list
  - *Morning cases: $12^{00}$ and $00^{00}$ or $15^{00}$ and $00^{00}$.*
  - *Afternoon cases: $18^{00}$ and $06^{00}$ or $20^{00}$ and $08^{00}$*
    - Needs prescribing in the "once only" section
- Oral Morphine Sol. "Oramorph" 5-10mg 2-4 hourly for breakthrough pain in first 24 hr

**Additional Medication:**

- Ondansetron 4mg regularly 6 hourly (po/iv)
- Lansoprazole 30mg po in the morning for all patients
- Laxido 1 sachet nocte +/- Senna 2 tabs nocte: To prevent constipation
- Minimal/no IV fluids in the postoperative period
  - Boluses of colloid prescribed for hypotension
- Antibiotics as per surgical instruction: Needs discussion as per WHO check
- DVT prophylaxis:
  - Requires discussion prior to leaving theatre as per WHO check
    - As per individual risk factors/ surgeons/NICE protocol
    - Usually Apixaban 2.5mg bd (commencing day 1)

## BREAKTHROUGH PAIN

- If VAS scores are escalating and unresponsive to oral analgesia consider contacting anaesthetics/Acute pain service
- Morphine IV 5-10mg 2-4 hourly
  - Must be prescribed on drug chart before discharge from recovery
- Rescue Antiemetic: Cyclizine 50mg IV 6 hourly or Buccastem 5mg SL 6 hourly

## WARD CARE

- Patient assessment:
  - All patients require their EWS chart to be completed as per trust protocol
  - The four hourly pain assessment charts must be completed. This is mandatory for ***ALL*** patients:
    - Visual analogue score: at rest and with movement
    - Vomiting score
    - Sedation score
- Nursing and Physiotherapy assessment;
  - ROM, power, proprioception
  - Set criteria for mobilisation:
    - Stable observations EWS <1
    - Pain score <4
    - Vomiting score <1
    - Sedation score <1
    - No sensory or motor blockade
  - Patients encouraged into chair early post-op
- Early mobilisation is to be encouraged
- Ensure regular medications are appropriately prescribed
- Encourage eating and drinking
  - Minimal/no IV fluids in the postoperative period
    - Boluses of 500ml Hartmann's solution prescribed for hypotension or dizziness on mobilisation
    - Monitor for urine output, bladder scanner
      - No urine output? ***Check bladder full or empty?***
    - If catheter required; removed at earliest opportunity after effects of spinal worn off: ***Consider a catheter if NO PU postop***
    - ***Care needs to be taken in CKD 3/4 and high risk patients***
- X-ray and post operative bloods prior to discharge
  - **Monitor for postoperative anaemia and AKI**
    - **Check Hb, U&E and eGFR**
- Physiotherapy assessment and documentation to be completed
- Consider drugs/analgesia requirements for discharge (Appendix 3)

## Physiotherapy discharge criteria THR

- Independent with transfers- bed/chair
- Independently mobile +/- walking aid
- Independent on steps/stairs as needed
- Independent with exercises

## Physiotherapy discharge criteria TKR

- Independent with transfers- bed/chair
- Independently mobile +/- walking aid
- Independent on steps/stairs as needed
- Independent with exercises
  - ROM
    - Flexion >80
    - Extension <+10
      - Except special circumstances e.g. Intraoperative ROM, postoperative complications etc
    - Functional quadriceps control

## IS THE PATIENT FIT FOR HOME DISCHARGE?

- **Is the patient medically well?**
- **Fixed functional discharge criteria:**
  - Physiotherapy discharge criteria are met.
  - Occupational therapy equipment in place as indicated
- **Wound Care:** The wound should be dry, dressed and free from infection
- **Postoperative Investigations:**
  - Bloods and Xrays within acceptable limits
    - Check Hb: *Consider oral Iron 1 week postop*
    - Check U&Es and eGFR
- **Analgesia:** Pain must be well controlled on simple pain killers
  - Take home prescription and analgesia packs: (Appendix 3)
  - Regular and breakthrough analgesia must be prescribed
  - Drugs standardised and arranged in-house to allow weekend discharge
  - Patients discharged on NSAIDS must remain on a PPI for the duration of treatment
    - Care with NSAID use in the elderly/frail/Diabetic/ACEI/Renal impaired
    - If the patient still requires strong opiates (e.g. “Oramorph”) are they ready for home discharge?
- **DVT prophylaxis:**
  - As per departmental protocol
    - If required S/C injection training, (pre assessment and pre-discharge)
    - Patients on Aspirin must remain on a PPI for the duration of treatment.
- **Regular Medications:**
  - Are these prescribed? Do they have enough of their own medications to take home? Does the patient need a repeat prescription?
  - Continue oral Laxido 1 Sachet nocte +/- Senna 2 tabs nocte
- **Patient Information:**
  - Information as per Appendix 1
  - Home physiotherapy/exercise instructions
  - Outpatient physiotherapy referral sent as indicated
  - Information and advice booklets
  - Wound care advice
  - Ward Contact telephone numbers “hot lines” (Appendix 1)
- **Follow-up appointment**:
  - Telephone follow-up Acute Pain Service at 1 week
  - Joint Replacement clinic at 2 weeks
  - Consultant clinic 6-10 weeks
- **Discharge Checklist:**
  - Completed and signed. E-discharge complete?
  - E-Discharge completed

**Appendix 1**

**Patient Information:**

**Pre assessment:**

- Pain management after discharge
- Wound care
- DVT prophylaxis +/- Clexane training if required
- Your Anaesthetic for TKR or THR (Produced by RCoA)
- Physiotherapy/OT Information
- All patients to receive: Preoperative Information Booklet and DVD.

**Discharge:**

- Confirm the above documents are in place, and understood
- Above information reinforced: Analgesia, DVT care, Wound care.
- Telephone contacts “Hot Lines”
- Each ward area to have a “point of contact”
    - Ward 36 JCUH: 01642 854536
    - Ward 34 JCUH: 01642 854534
    - Gara Ward FHN: 01609 763091
- Any problems, patients to be assessed in Post-Arthroplasty Assessment Area:
    - JCUH: Ward 37 and Gara ward FHN

## Appendix 2

## Preoperative Stickers:

| DATE | MEDICINE (APPROVED NAME) | DOSE | ROUTE | TIME TO BE GIVEN | SIGNATURE | GNC/GMC No. | DATE | TIME GIVEN | GIVEN BY | CHECKED BY |
|---|---|---|---|---|---|---|---|---|---|---|
| | ~~Preload: x1 Sachet in 400ml of water to be taken orally the night before surgery~~ | | | | | | | | | |
| | ~~Preload: x1 Sachet in 400ml of water to be taken orally the morning of surgery. Complete dose by 2 hours prior to surgery~~ | | | | | | | | | |
| | Gabapentin | 300mg | orally | 2 hours Preoperatively | | | | | | |
| | Lansoprazole | 30mg | orally | 2 hours Preoperatively | | | | | | |
| | Cefuroxime | 1.5g | IV | Induction of Anaesthesia | | | | | | |
| | Cefuroxime | 750mg | IV | 8 hours Postoperatively | | | | | | |
| | Cefuroxime | 750mg | IV | 16 hours Postoperatively | | | | | | |
| | Gabapentin (delete as appropriate) | 300mg/ 600mg | orally | 22.00 Hours | | | | | | |
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| ROUTE | MEDICINE (Approved Name) | SIGNATURE & PRINT NAME | Date | Time |
|---|---|---|---|---|
| **PO/IV** | **Paracetamol** | | | |
| SPECIFY TIME REQUIRED ↓ | DOSE **1g** / SPECIAL INSTRUCTIONS | Registration No. | PHARMACY | |
| Morning | ✓ | | | |
| Midday | ✓ | | | |
| Evening | ✓ | | | |
| Bedtime | ✓ | | | |

| ROUTE | MEDICINE (Approved Name) | SIGNATURE & PRINT NAME | Date | Time |
|---|---|---|---|---|
| **PO/IV** | **Ondansetron** | | | |
| SPECIFY TIME REQUIRED ↓ | DOSE **4mg** / SPECIAL INSTRUCTIONS | Registration No. | PHARMACY | |
| Morning | ✓ | | | |
| Midday | ✓ | | | |
| Evening | ✓ | | | |
| Bedtime | ✓ | | | |

| ROUTE | MEDICINE (Approved Name) | SIGNATURE & PRINT NAME | Date | Time |
|---|---|---|---|---|
| **PO** | **Lansoprazole** | | | |
| SPECIFY TIME REQUIRED ↓ | DOSE **30mg** / SPECIAL INSTRUCTIONS **Drug to be given to all patients. Drug must be continued at discharge for patients on NSAIDS** | Registration No. | PHARMACY | |
| Morning | ✓ | | | |
| Midday | | | | |
| Evening | | | | |
| Bedtime | | | | |

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**Appendix 3**

Ward: 36/GARA

# Standardised Orthopaedic Discharge Prescription

| **Analgesia** | | | ***Initial*** as required |
|---|---|---|---|
| Paracetamol<br>Tramadol<br>OR<br>Paracetamol<br>Codeine | 1g QDS<br>See below CD section<br><br>1g QDS<br>30mg- 60mg QDS PRN | 100x500mg<br><br><br>100x500mg<br>56x30mg | ☐<br><br><br><br>☐ |
| Ibuprofen<br>Lansoprazole<br>OR<br>Naproxen<br>Lansoprazole | 400mg TDS with or after food<br>30mg OD<br><br>250mg BD with or after food<br>30mg OD | 24x400mg<br>7x30mg<br><br>28x250mg<br>7x30mg | ☐<br><br><br>☐<br> |
| Oral Morphine 10mg/5ml Solution | 5ml to be used when required up to hourly for pain as rescue therapy | 100ml | ☐ |
| Laxido | Oral powder 1 sachet nocte | 14 sachets | ☐ |

**Additional Medications:**

| | | | | |
|---|---|---|---|---|
| Aspirin<br>Lansoprazole | 150mg OD for SIX weeks post surgery<br>30mg OD for SIX weeks post surgery | | 84x75mg<br>42 | ☐ |
| Enoxaparin | Use 40mg daily post surgery as directed | Days | ..... | ☐ |
| Enoxaparin | Use 20mg daily post surgery as directed | Days | ..... | ☐ |
| Apixaban | 2.5mgs BD post surgery as directed | Days | ..... | ☐ |

*All patients discharged on an NSAID or Aspirin must have a PPI co-administered for the duration of treatment. Pharmacy staff should supply the longest duration prescribed. Careful prescription of NSAIDS in the elderly/frail/diabetic and renal impairment.*

**Controlled Drug Section:**

Drug Name: _____
Form and Strength: _____
Total Quantity Supplied (words and figures):
_____
_____

**Patient Details: Hand Written if Controlled Drug:**

**Name**.....
**D Number**..... **DOB**.....
**Address**.....
.....
.....

**Prescriber's Details**

**Name:**
**Signature:** **Date:**
**GMC Number:**
**Bleep/Tel Number:**
**Supplier's Details:**
**Supplied by:** **Checked by:**