Opioid choice and switching

Dr Dida Cornish

St Peter’s Hospice, Feb 18
Learning outcomes

• Be confident in opioid titration
• Recognise opioid toxicity
• Understand when to switch and when to reduce the dose
• Look for reversible causes
• Understand opioid choices in renal failure
Case

Mrs P is a 62 year old lady with non-small cell lung cancer diagnosed last year. She had locally advanced disease at diagnosis. Earlier this year she was diagnosed with liver and bone metastases and is now for best supportive care.

Current medication is morphine sulphate MR 40mg bd, oral morphine solution 10mg prn, naproxen 500mg bd, paracetamol 1g qds. Laxido 1 daily.

Arm and leg pain. You determine Mrs P has been using oral morphine solution 10mg at least 4 times in 24h, which reduces her pain score from 8 to 4/10.
Case

• What changes to her medications do you suggest today?
• What advice about these changes do you need to consider?
General approach to opioid titration

Start by calculating total oral morphine requirements in 24h
Divide by 2 to calculate MR dose
Divide by 6 to calculate IR dose
General approach to opioid titration

Calculate total daily oral morphine

Morphine sulphate MR 40mg bd = 80mg
Oral morphine solution 4x10mg = 40mg
Total oral morphine in 24h = 120mg

So, prescribe

120/2 = Morphine sulphate MR 60mg bd
120/6 = Oral morphine solution 20mg PRN for breakthrough pain
Case

• What advice about these changes do you need to consider?

*If time, consider PRN timing interval, generic v trade name, counselling re driving, fears re opioids e.g. addiction/ hastening death etc.*

*Advise Mrs P to record PRN doses and arrange review date*
Opioids – ICE

When starting an opioid, think about the reassurance you will need to provide and how you will cover this and provide adequate safety nets (all in the context of a 10 minute consultation).

Patients worry about

• the “meaning” – that they are dying
• addiction – not a clinical problem when used for pain appropriately but a big worry
• being drowsy and out of it – this should not happen and if it does we need to know and act
• driving

Patient info leaflet available at http://www.patient.co.uk/health/strong-painkillers-opioids

www.stpetershospice.org
General approach to opioid prescribing

Morphine is the first choice opioid

Prescribe in mgs

Two strengths of oral morphine solution: 10mg/5mls and 100mg/5mls

To give a prescribed dose of 5mgs, the patient needs to be advised to take 2.5mls of 10mg/5mls

Consider how to prescribe generic (with brand name)

e.g. Oxycodone MR (OxyContin), Oxycodone IR (OxyNorm)

Short acting morphine tends to last for 4 hours

normally tell the patient they can take it 2-4 hourly but to contact the doctor if needing more than 3-4 doses/day. Can repeat one dose after 1 hour.
Case

Mrs P returns in a week. Her arm and leg pain are still problematic. She has an oncology appointment tomorrow and her CNS has already written to the team to ask whether radiotherapy might help her bone pains. The prn oral morphine solution does help the pain but lasts 2 hours and makes her feel drowsy. She has been feeling more tired, has been nodding off more often in the day and is having trouble completing the crossword. She has also spilt 3 drinks when her arms “jumped”.

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Case

What is your differential diagnosis?
What investigations will you arrange?
What do you do with her analgesia today?
Case

What is your differential diagnosis?

What investigations will you arrange?

What do you do with her analgesia today?

Consider stopping NSAID, pending blood results

Switch morphine to oxycodone

Could consider dose reduction if very concerned about toxicity +/- using only PRN for 24h

Driving advice

Refer to hospice for Community support

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General approach to opioid switching

Calculate total daily oral morphine

Morphine sulphate MR 60mg bd = 120mg

Conversion ratio oral morphine: oral oxycodone is 2:1

So,

120/2 = oral oxycodone in 24h = 60mg
60/2 = Oxycodone MR 30mg bd
60/6 = Oxycodone IR 10mg PRN
Opioid side effects

Opioids have SIDE EFFECTS which we have to accept and manage

Constipation

Transient nausea

Transient drowsiness

We manage these with concurrent laxatives and anti-emetics. A good explanation when starting opioids is important.
Opioid toxicity

Opioid toxicity is not side effects. It means that either the dose or the drug is wrong:

- Vivid dreams
- Hallucinations
- Myoclonic jerks
- Drowsiness that has not passed after 48 hours

Neurotoxicity is an indication to switch opioid

Incomplete cross tolerance and/or genetics may explain why switching works

Differential diagnosis: renal failure, hypercalcaemia, brain mets, delirium
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Opioid dose conversion

- Opioid Dose Conversion ratios can never be more than an approximate guide
- Conversion ratios need to be tailored to the individual
- Margin of error increases at higher doses
- For some patients, PRN requirements may not represent background pain (increase by 1/3-1/2)
- Consider rounding dose up or down to nearest convenient dose of preparation concerned
  - E.g. Morphine sulphate MR 60mg (one tab) v. 50mg (30mg + 2x10mg = 3 tabs)
- Double check dose conversion with a colleague

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Oxycodone

Oxycodone MR (OxyContin, OxyLan, Longtec)
Onset 1 hour, 12 hour modified release

Oxycodone IR (OxyNorm, Lynlor, Shortec)
Liquid and capsules
Immediate release

10mg oral oxycodone = 20mg oral morphine

Oxycodone is the 2nd line opioid of choice if patient has normal renal function after morphine

It may suit some patients better due to genetic differences or incomplete cross tolerance, but it isn’t any better than morphine head to head.

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Case

Mrs P had palliative radiotherapy to her arm and leg after her last oncology appointment. Her blood tests were normal. She comes to see you 3 weeks later in surgery as she is feeling more tired and has noticed more “twitches” and some frightening dreams and feeling drowsy again. Her pain is much better following the radiotherapy, she is sleeping through the night and has not taken any breakthrough medication.
Case

What do you think has happened?

What do you advise now?
Case

What do you think has happened?
What do you advise now?

Response to radiotherapy

Dose reduction – 30-50% 20mg Oxycodone MR bd and Oxycodone 5-10mg PRN
Prescribing in renal failure (not in last days of life): Case

Mohammed is 67 years old with metastatic renal cell carcinoma, with widespread bone metastases and type 2 diabetes. He had a previous nephrectomy and bloods taken a week ago show his eGFR has dropped from 41 2 weeks ago to 21 ml/min. He is on no nephrotoxic drugs and in the letter from oncology outpatients last week it is clear there has been a decision for no further treatment and not to investigate his deteriorating renal function further. He is PS 2. He comes to see you because although his bone pain is well controlled on MR morphine, (which was increased 2 weeks ago) he has recently noticed some mild hallucinations and drowsiness.

Drugs:

Morphine MR 60mg bd
Oramorph 20mg PRN
Prescribing in renal failure (not in last days of life): Case

What would you suggest to improve his side effects?

What dose of regular opioid would you start with and what instructions would you give?

What about the PRN opioid?

NB We would expect you to ask us for advice.
Prescribing in renal failure (not in last days of life): Case

Change to fentanyl patch as pain is stable

Start with fentanyl patch 25 microg/hr
~ 90mg PO morphine/24 hrs (60-130mg)

Instructions: as toxic reduce overlap time to 6 hours:
-(remember Zomorph lasts 12 hours)
-i.e. put patch on 6 hours after taking last dose of Zomorph
-inform may need PRN opioid for up to 24 hours after putting on patch

PRN opioid
Hydromorphone 1.3-2.6mg

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**Opioids in renal failure**

Consider alternative opioids to morphine if eGFR < 30ml/min

Always seek specialist advice

If not in dying phase then aim is to titrate with Hydromorphone

(1.3mg =10mg of oral morphine)

When stable convert to fentanyl patch and use hydromorphone for PRN

If borderline but stable eGFR and tolerating morphine don’t have to change but warn patient to look out for side effects.
Choice of opioid if eGFR<30ml/min and able to take oral medication: Moderate to severe pain

Fentanyl patches

Useful for management of stable background pain

Mainly metabolised in liver to inactive metabolites

Transdermal fentanyl: Takes 3 days to reach steady state. Patients require access to regular doses of immediate release opioid during first 12-24h and for breakthrough medication.

Smallest patch is 12mcg/hour patch, equivalent to 45mg morphine/24 hours, therefore do not use in opiate naïve patients.

Fentanyl can be given transmucosally for incident pain, short acting. (Abstral)

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Choice of opioid if eGFR<30ml/min and able to take oral medication: Moderate to severe pain

Hydromorphone

Hydromorphone is metabolised in the liver to Hydromorphone-3-Glucuronide, which is excreted in the urine and accumulates in renal failure.

None the less, patients with renal impairment in a palliative care unit had an improved side-effect profile when switched from morphine to Hydromorphone.

Comes as IR and MR capsules

Hydromorphone IR cap 1.3mg =10mg PO morphine

(divide morphine dose by 7.5)
Choice of opioid if eGFR 30 - 89ml/min (Mild to moderate renal impairment)

All opioids that are appropriate for cancer pain can be used with consideration of reduced dose or frequency at a lower eGFR

Monitor for changes in renal function and consider a pre-emptive change of opioid in rapidly deteriorating renal function

Some areas use oxycodone but no real evidence for this

Could consider increasing dose interval of PRN to 6 hourly.

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Buprenorphine patches

Low dose, good for non-malignant stable pain

Not good for unstable malignant pain

Probably safe in renal failure

Partial opioid antagonist but not relevant at the doses of patches so fine to use any other opioid as PRN.

7 day patches (Butrans and others) (2-20 microg/hr)

Remember 4 day patches (Transtec and others) 35—70 microg/hr

No more than 2 patches at any time.

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Summary

Assess the patients pain

If they have no pain and opioid side effects then reduce the dose (and consider why the pain is better – radiotherapy effect, addition of co-analgesic, taken to bed and therefore not moving)

If they still have pain and have toxicity then change the opioid in the clinical context –

think ?reduced renal function, ?consider whether other intervention is needed, ?addition of co-analgesic, ?is this actually an opioid responsive pain

Use of opioids in end stage renal function is complicated

Seek advice from hospice advice line or refer 0117 9159430
Principles and practicalities of Anticipatory Prescribing

Dr Dida Cornish

St Peter’s Hospice, Feb 18

www.stpetershospice.org
Anticipatory Prescribing

Learning objectives:
Understand the principles
Understand areas of improvement from recent evaluation
Understand risks/cautions
Understand individualised prescribing
Put prescribing into practice with case discussions
Anticipatory Prescribing

- Community Palliative Care Drug charts
- In use BNSSG wide
  - Paper charts
  - EMIS based protocol with decision aid and alerts to produce chart and FP10
  - Prepopulated form for opioid naïve patients
  - Form with drop downs for all others
  - Ideally to be printed out double sided and stapled correctly
- Hospitals may send out charts but only if known to Palliative Care Team who will prioritise those on drivers or in last days, not all palliative care patients
Anticipatory Prescribing Project

- Patient leaflet with sticky label
- 2 page guidance to standardise practice
- Policy
- Pharmacies stocking Palliative Care drugs
- All on St Peter web site clinical guidelines page.
Anticipatory Prescribing-Principles

Last weeks of life:
• Recognise deterioration, assess, communicate and plan.
• Prescribe 4 PRN sc meds for 5 symptoms ‘just in case’ (at least 10 vials)
• Authorise for DNs PRN.

Approaching last days of life:
• Authorise all 4 medicines for syringe driver ‘just in case’ but see cautions
• Authorise ‘appropriate ranges’

Incompatibilities:
• Cyclizine is incompatible in a driver with:
  – 1) Buscopan 2) Oxycodone at high doses
Anticipatory Prescribing - Cautions

- Patient/carer misconceptions
- Assessment of symptoms, reversible causes.
- Syringe drivers authorised ‘just in case’:
  - If not approaching last days of life unless specific symptom predicted e.g. bowel obstruction: vomiting
  - Certain settings e.g. many nursing homes
  - ?Completely opiate naïve and no pain ?? Maybe just prns is enough.
  - Appropriate range
- Writing up drugs without assessing the patient yourself?? E.g at request of DN out of hours or on a Friday
Anticipatory Prescribing - Advice about ranges

- Authorise ‘appropriate ranges’
- For opioid or midazolam:
  e.g. PO SR Morphine 30mg BD

Midazolam 10mg/24 hours
Anticipatory Prescribing - Advice about ranges

- Authorise ‘appropriate ranges’
- For opioid or midazolam:
  - Morphine 30mg/24 hours in a syringe driver
    - Conservative allow for 2 PRN SC doses of 5mg morphine 30-40mg. 30% increase
    - Usual maximum 4 PRN doses (4 x 5 = 20mg) morphine 30-50mg. 60% increase
  - Midazolam 10-20mg/24 hrs
    - But individualise e.g. v. frail, low body weight
    - Midazolam 5-15mg
    - Big patient needing PRNs of 5mg (4 x 5mg)
    - Midazolam 10-30mg
- If thinking of wider ranges, discuss and justify
AP Evaluation: Methods

- Collaboration with Bristol CCG, Bristol Care Coordination Centre and District Nursing Leads
- **Is chart embedded and does it affect outcomes?**
- 12 DN bases
- Collected data retrospectively, as soon as possible after death
- 50 consecutive patients with expected deaths
- **Does the chart facilitate safe and appropriate anticipatory prescribing and is it being used appropriately?**
- 30 consecutive deaths 4 DN bases (SPH medic assessed charts against standards from guideline)
- Separate questionnaire to GPs attending a study day
RESULTS – IS THE CHART EMBEDDED?

Standard A. All expected deaths should have a community drug chart in place.

47/49 patients had chart in place

Remaining 2 patients died in hospital and chart status was unknown
HAS THE CHART INFLUENCED PRESCRIPTIONS MEETING STANDARDS?

PRN drug choice, dose, route, frequency, range and indication appropriate

comparison with data from 2010 on PRN anticipatory prescribing
If Anticipatory syringe driver medication is prescribed this should be when a patient is felt to be approaching the last days of life (exception: specific indication for syringe driver e.g. patient has lost oral route or is at high risk of losing oral route in the near future)

- Range 1–153 days, mean 19.9 days
- 22 of 30 (67%) within last 14 days of life
- In 24/30 (80%) of the charts with CSCI prescriptions, these were written on the same day as the PRN medications
<table>
<thead>
<tr>
<th>In relation to the Community Palliative Care Drug Chart</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>It facilitates appropriate and safe anticipatory prescribing</td>
<td></td>
<td></td>
<td></td>
<td>9</td>
<td>12</td>
</tr>
<tr>
<td>It is an improvement on the previous system of paper authorisation sheets</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td>It is too time consuming for GPs</td>
<td>4</td>
<td>5</td>
<td>8</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>It has improved the recording of medicines administered</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
<td>11</td>
</tr>
</tbody>
</table>
• Huge progress!

• 96% of expected deaths had a chart in place and 88% of these had a medication prescribed for each of the 4 major symptoms

• Of the patients where a PPD was specified, 96% of patients achieved this. 4 patients died in hospital, all of which were felt to be unavoidable with a drug chart
HOW TO COMPLETE

• **Professional details:**
  • Records of administration absent only in 2 individual doses
  • Prescriber details incomplete in 22% of charts not individuals
  • Details of person administering drugs incomplete in 53% of charts not individuals
  • GP practice details incomplete in 28%

**Recommendations:**

• Communication/education to GPs, GP trainees, Palliative Care Teams/DNs
• Discuss whether GP practice details essential
Deviation from guidelines was mostly minor and not unsafe
Many were common prescribing omissions (e.g. units, dates, signature)
Notable improvements from 2010
3 cases PRN doses not recalculated,
1-2 cases not authorising the actual opioid patient was taking
2 areas of concern raised:
• Ranges
  • 7 episodes of CSCI ranges not complying with local guidelines:
  • CSCI morphine (4) and CSCI midazolam (3)
• Timing of CSCI authorisation
  • 10/30 prescribed >2 weeks before death and 80% at same time as PRNs
Recommendations:

- **Education**
  - Ranges
  - Timing of syringe pumps
  - Opioid choice and adjusting PRN dose in line with background

- **Adaptations to the chart**
  - Clearer advice on timing of syringe pump
  - Clearer advice on dose ranges
  - Space for once daily injections?
  - Tick box for presence of opioid patch?
CONCLUSION

The Community Palliative Care drug Chart and Anticipatory Project have facilitated safe and appropriate prescribing and supported good patient outcomes.

Further education is needed in 2 main areas: ranges (30-60% or 2-4 PRNs) and timing (approaching last days) for syringe drivers.
Case : PRN SC drugs

Fred is 64 with ca lung and brain metastases. He has no treatment options. Current medication is:
Morphine SR 90mg BD
Oramorph 30mg
Dexamethasone 8mg OD (headaches at lower doses)
Keppra 500mg BD (has had 1 seizure)

He is in his last weeks of life. What do you write on his Community Drug Chart:
### Case: PRN SC drugs

<table>
<thead>
<tr>
<th>Drug</th>
<th>PRN Dose/frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Morphine</td>
<td>15mg-20mg sc hourly Pain/SOB (15mg/ml x 10 vials)</td>
</tr>
<tr>
<td>Cyclizine</td>
<td>50mg SC TDS</td>
</tr>
<tr>
<td>Midazolam</td>
<td>2.5-5mg sc hourly agitation (10mg/2mls: 10 vials) 10mg sc stat for seizure</td>
</tr>
<tr>
<td>Hyoscine Hydrobromide</td>
<td>400 micrograms 4 hourly secretions</td>
</tr>
</tbody>
</table>

- Remember Cyclizine and HBB not compatible.
- Therefore don't usually choose cyclizine for JIC meds.
- Usually metoclopramide or haloperidol 1st line?,
- Haloperidol and levo lower fit threshold

**NEWS: Hyoscine Butyl Bromide shortage, plus possible cardiac risks.**
- Alternative is glycopyrronium 200 microgram PRN 4 hrly
Case

Fred is deteriorating and now entering last days. He can't swallow. His medication is unchanged.
Morphine SR 90mg BD
Oramorph 30mg
Dexamethasone 8mg OD (headaches at lower doses)
Keppra 500mg BD (has had 1 seizure)

• What SC PRN and syringe driver medication would you prescribe/authorise (include ranges and whether starting today)
• Is there any other medication you would consider?
## Case: syringe driver medications

<table>
<thead>
<tr>
<th>Drug</th>
<th>PRN Dose/frequency</th>
<th>Dose in driver</th>
</tr>
</thead>
<tbody>
<tr>
<td>Morphine*</td>
<td>15mg-20mg sc hourly Pain/SOB</td>
<td>90mg-120mg (or 150mg)</td>
</tr>
<tr>
<td>Cyclizine **</td>
<td>50mg PRN but max</td>
<td>150mg/24 hrs150mg</td>
</tr>
<tr>
<td>Midazolam*</td>
<td>2.5-5mg sc hourly agitation</td>
<td>20-30mg (or 40mg)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10mg sc stat for seizure</td>
</tr>
<tr>
<td>Hyoscine</td>
<td>400 microg 4 hourly secretions</td>
<td>1.2-2.4mg/24 hrs</td>
</tr>
<tr>
<td>Hydrobromide</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water for injection</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dexamethasone</td>
<td>6.6mg sc OD</td>
<td>Regular chart ?? PRN</td>
</tr>
<tr>
<td>3.3mg/ml equivalent to 4mg PO</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

   - Enough for at least 3 days plus prns
   - Think about morphine strengths
     - Prescribe 30mg/ml for driver and prns,
     - Consider 10mg/ml vials for flexibility with prns.

*Authorise ‘start today’

**2nd line antiemetic e.g. levomepromazine
Case

- What opioid would you have authorised prn and in driver for a patient with normal renal function who had been on:
  - Fentanyl patch 50microgram/hr?
  - Oxycontin 60mg BD?
Case

- Fentanyl patch 50microgram/hr?
  50microgram patch=90x2 =180mg of oral morphine
  Divide by 2 = 90mg of morphine/24h
  Prn dose 90mg/6 =15mg morphine sc (15-20mg)
  Range for driver 30-60mg (2-4 PRN doses)

- Oxycontin 60mg BD?
  24 hour Po Oxycontin 120mg
  divide by 2=60mg sc oxycodone/24 hours (range 60-80/60-100mg)
  60mg/6 =10mg sc oxycodone prn hourly
APin Specific circumstances

• Fits: If already on anticonvulsants routinely prescribe midazolam 20-30mg/24hrs via driver for use when unable to take orals. If small/frail start with 10mg/24hrs
  – STAT 10mg sc/buccal (5mg if frail) for seizure

• Steroids: consider stopping or reducing depending on how long they have been taking. However maintain if providing symptom control. PO~=sc dose 4mg
  ~=(3.3mg/ml)
  – Ideally prescribe as once a day stat sc in am
  – Doses above 6.6 (2mls) will need to be given in a separate syringe driver/24hours
Fentanyl Patches

- Do not initiate in terminal phase
- Do not discontinue in terminal phase top up with SC morphine
- Appropriate for stable pain
- May take up to 72 hours to reach full analgesic efficacy
- Patch strength is in mcg/hr
- 24 hour dose equivalent of ‘25’ fentanyl patch
  - 600mcg fentanyl = 60-90mg oral morphine = 30-45mg SC morphine/24hrs
  - PRN dose is 30mg-45mg/6 = 5mg-7.5mg morphine
- Authorise driver with a range of 2-4 breakthrough doses e.g. 10-20mg or 15-30mg
- For Buprenorphine 35 patch prn SC morphine ~5mg
Last days: Special Circumstances

• SC anti-emetics in Parkinson’s disease
  – Avoid haloperidol, metoclopramide
  – Cyclizine and low dose levomepromazine with caution
  – Ondansetron least likely to cause side effects

• Renal failure. EGFR < 30, Seek advice. Consider SC fentanyl or SC alfentanil, but pragmatic approach. E.g if low doses and EGFR borderline/stable use morphine or oxycodone

• Risk of massive haemorrhage?/other terminal event: IM or buccal midazolam 10mg
Renal disease in the last days of life: Case

Vera is 88 years old with end stage renal failure, secondary to hypertension. Her renal failure has been managed conservatively, as she was not felt to be a candidate for renal replacement therapy. Bloods were last checked several months ago, when her eGFR was 10ml/min. Her past medical history also includes osteoarthritis, for which she takes paracetamol PRN and occasional tramadol 50mg PRN. She has deteriorated dramatically and you think she is in her last days. She seems comfortable.

Drugs:
- Paracetamol 1g qds
- Tramadol 50mg bd PRN
- Atenolol 25mg daily
- Atorvostatin 20mg daily

What might you consider at this stage?
Renal disease in the last days of life: 
Choice of opioids if eGFR <30

- Alfentanil or Fentanyl are the opioids of choice – less renal excretion of parent drug and the metabolites are not active.
  - Morphine, diamorphine and oxycodone are renally excreted, as are their active metabolites and repeated doses can lead to significant toxicity.

Indication and uses
- Consider use if
  - S/C opioid is needed and
  - patient has EGFR <30 and
  - clinically relevant risk of side effects if another opioid is used

DO NOT HESITATE TO SEEK SPECIALIST ADVICE
Renal disease in the last days of life: Fentanyl and Alfentanil

- Oxycodone or Morphine can be given if the patient is not opioid toxic while a supply of alfentanil or fentanyl is obtained.

- NB there are risks in using these opioids in the community so a pragmatic decision should be made weighing up risks and benefits.

- If stable on current opioid and very close to end of life or eGFR in the 20’s and not deteriorating rapidly it may be appropriate to continue current opioid but monitor closely for signs of toxicity.

- Don’t hesitate to seek advice!
# Last days of life egfr <30

<table>
<thead>
<tr>
<th>Drug</th>
<th>PRN Dose/frequency</th>
<th>Dose in driver</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fentanyl</td>
<td>12.5-25 microg sc hourly</td>
<td>50-100 micrograms</td>
</tr>
<tr>
<td>Haloperidol*</td>
<td>0.5-1mg 8hrly PRN</td>
<td>1-5mg/24 hrs</td>
</tr>
<tr>
<td>Metoclopramide*</td>
<td>10mg 8hrly</td>
<td>20-40mg</td>
</tr>
<tr>
<td>Levomepromazine*</td>
<td>5mg 8hrly</td>
<td>5-10mg</td>
</tr>
<tr>
<td>Midazolam*</td>
<td>2.5-5mg sc hourly agitation</td>
<td>5-15mg</td>
</tr>
<tr>
<td>Hyoscine Butylbromide</td>
<td>20mg 2 hourly secretions</td>
<td>60-100mg</td>
</tr>
</tbody>
</table>

*Choose one*
Renal disease in the last days of life: Pain 3
Fentanyl and Alfentanil

- Fentanyl inj is approx 150 x more potent than oral morphine
- Alfentanil inj is approx 30 x more potent than oral morphine
- Fentanyl/Buprenorphine patch: continue patch, if increase in background dose required, can add syringe driver with fentanyl/alfentanil

### Approximate dose conversions

<table>
<thead>
<tr>
<th>Patient on drug A</th>
<th>Divide the 24 hour dose of A by this number:</th>
<th>To convert to the 24 hour dose of drug B</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>PO morphine</td>
<td>150</td>
<td>SC fentanyl</td>
<td>15mg</td>
</tr>
<tr>
<td>PO morphine</td>
<td>30</td>
<td>SC alfentanil</td>
<td>30mg</td>
</tr>
<tr>
<td>SC diamorphine</td>
<td>10</td>
<td>SC alfentanil</td>
<td>10mg</td>
</tr>
</tbody>
</table>
Renal disease in the last days of life: Pain
Fentanyl and Alfentanil Practicalities

• Fentanyl vials are 50 micrograms per ml so:
  – maximum sc injection is 100 micrograms
  – maximum dose in driver is 600-900 micrograms

• There are 2 different strengths of alfentanil, so caution is required
  – 500micrograms/ml and 5mg/ml

• SC alfentanil injection is short acting lasting only ~ 1hr

• The PRN dose of fentanyl and alfentanil is calculated as 1/10 of the background dose
Resources/references

http://www.stpetershospice.org.uk/healthcare-professionals-guidelines/

- Care of Dying adults in last days of life
  https://www.nice.org.uk/guidance/ng31/chapter/Recommendations
- http://www.respectprocess.org.uk/