Renal Directorate Guidelines

Royal Infirmary of Edinburgh

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**Management of pain in patients with renal impairment**

Patients with renal impairment can accumulate a drug or active metabolite causing unwanted adverse effects. Dihydrocodeine, morphine and diamorphine should be avoided due to potential for accumulation. Laxatives should be prescribed for patients on opiates. Contact the pain team or palliative care team for patients with complex analgesia requirements. This guideline outlines local approach to pain management in renal impairment (eGFR <30ml/min/1.73m2) and suggested starting doses.

**The key prescribing points in severe renal impairment:**

* start with low doses and titrate slowly;
* use immediate release opiates and increase the dosing interval;
* avoid modified release preparations where possible;
* review patient frequently for signs of over-sedation / opiod accumulation.

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| **Step 1: Mild Pain** |
| **Paracetamol** **1g four times daily (6 hourly interval)**  - removed by haemodialysis  - dose reduction required if body weight < 50 kg  Ibuprofen 200mg - 400mg three times daily can be considered for patients on Renal Replacement Therapy (RRT). All patients on dialysis will be more susceptable to the gastrointestinal and anti-platelet effects of NSAIDs. In patients who still make urine, there is also the risk that NSAIDs may impair residual renal function and exacerbate fluid retention / hypertension. Risk/benefit should be considered by a senior decision-maker prior to prescribing. |

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| **Step 2: Moderate Pain** |
| **Co-codamol (8/500) 1-2 tablets up to four times daily as required (stop paracetamol)**  - codeine is a weak opiate which is almost entirely excreted by the kidney  - not removed by haemodialysis  OR  **Paracetamol + Tramadol (CD) 50mg up to 8 hourly**  - contraindicated in patients with convulsive disorders as lowers seizure threshold  - caution with other medications that increase risk of seretonin syndrome  - removed by haemodialysis |

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| **Step 3: Moderate Pain (for patients intolerant of low dose codeine/tramadol)** |
| **Paracetamol + Nefopam 30mg up to three times daily**  **- nefopam is restricted in NHS Lothian for use in patients with impaired renal function (eGFR <30ml/min/1.73m2) who are unable to take codeine or tramadol AND who require analgesia for post-operative pain in hospital AND should be initiated under renal supervision**  - if these restrictions are not met then a non-formulary form must be completed  - contraindicated in patients with convulsive disorders as lowers seizure threshold  - caution in elderly patients as can cause confusion  - nefopam is unlikely to be removed by haemodialysis |

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| **Step 4: Moderate to Severe Pain** |
| **Paracetamol + Oxycodone (CD) immediate release 2mg up to four times daily** (stop co-codamol, tramadol or nefopam)  - twice as potent as morphine; take care when switching preparations  - increased half life and decreased excretion of metabolites in patients with renal impairment  - unknown dialysiability  - remember that opiod excretion is impaired in renal failure and therefore modified release preparations are usually not required and may cause harm  - if requiring more than 15mg daily consider switching to fentanyl 12 microgram/hour patch |

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| **Step 5: Severe pain** |
| **Fentanyl Patch (CD)** **12 micrograms over 72 hours**  - continue oxycodone 4 hourly for the first 12 hours until patch takes effect and then stop  - opiate of choice for stable pain  - not removed by dialysis  - caution in patients with pyrexia due to increased absorption (ensure patient counselled)  - matrix patches can be cut in half diagonally if required for dose titation (NB cutting patches is off-license)  Breakthrough:  **Oxycodone (CD) immediate release 2mg up to 4hourly (as above)**  *OR*  **Alfentanil injection (CD) 100-200micrograms as required up to one hourly**  **-** can be administered subcutaneously or sublingually  - also available as a sublingual spray  - short acting  - not removed by haemodialysis |

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| **Adjuvant analgesics (initial doses)** |
| **Gabapentin 100mg at night (CD)**  - removed by haemodialysis  *OR*  **Pregabalin 25 mg at night (CD)**  - removed by haemodialysis  *OR*  **Amitriptyline 10mg at night**  - removed by haemodialysis  - titrate according to response.  - adjuvant analgesics can be added at any stage of pain management for neuropathic pain |

**References:**

1. Renal Drug Database
2. British National Formulary.www.medicinescomplete.com. Accessed 28/11/2022