University Hospitals Birmingham NHS
NHS Foundation Trust

CONTROLLED DOCUMENT

Supportive Care Guidelines for Patients with End Stage Renal Disease

CATEGORY:	**Procedural Document**
CLASSIFICATION:	**Clinical**
PURPOSE	**To provide guidance in the management of patients with End Stage Renal Disease (ESRD)**
Controlled Document Number:	**CG080**
Version Number:	**2**
Controlled Document Sponsor:	**Associate Director of Nursing, Division B** **Medical Director, Division B**
Controlled Document Lead:	**Chronic Kidney Disease Community Support Team Leader**
Approved By:	**Clinical Guidelines Group**
On:	**June 2014**
Review Date:	**June 2017**
Distribution: • **Essential Reading for:** • **Information for:**	 **All practitioners within renal services at the Trust involved in the management of patients with End Stage Renal Disease.** **Other practitioners within the Trust and General Practitioners caring for patients with End Stage Renal Disease**

Foreword

These guidelines have been adapted for use by University Hospitals Birmingham NHS Trust and were originally written collaboratively by members of the Specialist Palliative Care Team and Renal Department of the University Hospitals of Coventry and Warwickshire (UHCW). Changes have been made to take into account local factors but the ethos and advice remain the same. We are greatly indebted to the team at UHCW for allowing us to use their work to help our own patients without having to "reinvent the wheel".

The guidelines are intended for patients with Chronic Kidney Disease Stage 5 (as defined by KDOQI, Kidney Disease Outcomes Quality Initiative) namely patients with End Stage Renal Disease, with a GFR* of less than 15 ml/min, who are approaching dialysis, receiving dialysis treatment, withdrawing from dialysis or being managed conservatively. Such a palliative approach may not be appropriate for patients who are being worked up for renal transplantation and therefore these guidelines may be less relevant for them.

These guidelines will also be relevant for patients with Chronic Kidney Disease Stage 4 with severely reduced renal function (GFR of 15-30 ml/min) progressing towards Stage 5, End Stage Renal Disease.

They may also be of some use when managing the symptoms of patients with earlier stages of Renal Failure depending on their individual clinical situations.

These guidelines are intended to be a brief accessible source of information for clinicians reviewing inpatients and outpatients. Any drugs suggested are those with the best evidence, national guideline approval or least problems in ESRD. Further information may be obtained from the references.

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Consultant in Renal Medicine
September 2010

Glomerular Filtration Rate (GFR) normally routinely supplied with creatinine results or may be obtained by typing in the patient's age, sex, ethnicity and creatinine level into an MDRD calculator e.g.* ***http://www.patient.co.uk/doctor/Estimated-Glomerular-Filtration-Rate-(GFR)-Calculator.htm* *Serum creatinine alone is not a good gauge of renal function.*

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Ia) General Management of Any Symptom of Renal Failure

For any symptom treat these contributing general reversible factors:

Common Contributing Factors	***General Advice***
Lack of understanding of disease; concerns or fears.	Explain/advise where to seek further help; provide patient information publications.
Dialysis may not be optimal.	Optimise dialysis (if applicable)
Diet, salt and fluid intake.	Good mouth care (Consider e.g. BioXtra). Ensure balanced nutritional input. See renal dietician. Daily salt intake <6g (100mmol). If fluid overload consider reducing fluids: taken orally and intravenously (IV) *(incl. fluids used to dilute IV drugs);* increasing diuretics; reducing dry weight for dialysis pts. Treat cardiac failure (see p16) If dehydrated consider increasing oral fluid intake; decreasing/stopping diuretics; increasing dry weight for dialysis patients.
Medication.	Reduce/change/stop contributing medication.
Electrolyte disturbance.	Reduce/change/ stop contributing medication. See renal dietician.
Anaemia.	Review for evidence of bleeding. Check Iron, B12, Folate. Optimise ESA (erythropoietin stimulating agent). Refer to Anaemia Team. Consider transfusion.
Co-existent problems, especially: ▪ Insomnia, anxiety, depression. ▪ Infections. ▪ Diabetes. ▪ Hypo- or hypertension. ▪ Thyroid disease. ▪ Hypoxia from any cause. ▪ Reflux or gastritis. ▪ Ischaemia.	Treat appropriately. Consider referral to other appropriate specialists. See renal dietician if patient has diabetes/hypotension/hypertension. (Cardiac/peripheral/cerebral ischaemia can be worsened by anaemia)

Ib) <u>Specific</u> Management of Symptoms of Renal Failure

1. Pain[1-4] (including Cramps)	
Specific Contributing Factors	***Specific Advice***
Depends on cause; *(see examples of specific causes 1 to 4 listed below).*	**<u>Important to find out cause of pain</u>** in order to treat appropriately; ask about: character; location; radiation; relieving & exacerbating factors.
1) Bone pain.	Regular paracetamol, then follow World Health Organisation (WHO) Ladder *(see page 6)* ?Consider NSAID (if benefits of improving Quality of Life (QoL) outweigh risks of Gastorintestinal (GI) bleed and worsening renal function). ?Consider treatment (Rx) of hyperparathyroidism
2) Gastritis.	Proton Pump Inhibitor (PPI) (e.g. Omeprazole 20mg OD PO) or H2-Antagonist. (e.g. Ranitidine 150mg BD PO) and Antacid (e.g. Peptac) to treat gastritis (do not prescribe PPI & Antacid to be taken at same time).
3) Leg cramps.	Quinine Sulphate 200 - 300mg NOCTE PO.
4) Neuropathic pain (peripheral neuropathy).	Gabapentin ***(CAUTION**: dose depends on GFR; seek advice if unsure).* Amitriptyline 10 - 25mg NOCTE PO (NB Side effects: dry mouth, urinary retention, constipation, sedation, arrhythmias). Clonazepam 0.5 - 1.0mg NOCTE PO/SC
Patient unable to take oral analgesic medication as vomiting or moribund. *Contact the **Renal Pharmacist** or **Specialist Palliative Care Team** for advice with conversions or dose adjustments.*	Consider subcutaneous (SC) syringe driver containing opioid analgesia. *Morphine & Diamorphine are poorly tolerated in renal failure as metabolites accumulate causing myoclonic jerks, confusion, drowsiness & agitation.* Discuss with **Renal Team** or **Specialist Palliative Care Team** ?change to alternative opioid *(see p6).* Consider Psychological Support i.e. where there is an unexplained medical cause

WHO Ladder in ESRD
No opioid is completely safe in renal failure

NB Watch for signs of opioid accumulation:
myoclonic jerks,
confusion,
increased drowsiness & agitation.

Step One:

Regular
Paracetamol
1G QDS PO
if PRN
Paracetamol is not sufficient

Step Two:

Reg Paracetamol
+
Tramadol
50mg BD PO
(can give 100mg BD PO if GFR > 10)
Use codeine with caution as it and its 6-glucorninde metabolite are renally excreted and therefore may accumulate in mod/severe RI. Use in confines of a renal unit but not advisable outside.

Step Three:

Reg Paracetamol
+
Stop step 2 opioid (codeine/tramadol) and commence Step 3 opioid:

Morphine and Diamorphine may cause problems due to accumulation of potent metabolites in renal failure; if problems consider better tolerated opioid such as:

Buprenorphine, Hydromorphone, Fentanyl *(see below).*

(NB Extreme caution with Trans-dermal patches, see p8)

Patients not already on analgesia who have pain:
START ON STEP ONE and reassess daily moving up a step as necessary.

Patients already on analgesia who have pain:
Assess compliance and suitability of medication for that pain *(see p5).*
Increase analgesia by moving up a step as above and reassess daily*.

*NEVER prescribe an opioid you are not familiar with before consulting the **Renal Team** or **Specialist Palliative Care Team** for advice.

Trans-dermal Patches

MAY be suitable for patients if:

- **already tolerating regular opioids at equivalent dose to the patch.**

Fentanyl

If decision to start is made in opiate naive pts, always start at 12microg/hr fentanyl as there has been respiratory depression noted with the use of 25microg/hr patches.
eg Fentanyl 12 patch
(12 microg/hr apply every 72hrs)
is equivalent to approximately 45mg Morphine PO / 24hrs;

Trans-dermal Patches

DO NOT COMMENCE for patients if:

- **in acute pain or who have unstable pain; or who need frequent analgesia dose changes** as occurs when someone's analgesia requirements are being titrated up/down
  (because it takes at least 12 hrs for patches to begin to work and 72hrly patches only reach their full effect (steady state) 72 hrs after they have been applied; therefore frequent dose adjustments are not possible with patches).

eg Fentanyl 25 patch *(25 microg/hr apply every 72hrs)* *is equivalent to approximately* *90mg Morphine PO / 24hrs;* **Buprenorphine** is likely to be as safe as fentanyl as its metabolites of norbuprenorphine and the 3-glucornide are much less potent as analgesics, but impact on adverse effect profile is unknown (though small studies have not shown increased ADRs) ***NB Buprenorphine** (2 patch types):-* *BUTRANS lasts 7 days* *(eg 5 microg/hr apply every 7 days)* *is equivalent to approximately* *60mg Codeine PO/24hrs.* ***But*** *TRANSTEC lasts 4 days* *(35 microg/hr apply every 96 hrs)* *is equivalent to approximately* *60mg Morphine PO/24hrs.* • **stable pain controlled on regular opioids (not requiring frequent dose changes);** *as eg 72hrly patches take about 12 hrs to begin to work and only reach full effect (steady state) 72 hrs after they have been applied; also the drug effects continue for about 24 hrs after patch removal.*	**DO NOT COMMENCE** for patients if: • **moribund;** *(as they are peripherally shut down so absorption is unreliable).* • **suffering from sepsis;** *(as they are peripherally vasodilated, so absorption maybe increased).*

2. Confusion, Agitation and Restlessness[1;5]	
Specific Contributing Factors	***Specific Advice***
Medication (current or when withdrawing) causing confusion/agitation/restlessness: NB Anticholinergics, Anticonvulsants, Sedatives, Antidepressants, Opioids, Corticosteroids (taking dose after 5pm may lead to nocturnal agitation and insomnia, advise to take with lunch if possible). NB Steroid psychosis Also Alcohol, Caffeine and Cigarette use / withdrawal.	Reduce/change/stop any contributing medication.
Electrolyte disturbance.	*See section on General Management of Symptoms of Renal Failure on page 4.*
Anaemia.	
Dialysis may not be optimal.	
Co-existent problems, especially: ▪ Anxiety, Depression. ▪ Infections. ▪ Hypoxia from any cause. ▪ Cerebro-vascular disease.	
Restless legs (this is a common symptom in itself) *Exacerbated by:* ▪ Anaemia/Fe defic/Low ferritin. ▪ Hyperphosphataemia. Low PTH ▪ Pruritis. Peripheral neuropathy. ▪ Inadequate dialysis. ▪ Psychological factors. *Also precipitated by medication:* ▪ Tricyclic antidepressants. ▪ SSRIs. ▪ Lithium. ▪ Dopamine antagonists. ▪ Caffeine.	Restless legs can lead to poor sleep and daytime lethargy. Consider Clonazepam 0.5 – 1mg PO or SC NOCTE. *See also section on Management of Abnormal Blood Results on pages 22-26.*
Psychological distress.	Consider input from psychological support services and/or anxiety management strategies.

Specific Contributing Factors	***Specific Advice***
If patient is very distressed by confusion/agitation/restlessness or is a danger to themselves or others consider drug therapy.	Initially PRN:- If anxiety /agitation predominates; Lorazepam 0.5 - 1mg PO PRN/OD. If confusion/delirium predominates; Haloperidol 1 - 2.5mg PO/SC PRN/BD OR Risperidone 0.5mg NOCTE PO. If frequent doses of Haloperidol are required PRN/24hrs change to REGULAR Risperidone, ie: Risperidone 0.5mg PO OD (which can be increased to BD). NB These are appropriate doses for acute delirium; seek specialist advice from the Mental Health Team when managing a patient with a chronic Mental Health condition. If the patient is moribund consider; Initially PRN:- Eg Midazolam 1.25–2.5 mg SC PRN. If requiring Midazolam frequently prescribe syringe driver; Eg Midazolam 5mg over 24hrs in subcutaneous (SC) syringe driver. Can be increased to Midazolam 10mg over 24hrs SC in syringe driver after 24 hrs if no improvement, and then to Midazolam 20mg over 24hrs SC in syringe driver after 24 hrs if no improvement. Contact the Specialist Palliative Care Team for advice if needed.

3. Nausea and Vomiting[1;2;2;4;13]	
Specific Contributing Factors	***Specific Advice***
Elicit contributing cause(s) 1 – 3 below & treat as advised below:	
1) Gastric stasis; gastroparesis; delayed gastric emptying *(epigastric fullness, early satiety, regurgitation)* Occurs in ▪ Autonomic Neuropathy *(diabetic, renal),* ▪ Gastritis *(stress, medication),* ▪ Medication *(opioids, anticholinergics eg amitriptyline)*	Small amounts of food more often If occasionally nauseated prescribe PRN oral prokinetic: Eg Domperidone 10mg PO (TDS) *[which is better than Metoclopramide 10mg PO PRN (TDS) as increased risk of Extrapyramidal SEs in ESRD]* If frequently or continuously nauseated then prescribe regular oral prokinetic PRE-MEALS: Eg Domperidone 10mg PO TDS *[better than Metoclopramide with increased risk of Extrapyramidal SEs].* For Gastritis or GastroOesoph reflux: Consider Proton Pump Inhibitor (eg Lansoprazole 15mg OD PO) or H2-Antagonist (eg Ranitidine 75 – 150mg BD PO) and Antacid (eg Peptac) *(Do not prescribe PPI and Antacid to be taken together).*
2) Metabolic upset: ▪ Uraemia ▪ Sepsis ▪ Hypercalcaemia ▪ Medication *(many eg antibiotics, opioids, SSRIs)* *NB Tolerance may develop to opioid-induced nausea & vomiting when commencing opioid or increasing dose (so anti-emetics may only be needed for few days)*	If occasionally nauseated prescribe PRN oral drug therapy: Eg Haloperidol 1.5mg NOCTE PO PRN (OD) If frequently or continuously nauseated then prescribe regular oral drug therapy: Eg Haloperidol 1.5mg NOCTE PO or Ondansetron 8mg BD PO for 3 day trial: discontinue if no benefit *(NB side effect is constipation).*
3) GI or GU irritation: **Stimulation of stretch receptors of GI or GU tract as in constipation and ureteric obstruction.** **Avoid Cyclizine in ESRD (risk of hypotension and tachyarrhythmias).**	If occasionally nauseated prescribe PRN drug therapy: Eg Levomepromazine 6.25mg NOCTE SC PRN (OD) (Oral dosing difficult as tablet=25mg=sedating). If frequently or continuously nauseated then prescribe regular drug therapy: Eg Levomepromazine 6.25mg NOCTE SC (OD).

Specific Contributing Factors	*Specific Advice*
Dialysis may not be optimal.	See section on General Management of Symptoms of Renal Failure on page 4. See renal dietician.
Diet, salt and fluid intake.	
Electrolyte disturbance.	
Poor GI absorption of drug therapy.	If remains nauseated on maximum dose of regular oral drug therapy or is vomiting, or becomes moribund consider subcutaneous (SC) syringe driver: choose appropriate drug for cause of nausea and vomiting as above… For Metabolic upset: Eg Haloperidol 2.5mg over 24hrs SC in syringe driver; Can be increased to Haloperidol 5mg over 24hrs SC in syringe driver if no improvement after 24 hrs; OR Ondansetron 16mg over 24hrs SC in syringe driver (NB side effect is constipation). For GI or GU irritation: Eg Levomepromazine 6.25mg NOCTE SC (OD).
Psychological factors	Consider whether there are any psychological factors contributing to or impacting on this.
If above fails consider combination therapy OR Levomepromazine 6.25mg NOCTE SC or 6.25mg/24h in subcutaneous syringe driver and contact the **Specialist Palliative Care Team** for advice if needed.	

4. Loss of Appetite[1;1;5]	
Specific Contributing Factors	***Specific Advice***
Poor Mouth Condition.	If oral thrush – Treat *(eg Nystatin 1ml = 100000 units QDS PO).* If dry mouth – Try ice, chewing gum, regular mouth care *(eg Gelclair, OBalance Gel or BioXtra QDS PO).*
Nausea.	*See section 3 on Management of Nausea and Vomiting on p10.*
Gastro-oesophageal reflux; Gastritis; *(If gastric stasis/delayed gastric emptying – consider trial of oral prokinetic eg Metoclopramide 10mg PO TDS PRE-MEALS)*	Consider Proton Pump Inhibitor (eg Lansoprazole 15mg OD PO) or H2-Antagonist (eg Ranitidine 150mg BD PO) and Antacid (eg Peptac) to treat gastritis *(do not prescribe PPI and Antacid to be taken together).*
Medication: Any drugs causing dry mouth / nausea. Also Alcohol use.	Reduce / change / stop contributing medication.
Lack of desire or imagination to eat foods on renal diet.	See renal dietician. Smaller attractively presented meals more frequently and whenever the patient fancies anything.
Lack of exercise	Try to increase exercise levels
Anaemia.	*See section on General Management of Symptoms of Renal Failure on p4.*
Constipation	If constipation – increase dietary fibre; if stools hard prescribe softener *(eg Docusate Sodium 100mg – 200mg BD PO).* if stools soft prescribe stimulant *(eg Senna 2 - 4 tabs nocte PO).*
Dialysis may not be optimal.	Optimise dialysis (if applicable).
If appetite stimulant required for QOL… *(NB Unlicensed use; Short term only as Steroid Side Effects)*	Consider one week trial of Dexamethasone 4mg OD PO *(NB 1mg Dexamethasone is equivalent to ~ 7.5mg Prednisolone)* Or Megestrol Acetate 160mg OD PO.
Psychological factors	Consider whether there are any psychological factors contributing to or impacting on this and consider referral for psychological support.

5. Breathlessness[1;2]	
Specific Contributing Factors	***Specific Advice***
Anaemia.	*See section on General Management of Symptoms of Renal Failure on p4.*
Dialysis may not be optimal.	
High salt and fluid intake.	
Acidosis (Bicarbonate level).	*See p24 for management of acidosis.*
Medication: NB Calcium Antagonists, Beta-blockers, Corticosteroids, NSAIDs.	Reduce / change / stop contributing medication.
Co-existent disease:	*Management of coexistent disease:*
Asthma and COPD *(Should not be on a Beta-blocker)*	Bronchodilators. Oxygen (humidified) Corticosteroids.
Respiratory Infection.	Appropriate antibiotics *(?sputum)* Bronchodilators. Oxygen (humidified).
Cardiac failure	Salt and fluid restriction (see p4). Treatment of anaemia & arrhythmias. Consider: Diuretics *(if passing urine)*; ACE inhibitor or Angiotensin II inhibitor *(not in renovascular disease)*; Nitrate; Betablockers; Spironolactone; (see pages 22-23).
Pleural effusion	Elicit cause; Consider Diuretics; Consider aspiration.
Pulmonary Embolus	Anticoagulate if appropriate.
Mouth breathing when breathless.	Dry mouth may be as distressing as the breathlessness – Ensure regular mouth care with sips of water or moistened mouth swabs[7].
Rapid respiratory rate (from whatever cause of breathlessness).	Ensure patient sits upright to increase vital capacity, suggest using fan, relaxation techniques, breathing exercises (consider involving physiotherapist). Also possibly consider psychological intervention.

Specific Contributing Factors	***Specific Advice***
Retained upper airway secretions in a dying patient (with a prognosis of days at the most) *Avoid Hyoscine Hydrobromide in ESRD (risk of excessive drowsiness or paradoxical agitation).*	If patient **moribund** consider subcutaneous (SC) **syringe driver** to reduce retained upper respiratory tract secretions: Glycopyrronium 0.6 – 1.8mg over 24 hours SC in syringe driver or Eg Hyoscine Butylbromide 80mg over 24 hours SC in syringe driver; with PRN Hyoscine Butylbromide 20mg SC, to Total Daily Dose of 120mg over 24hrs.
If necessary: after addressing all of the above if breathlessness still problematic & patient is very distressed consider drug therapy to improve QOL…	Beware of respiratory depression: Try PRN Lorazepam 0.5mg PO/SL (OD) or Midazolam 1.25mg – 2.5mg SC PRN. *Morphine is used to relieve breathlessness in patients after addressing all of the above when breathlessness is still problematic & the patient is very distressed, but as* ***Morphine metabolites accumulate in chronic usage in patients with end stage renal disease and in patients on dialysis an alternative opioid may be better tolerated*** *(see p6); signs of opioid accumulation are myoclonic jerks, confusion, increased drowsiness & agitation.* Contact the **Renal Pharmacist** or **Specialist Palliative Care Team** for advice if needed.

6. Oedema	
Specific Contributing Factors	***Specific Advice***
Anaemia.	*See section on General Management of Symptoms of Renal Failure on page 4*
Dialysis may not be optimal.	
Diet, salt and fluid intake.	
Electrolyte disturbance.	
Medication: NB Calcium antagonists, Corticosteroids, NSAIDs, Vasodilators such as Minoxidil	
Cardiac failure	*See page 13 for the Management of Cardiac Failure in End Stage Renal Disease.*
Immobility.	Try to include some gentle exercise in daily routine and increase as tolerated. Consider raising ankles above hip level when sitting & sleep with foot of bed raised.

7. Itching[2;5;7]	
Specific Contributing Factors	***Specific Advice***
Anything which dries or irritates skin; eg soap, synthetic clothing.	Keep nails short and avoid very hot water when washing. Discontinue soap. Use emollients such as Aqueous Cream. Lanolin may make itching worse and long term use causes sensitisation.Another alternative is Diprobase, a paraffin based emollient. A better but more expensive option, is Unguentem Merck – an amphiphilic substance. Wear cotton clothes and use cotton bed linen. Consider a more hypoallergenic detergent/dishwashing solution.
Anaemia/Fe defic/Low ferritin Dialysis may not be optimal.	*See section on General Management of Symptoms of Renal Failure on page 4.*
Co-existent skin problems : (eg dry skin, calcium/phosphate deposition in skin, eczema, psoriasis, allergic reactions, infection, infestation eg scabies).	Treat appropriately. Topical treatment: (keep topical agents cool in fridge): Eg Aqueous cream +/- 1 - 2% menthol[7] Eg Eurax cream Eg Oily calamine lotion. Oral antihistamine may be tried (but there is little evidence of benefit, although sedative effect beneficial at night). Consider referral to Dermatologist *(patient may benefit from UVB therapy).*
Co-existent medical problems (eg secondary hyperparathyroidism, hyperphosphataemia, liver disease).	Treat appropriately. *See page 25 for management of Phosphate level.*
Psychological factors	Consider psychological assessment/intervention alongside medical intervention e.g. could it be anxiety-related?

Specific Contributing Factors	***Specific Advice***
If necessary: after addressing all of the above if itching is still problematic & patient is very distressed consider drug therapy to improve QOL.	Consider *(unlicensed use)*[8;9]: Ondansetron 2 – 8mg BD PO (NB Side Effect is Constipation) OR Mirtazepine 15mg NOCTE PO *(both found to be effective in uraemia)*

8. Lethargy[5]	
Specific Contributing Factors	***Specific Advice***
Anaemia (Iron deficient).	*See section on General Management of Symptoms of Renal Failure on page 4 and Management of abnormal blood results on pages 22-26.*
Electrolyte disturbance.	
Poor nutrition.	See renal dietician
Dialysis may not be optimal.	Optimise dialysis (if applicable).
Medication: NB Antihypertensives, Hypoglycaemics, Diuretics, Corticosteroids, Opioids, Any medication which causes drowsiness. Also Alcohol use.	Reduce/change/ stop contributing medication. Commencing or increasing opioids may cause excessive drowsiness, but tolerance may develop after a few days; if there is no improvement try reducing the dose or contact the **Specialist Palliative Care Team** for advice.
Hypotension or postural hypotension.	Treat appropriately. Reduce / change / stop contributing medication. If dehydrated consider increasing oral fluid intake; decreasing/stopping diuretics; ; increasing dry weight for dialysis patients.
Insomnia and Depression.	Treat appropriately. Consider Psychological Intervention, Anxiolytic or Antidepressant therapy
Inactivity.	Try to include some gentle exercise in daily routine and increase as tolerated.
Expectations too high.	Patients should pace themselves & conserve energy for most important tasks of day (or week). Help patients to have realistic goals.

9. Myoclonus and Fits[1;2]	
Specific Contributing Factors	***Specific Advice***
Medication: **Myoclonic jerks are almost specific to accumulation of morphine or other opioid*.** Otherwise may be treatment with or withdrawal from: anticonvulsants, antipsychotics, antidepressants, sedatives, anticholinergics. Also Alcohol use.	Stop morphine or diamorphine and use alternative analgesic. *(See section on Pain on p5).*
Electrolyte disturbance.	*See section on General Management of Symptoms of Renal Failure on p4.*
If necessary after addressing all of the above…	Consider regular oral anti-epileptic medication. Prescribe PRN medication to use in the event of prolonged/multiple fits; (Eg Diazepam 5-10mg PR or with resuscitation facilities present: Lorazepam 2mg/minute IV max 4mg *NB Availability of Lorazepam may be currently limited due to ongoing manufacturing problems).Lorazepam must be stored in a fridge.*
Patient is unable to take oral medication or is **moribund**.	Consider subcutaneous (SC) **syringe driver** to prevent fitting Eg Midazolam 5mg over 24hrs in SC syringe driver Can be increased to Midazolam 10mg over 24hrs in SC syringe driver if no improvement, and then to Midazolam 20mg over 24hrs in SC syringe driver if no improvement; contact the **Specialist Palliative Care Team** for advice if needed.

**Personal communication, E J Chambers Nov 05*

10. Insomnia[1;5]	
Specific Contributing Factors	***Specific Advice***
Other symptoms keeping patient awake *(especially Pain, Cramps, Restless Legs, Anxiety & Depression).*	Treat appropriately, including psychological intervention.
Poor sleep hygiene *(eg inactive during day,* *daytime naps,* *caffeine late at night etc).*	Try to include some gentle exercise in daily routine and increase as tolerated. Try to encourage patients to keep their mind active. Avoid sleeping in the day. Limit caffeine *(esp after lunchtime).* No alcoholic drinks late at night. Try hot drink or warm bath at night. Relaxation techniques (eg breathing exercises, ?yoga)
Medication: NB Sedatives, Antihistamines, Antidepressants, Corticosteroids *(taking dose in the morning may avoid insomnia at night).* Also Alcohol use.	Reduce / change / stop contributing medication.
If necessary after addressing all of the above…	Consider sleeping tablet, eg Zolpidem 5 – 10mg NOCTE PO or Zopiclone 3.75 –7.5mg NOCTE PO

11. Loss of Libido and Impotence[6]	
Specific Contributing Factors	***Specific Advice***
Psychological; Fatigue, Body Image concerns, Anxiety and Depression.	Treat appropriately. Consider referral for psychological assessment and intervention and/or possibly psychosexual therapy alongside medical intervention
Other physical problems leading to difficulty performing sexual act (eg Breathlessness, Lethargy, Pain).	Treat appropriately.
Hormone changes: Hypothalamic-pituitary axis abnormalities. Hyperprolactinaemia.	Explanation. *See below for Males & Females.* Consider dopamine agonist to reduce prolactin level or referral to Endocrinologist.
Autonomic nervous system changes.	Explanation.
Co-existing vascular disease.	Optimise dialysis (if applicable). Adequate control of BP, lipids, phosphate, Diabetes.
Medication: NB Beta Blockers, Thiazides, Antidepressants, Carbamazepine, Cimetidine, Hormone antagonists, Opioids, Antipsychotics. Also Alcohol use.	Reduce/change/stop contributing medication.
Anaemia.	ESA have been shown to improve quality of life and well-being, sexual desire, performance and erectile function with correction of anaemia and some improvement in abnormal hormone levels. *See section on General Management of Symptoms of Renal Failure on p4.*

Specific Contributing Factors	***Specific Advice***
In Males: Hormone changes: Low level of testosterone. High level of (less active) luteinising hormone (LH). High level of follicle stimulating hormone (FSH).	In Males: Consider checking hormone levels (testosterone, LH, FSH & Prolactin) with a view to prescribing hormone replacement therapy (testosterone). If erectile dysfunction and no contraindication consider prescribing medication (eg Sildenafil 25mg = Viagra) or suggest patient sees member of Urology team for advice on injections or specific aids.
In Females: Pre-menopausal hormone changes: Similar baseline oestrogen, progesterone & FSH levels during follicular phase as in normal women; higher follicular LH surge in women with renal failure but lower than mid-cycle LH surge in normal women. Lack of normal increase in LH and FSH in response to oestrogen. Post-menopausal hormone changes: Elevated LH & FSH.	In Females: Consider checking hormone levels (oestrogen, LH, FSH & prolactin) with a view to prescribing hormone replacement therapy (oestrogen +/- progesterone). Consider topical lubricant or oestrogen cream if atrophic vaginitis.

II) General Management of Abnormal

- **Clinical Measurements and**
- **Blood Results**

Only check these if knowing the values will cause you to intervene and change the clinical management

BUT patients may be conservatively managed for some years on the 'Supportive Care' Pathway and will need to be appropriately monitored; especially in terms of managing

1. Anaemia
2. Acid-Base balance
3. Renal Bone Disease

When is it necessary to intervene?…

1 Renal function is deteriorating and measures can be taken to stop, slow or reverse this progression.
2 The patient is symptomatic & intervening will help alleviate symptoms.
3 The patient is willing to have the necessary interventions.

How to intervene:

Clinical Measurement	TOO HIGH	TOO LOW
Fluid balance	Assess fluid balance: if positive - Reduce fluids & increase diuretics. *(eg Frusemide 20mg – 500mg / 24hrs; If no response consider adding Bendroflumethiazide 2.5mg od starting dose upto 10mg od).* Identify fluid restriction based on 24 hour urine output: 500mls + previous day's fluid output. Refer to dietitian if patient remains persistently fluid overloaded.	Assess fluid balance: if negative - Increase fluid intake and reduce diuretics where possible. Consider psychological support (behavioural and/or motivational interventions) if appropriate.

Clinical Measurement	TOO HIGH	TOO LOW
BP *(ideal: lowest tolerated BP aiming for target < 130/80)*	See renal dietician (re dietary salt intake) Assess fluid balance: if positive - Reduce fluids & increase diuretics (as above). Also start or increase other antihypertensive medication if needed: (*Betablockers:* Atenolol 25 mg od to 100mg od. *Alpha-blockers:* Doxazosin 1 to 16mg /24hrs. *Calcium antagonists:* Amlodipine 5 mg od to 10 mg od. *ACE Inhibitors:* Lisinopril 2.5mg to 20 mg/ 24hrs. *(Monitor K^+ level).* *Angiotensin II antagonists:* Losartan 25 mg od to 100 mg od). *(Monitor K^+ level).*	Assess fluid balance: if negative - Increase fluid intake and reduce diuretics where possible. Also reduce or stop other antihypertensive medication if necessary.

Blood Result	TOO HIGH	TOO LOW
Haemoglobin *(Should be > 11; normal is 10-12g/dL)*	Review if patient dehydrated. Reduce EPO dose.	Review current medication. Maximise EPO. Consider Iron therapy or Transfusion.
Sodium *(134 – 146)*	Assess fluid balance. Review current medication.	Assess fluid balance. Review current medication.

Blood Result	TOO HIGH	TOO LOW
Potassium *(<5.5mmol/l)*	Review current medication: Stop or reduce potassium-retaining drugs, *(eg ACE Inhibitors; Angiotensin-II Inhibitors; Spironolactone; Amiloride).* *Correct bicarbonate levels if low.* Refer to the renal Dietitian if the above have been addressed and K levels remain at the upper limit or > 5.5mmol. Provide acute treatment depending on clinical situation, considering patient's prognosis & wishes, in discussion with MDT: Salbutamol Nebules; Calcium Resonium PO; Insulin/Dextrose IV. *(It would be unusual to continue Calcium Resonium; this* **needs to stop once potassium reaches 5mmol/L as GI binding continues to reduce levels down to approx 4.5mmol/L for 24hours after stopping**	Review current medication: NB Occurs with high dose loop diuretics & Bicarbonate. Consider cautious use of potassium supplements & review every 3 days. Relax dietary potassium restrictions if following these. Refer to renal dietitian if potassium levels remain persistently low.
Bicarbonate (should be normal: 22 – 29)	Alkalosis Review current medication: Reduce bicarbonate supplements. Phone Renal Pharmacist or Renal Team for advice.	Acidosis Review current medication: Commence or increase bicarbonate supplements. Phone Renal Pharmacist or Renal Team for advice.

Blood Result	TOO HIGH	TOO LOW
Calcium *(Adjusted calcium 2.1-2.6mmol/l (Renal Association, 2010)*	Review current medication: Stop or reduce calcium supplements.	Review current medication: (If Ca <2.4 and Phos <1.4 and PTH levels are persistently above normal range (normal range - 1.6-6.9pmol) consider starting Alfacalcidol 0.25mg od. Increase alfacalcidol dose based on Cca PTH and PO4 levels. If Ca <2.4 and Phos >1.4 start or increase calcium based phosphate binder.
Phosphate *(should be <1.5 mmol/l) (Renal Association 2010)* *Likely to cause problems only in the long-term. Tablets often difficult to swallow and may have negative impact on QoL.. If prognosis poor discuss with renal team before treating.*	Review current medication. Commence or increase phosphate binder. (If Phos >1.4 and Ca <2.4 start Calcium acetate 1 with each meal. If Ca >2.4 or struggling to swallow, consider an alternative formulation of binder (e.g chewable, caplet, powder) or start alternative binder. Contact pharmacist team for further advice Refer to renal Dietitian.	Review current medication. Stop or reduce phosphate binder. Refer to renal Dietitian.
PTH (1.6-6.9pmol-normal range)	Treatment should be considered in patients whom serum PTH levels are progressively increasing and remain persistently higher than the upper reference limit for the assay (6.9pmol) despite correction of modifiable factors.	Review current medication. Consider stopping alfacalcidol. Consider prescribing a non-calcium-based binder, either instead of, or as well as, the calcium-based binder that the patient may already be taking.

Blood Result	TOO HIGH	TOO LOW
Albumin *(34 – 51) (QEHB labs)*	-	Consider cause eg: Nephrotic Syndrome; Fluid Overload; Infection; Poor nutrition: Refer to renal Dietitian if low albumin levels are associated with weight loss and/or poor appetite and dietary intake.
Glucose (diabetic patients)	Check for precipitant: eg infection, medications. Review current medication. See renal dietician.	Review current medication. Stop or reduce hypoglycaemic medication. See renal dietician.

Arrange repeat blood test(s) in an appropriate period of time

III) Psychological Management

a) Insight

1 Assess patient's understanding of disease = vital for Informed Consent; Elicit patient's concerns.

2 Clarify any misconceptions and medical terminology.

3 Ask if they would like further information about their disease or prognosis *(express prognosis in terms of "days/weeks/months/year(s)" as appropriate for this patient)*

b) Coping strategies

1 Assess the patient's mood during the consultation and their level of distress.

2 Ask if they feel depressed or anxious: If yes: assess coping strategies:
Positive strategies include talking to family and friends, support from their clinical team (renal & primary care), distraction and relaxation techniques, engaging in hobbies, etc.
Negative strategies include avoiding or denying issues if doing so detrimentally effects their care, and addictive behaviours such as smoking or drinking excess alcohol)

3 Consider performing a formal assessment of mood if the patient agrees and if this would help the patient or aid their management.*(eg HADS - Hospital Anxiety and Depression Scale*). Assess for any suicidal risk (thoughts, intent, plan). If necessary, consider possible referral to mental

health services or Rapid Access, Interface and Discharge (RAID) Service if an inpatient at QEHB

4 If depressed or anxious and you feel they might benefit ask the patient whether they would like additional help from
- counselling *(access community services by discussion with GP)*
- clinical or counselling psychologist
- medication (ie antidepressant or anxiolytic).

c) Hopes and Fears

1 Try to maintain HOPE: Ask what patient hopes for from treatment but try to ensure they remain realistic *(?suggest more realistic goals).*

2 Explore what patient fears most and allay fears as far as possible. It is important to acknowledge the patient's distress and feelings before moving on to discussing treatment options.

3 Acknowledge the patient's feelings and then explain that even when an illness is terminal and there is only a short time left to live there are many medical and non-medical treatments to improve symptoms, relieve suffering and maintain quality of life; additionally provide useful telephone contact numbers for support.

4 Consider referring patients with complex psychological issues to the clinical psychologist.

IV) Achieving Spiritual Goals (# see footnote)

Personal, Cultural and Religious issues

1 Ask what the patient hopes to be able to achieve personally in the future and help ensure this is realistic *(suggest a more realistic aim if need be).*

2 Explore possible language barriers

3 Explore how the patient's culture will influence the way he/she wishes to be treated.

4 Ask whether the patient has any particular requirements due to their cultural and/or religious beliefs.

5 Offer the services of the chaplain or other faith representative.

V) Achieving Social Goals (# see footnote)

Home, Work, Financial & Recreation

1 Ask how the patient's role has changed:
- At home *(including relationships and sexual health if appropriate).*
- At work *(including financial difficulties if unable to work).*

- Recreationally.

2 Explore any concerns or problems.

3 Advise on ways to help maintain their sense of purpose.

4 Suggest contacts for further help and support *(eg Social Services, Renal Social Worker [for renal hospital in- & outpatients], primary care team [District Nurses, GP], patient support groups, patient information booklets and books, internet groups).*

 # NB If patient cannot express themselves clearly, assess Mental Capacity as per the Mental Capacity Act 2005, enquire whether patient has a Lasting Power of Attorney, ask the relatives about the patient's wishes previously; ascertain whether patient has a valid Advance Decision to Refuse Treatment (previously 'Advance Directive' or 'Living Will')

VI) Advance Care Planning

NB If patient cannot express themselves clearly, assess Mental Capacity as per the Mental Capacity Act 2005, enquire whether patient has a Lasting Power of Attorney, ask the relatives about the patient's wishes previously; ascertain whether patient has a valid Advance Decision to Refuse Treatment (previously 'Advance Directive' or 'Living Will')

1 When it is recognised that the patient's conditioning is worsening, and in order to ensure effective advance care planning, the patient should be placed on the GP Practice Palliative Care/Gold Standards Framework Register. GPs should make the out of hours GP/ambulance service aware of the patient's status.

2 Explore and document how interventional the patient would like the team to be as their condition worsens and the circumstances when they may or may not wish the following to be considered:

eg Use of Antibiotics.

Tube feeding.

Dialysis.

Mechanical ventilation or Cardiopulmonary Resuscitation.

3 Explore and document the patient's wishes about death and dying and how and where they hope to be managed when the time comes:

eg Request to die at **Home**:

*(ensure that the District Nurses and GP are supported; consider: OT and Physio assessment; referral to Intermediate Care Services; referral to the **Community Specialist Palliative Care Team**.*

Ensure patient and family have contingencies and support for the final hours of life to avoid calling on emergency services);

eg Request to be able to die at **Hospital**:

(ensure that the patient and family know how to request admission to the renal ward; ensure that hospital team are aware of request)

eg Request to be able to die at a N**ursing Home**:

*(ensure that the patient and family liaise with Social Services to find appropriate place; ensure the staff there and GP are supported; consider referral to the **Community Specialist Palliative Care Team**.*

eg Request to be able to die in the **Hospice**:

*(**Renal Dr/CNS** or **Hospital/Community Specialist Palliative Care Team** may refer for admission to hospice at the appropriate time).*

VII) Terminal Care

The following recommendations are a GUIDE to treating patients whom the whole team (multidisciplinary clinical team, family and patient if alert) agree are in their last few days of life.

Recognising dying patients: ('The 4 Ds')

Dependence increasing
Dialysis Difficult
Declining food/drink/medications/care
Disease progressing (recurrent infections; worsening peripheral vascular disease with complications; calciphylaxis; symptoms becoming harder to treat)

1 Ensure patient and family have had a discussion with the renal team so that everyone is now aware that the focus of care is comfort and not prolongation of life.

2 Ensure preferred place of care has been discussed and documented*.*
NB Cultural/Spiritual/Religious needs.
(See Section VI Advance Care Planning p28).

3 Discontinue all unnecessary interventions (eg blood tests, routine observations eg Pulse, BP, O_2 sats, reposition for comfort only).

4 Discontinue all unnecessary medications so that only those for comfort are prescribed.

5 Even if a patient is asymptomatic ensure PRN palliative medication is prescribed by a suitable route (as patient unlikely to be able to swallow as they deteriorate) and that there are stocks available if they are needed urgently:

ALWAYS PRESCRIBE PRN medication for the 4 anticipated symptoms 'PSSS' below via suitable route (eg SC) in case of:

- **P**AIN.
- **S**ICKNESS (nausea and vomiting).
- **S**EDATION (terminal restlessness/agitation/fits).
- **S**ECRETIONS (breathlessness/retained resp tract secretions).

(See relevant sections for drug and dose recommendations).
*Contact the **Specialist Palliative Care Team** for advice & support if required.*

Reference List

1. The Renal Drug Handbook. Radcliffe Medical Press, 2004.

2. Brody H, Campbell ML, Faber-Langendoen KF. Withdrawing Intensive Life-Sustaining Treatment - Recommendations for Compassionate Clinical Management. *The New England Journal of Medicine* 1997; 336:652-7.

3. Kurella M, Bennett WM, Chertow GM. Analgesia in Patients with ESRD: A review of Available Evidence. *American Journal of Kidney Diseases* 2003;42:217-28.

4. Ferro C, Chambers J, Davison S N. Management of pain in renal failure. In Chambers EJ, Germain M, Brown E, eds. *Supportive Care for the Renal Patient*, pp 105-53. Oxford University Press, 2004.

5. Germain M, McCarthy S. Symptoms of Renal Disease: dialysis related symptoms. In Chambers EJ, Germain M, Brown E, eds. *Supportive Care for the Renal Patient*, pp 75-94. Oxford University Press, 2004.

6. Shirani S, Finkelstein F O. Sexual dysfunction in patients with chronic kidney disease. In Chambers EJ, Germain M, Brown E, eds. *Supportive Care for the Renal Patient*, pp 177-89. Oxford University Press, 2004.

7. DeVelasco R,.Dinwiddie LC. Management of the Patient with ESRD After Withdrawal from Dialysis. *ANNA (American Nephrology Nurses' Association) Journal* 1998;25:611-4.

8. Balaskas EV, Bamihas GI, Karamouzis M, Voyiatzis G, Tourkantonis A. Histamine and Serotonin in uremic pruritis: effect of ondansetron in CAPD-pruritic patients. *Nephron* 1998;78:395-402.

9. Dr Robert Twycross, Sobell Study Centre Oxford International Centre for Palliative Care. Advanced Course of Pain and Symptom Management. 13-6-2002. Ref Type: Conference Proceeding

10. Brown E, Chambers EJ, Eggeling C, eds. *End of Life Care in Nephrology: From Advanced Disease to Bereavement.* Oxford Specialist Handbooks. Oxford University Press, 2007

11. Murtagh FEM, Addington-Hall JM, Donohoe P, Higginson IJ. Symptom Management in patients with established renal failure managed without dialysis. *EDTNA/ERCA Journal* 2006; XXXII2: 93-98.

12. Liverpool Marie Curie Palliative Care Institute endorsed by Dept of Health, Renal Association, British Renal Society. Liverpool Care Pathway for the Dying Patient (LCP), National LCP Renal Steering Group: Guidelines for LCP Drug Prescribing in Advanced Chronic Kidney Disease (eGFR<30ml/min). June 2008

13. Douglas C, Murtagh FEM, Chambers EJ, Howse M, Ellershaw J. Symptom management for the adult patient dying with advanced chronic kidney disease: A review of the literature and development of evidence-based guidelines by a United Kingdom Expert Consesnus Group, *Palliative Medicine* 2009; 23: 103-110

Acknowledgements

Many thanks to the very many contributors for their input during the compilation and adaptation of these guidelines.

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