MIL

Oxford University Hospitals NHS
NHS Foundation Trust

Volume 12 No.2 **October 2025**

This Medicines Information Leaflet is produced locally to optimise the use of medicines by encouraging prescribing that is safe, clinically appropriate and cost-effective to the NHS.

Care at the end of life: prescribing in end-stage kidney disease & in patients with eGFR less than 30ml/min

Definitions and key information

End-stage kidney disease (ESKD)	Defined as eGFR less than 15 ml/min, but at eGFR less than 30 ml/min, drug accumulation is significant. See 'Assessing Renal Function.'
Renal replacement therapy	Haemodialysis, peritoneal dialysis and transplant.
Clinical signs of opioid accumulation/ opioid toxicity	Confusion (new or worsening cognitive dysfunction) Myoclonic jerks Hallucinations Agitation Drowsiness Unresponsive (late/severe sign) Reduced respiratory rate (late/severe sign)
Common uraemia signs and symptoms	*Gastrointestinal*: nausea, vomiting, loss of appetite, taste changes. *Skin*: dryness, pruritus (itchy skin). *Neurological*: cognitive dysfunction (delirium or confusion), agitation, encephalopathy, restless leg syndrome, myoclonus or asterixis, somnolence.
Signs and symptoms that indicate that a patient is at risk of dying in 1-2 weeks.	Exhaustion, fatigue. Profound weakness, leading to limited mobility (may be bedbound) and dependence on assistance with most/all activities and personal care. Somnolence (& sleep is not restorative). Confusion or disorientation. Loss of interest including in food, drink and engagement. Dysphagia with diet, fluids and/or medications. Increasing symptoms such as agitation, restlessness, respiratory secretions or breathlessness. Patients who are dying may have radiological and laboratory signs of disease progression and show limited or no response to treatments.
Continuous subcutaneous infusion (CSCI)	Also known as a syringe driver or syringe pump, delivers medication at a constant rate over 24-hour period. Combinations of medications can be delivered via one CSCI, requested via ***Continuous subcutaneous infusion (via syringe driver) PowerPlan*** under requests & prescribing in EPR. Ask the palliative care team for help if needed.

Introduction

Patients with ESKD who are in the last days to weeks of life, including patients withdrawing from dialysis, may experience symptoms of uraemia (predominate) and fluid overload.

Assessing Renal Function

Assessment of renal function guides prescribing medications in patients with ESKD or reduced renal function (defined as eGFR less than 30ml/min) in the last days to weeks

of life to avoid side effects and toxicity. Estimated glomerular filtration rate (eGFR) in this patient cohort can overestimate renal function. Creatinine clearance is more accurate in estimating renal function in patients who are low weight (and/or have significant loss of muscle mass), frail and older age. This can be calculated using Cockcroft-Gault equation (www.mdcalc.com/creatinine-clearance-cockcroft-gault-equation).

Patients should be reviewed regularly for side effects and toxicity when medications are introduced and/or doses are increased. Drug accumulation and pharmacokinetics depend on many other factors including age, frailty, hepatic function, body weight, serum albumin, and concurrent medication use.

Symptom management

Pain

Non-opioid analgesia

- Paracetamol 1g every 4–6 hours, max. 4g in 24 hours if able to swallow.

- After careful consideration (when a patient is dying, the risk of further renal deterioration will not change the prognosis), NSAIDs may be used at end of life. The COX-2 selective NSAIDS, celecoxib and parecoxib, may be preferable, but are restricted items on the formulary. Please refer to the palliative care team.
- If patient is established on and able to continue pregabalin or gabapentin, dose reduction may be needed to avoid side-effects. Suggested doses (that are higher than initiation doses):
- Gabapentin: 150 to 300mg in 3 divided doses (initiation dose 100 mg nocte)
- Pregabalin: maximum 75mg OD (initiation dose 25 mg nocte)
- Starting gabapentinoids de novo in dying patients is rarely done; the onset of benefit is too slow.

Oral/ subcutaneous opioids

- If possible, avoid morphine, tramadol, codeine as risk of opioid toxicity and side effects.
- First line: oxycodone 1.25–2.5mg every 4 hourly PRN PO/SC
- If more than 3 PRNs are used in 24 h, consider CSCI.
- If CSCI is required, use oxycodone at a starting dose of 5–10 mg/ 24h.
- If patient develops signs of opioid toxicity, please refer to the palliative care team for advice on alfentanil prescribing.

Transdermal opioid patches

- If patient is established on a fentanyl or buprenorphine patch, these may be continued.
- However, in the last days of life, commencement or up-titration is not recommended
- They should not be started in patients who are unstable and/or have escalating pain.

Shortness of breath

- Reposition the patient upright, chest physiotherapy input, relaxation techniques
- Treat any appropriate reversible cause e.g. bronchospasm, infection, pulmonary embolism
- Explain factors contributing to breathlessness, explore any anxiety and reassure patient
- First line medication: oxycodone 1.25-2.5mg 4 hourly PRN PO/SC
- If concurrent anxiety: combine with midazolam 2.5mg 4 hourly PRN SC

Nausea and Vomiting

- Choice of antiemetic is guided by underlying mechanism of nausea and vomiting.

- If uraemia is underlying cause, first line would be haloperidol 0.5-1mg SC PRN QDS.
- If more than 3 PRN doses are given in 24h, consider increasing dose to 1.5 mg or start CSCI with 1.5-3 mg/24h.
- If gastroparesis is underlying cause, first line would be metoclopramide 10 mg SC PRN QDS.
- If more than 3 PRN doses are required in 24h, consider starting CSCI with 40 mg metoclopramide/24 hours.
- For patients with Parkinson's disease, use ondansetron 4–8 mg SC PRN QDS. Or consider starting CSCI with 16 mg ondansetron/24 hours
- If symptoms persist, reassess the underlying cause and/or discuss with palliative care team.

Distress and/or agitation

- Consider reversible cause e.g. constipation, pain, urinary retention.
- Explain what is happening to the patient and family.
- Lorazepam 0.5mg QDS sublingual/PO PRN or midazolam 2.5mg SC hourly PRN (depending on availability of oral route).
- If agitation persists, consider haloperidol 0.5–1mg SC PRN QDS. Caution for patients with Parkinson's Disease.
- If more than 3 doses of midazolam and/or haloperidol in 24 h, consider haloperidol 1.5–3 mg and midazolam 10mg/24 hours in a CSCI
- If agitation worsens despite initial measures, seek specialist palliative care advice.
- For patients with Parkinson's Disease please see: MILV11N10 Care at the end of life: Dying with Parkinson's disease.

Caution:

- Benzodiazepines can have increased cerebral sensitivity in ESKD, such that these patients are drowsy or have prolonged sedation with relatively low doses (e.g. 0.5 mg lorazepam or 2.5 mg midazolam).

Upper airway secretions

- Education: may be distressing for clinical staff, relatives and visitors.
- Reposition the patient.
- Fluid overload with pulmonary oedema may add to the respiratory symptoms; nevertheless, a trial of antimuscarinics is reasonable:
- Medical management: hyoscine butylbromide 20mg hourly PRN SC or 40 to 60mg over 24h in T34 syringe driver (maximum effective dose 120mg/24h).

Caution:

- Hyoscine butylbromide can make secretions thicker thus more difficult to clear, and cause dry mouth and urinary retention, even in patients who are oliguric.

Pruritus (itchy skin)

- Prescribe regular emollients (e.g. Epimax) advise to use liberally to keep skin moist.
- Trial aqueous cream with 1% menthol (only on adequately moisturised skin).
- Avoid excessive hot washes or allowing patient to overheat.
- Aim to keep nails short and clean to avoid excoriations and secondary infections.
- Antihistamines can be effective. Loratadine (10mg daily) or cetirizine (5–10 mg daily) cause less sedation than chlorphenamine (4mg daily, up to

3 times a day), although the sedating properties may be useful for nocturnal itch. Hydroxyzine may also be an effective alternative (25 mg nocte).
- Gabapentinoids (e.g. pregabalin at starting dose of 25 mg nocte) can improve pruritus but onset of benefit can be too slow for dying patients.

Dry Mouth

- Regular mouth care
- Saliva substitutes (e.g. Oralieve)
- Ice lollies, ice chips, gentle toothpastes.

Contacts for further advice:

Inpatient Palliative care team

- Inpatient referral via EPR: Under requests and prescribing search refer inpatient palliative care.
- Urgent queries: extension 21741
- Out of hours: on call palliative SpR via switch

Community Palliative Care Team:

Go to message centre on EPR > click pool > click Manage > search for 'consult community palliative care team' in the addressee box > click opt in > click Communicate > click Message > type '~R' in the main body of the message > select Palliative_care_referral from the auto-text > double click to access the Community Palliative Care Team referral form.

Summary of end-of-life medications

If oral route appropriate

Lorazepam 500 micrograms QDS PRN PO for **anxiety/agitation** (use orodispersble preparations for sublingual route, if unable to swallow tablets).

Haloperidol 0.5−1mg QDS PRN PO for **nausea/agitation/delirium.**

Oxycodone 1.25−2.5mg 4 hourly PRN PO for **pain/breathlessness**

Subcutaneous medications should be provided in anticipation of loss of the oral route

Midazolam 2.5mg hourly PRN SC **for agitation.**

Haloperidol 0.5−1mg QDS PRN SC **for nausea and/or delirium.**

Oxycodone 1.25−2.5mg 4 hourly PRN SC for **pain/breathlessness/cough**.

Hyoscine butylbromide 20mg hourly PRN SC for **respiratory secretions.**

Prepared by:

Dr Daniel Alderson, Dr Saskia Walker, Dr Victoria Hedges, Melinda Presland, Dr Joanne Skinner

With advice from:

OUH nephrologists, Dr Matt Carey and renal supportive care team.

Review date: *October 2028*

References

Palliative Care Formulary: https://www.medicinescomplete.com/#/

MedicinesComplete — Drug Compatibility Checker

Scottish palliative care guidelines: Renal disease in the last days of life

Watson M, Campbell R, Vallath N, Ward S, Wells J. Oxford Handbook of Palliative Care. 3rd Edition. Oxford University Press; 2019

ALFENTANIL via the subcutaneous route for symptom management of palliative and end of life care patients - V1.3 August 2023.pdf

Palliative Care Opioid Conversion Chart Opioid.indd