To Infinity and Beyond!
Safe and Effective Opioid Titration Strategies

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Disclosure

NOTHING

Learning Objectives

- At the conclusion of this presentation the participant will be able to:
  - Explain how to convert from a complex opioid regimen to a different opioid regimen, demonstrating consideration of both patient- and medication-specific variables
  - List opioid dosing strategies for both dosage escalation and tapering, including oral, parenteral, and transdermal routes of administration
  - Discuss a strategy to switch from an oral opioid to a parenteral opioid, including a PCA basal/bolus regimen
Case of Mrs. DA

- 54 year old woman
  - Stage 4 breast cancer → mediastinal, right axillary node, bone (rib) metastases
  - Esophageal stricture from tumor in mediastinum
- s/p chemotherapy x 3, radiation therapy, several esophageal dilations
- Moderately severe pain in chest and right arm
- Son in military (travels); sister (RN) lives 2 hours away
- Patient has many concerns:
  - Ability to cope with disease as it progresses
  - Doesn’t want to burden family
  - Finances (nutritional supplements)

Case of Mrs. DA (cont’d)

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- S/P chemotherapy x 3, radiation therapy; s/p several esophageal dilations
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- Son in military (travels); sister (RN) lives 2 hours away
- Patient has many concerns:
  - Ability to cope with disease as it progresses
  - Doesn’t want to burden family
  - Finances (nutritional supplements)
- What additional information would you like to better evaluate her pain complaints?
What is the most likely pathogenesis of Mrs. DA’s pain complaints?

- **Pain**
  - **Nociceptive**
    - **Visceral**
    - **Somatic**
  - **Neuropathic**
    - **Central or Peripheral**
The case continues…

- Patient tells you acetaminophen 4 g/day not making a difference in pain
- She’s afraid to try something stronger—fears “getting hooked”
- Oncologist says chemo/radiation not an option
- Labs WNL (SCr 0.8 mg/dl; height 5’3”, weight 101 lbs)
- PMH includes seasonal allergies and mild hypertension
  - BP <120/80 mmHg (not on antihypertensive therapy)

Now what??

The case continues…

- Patient reluctantly begins:
  - Morphine 5 mg po q4h around the clock
  - Morphine 2.5 mg po q2h prn moderate pain or
  - Morphine 5 mg po q2h prn severe pain
- Within a week she reports she is using:
  - Morphine 5 mg po q4h around the clock
  - Morphine 10 mg po at bedtime
  - 1-2 doses of morphine 5 mg for BTP per day
  - TDD oral morphine ~ 35 mg on average

How will you monitor her response to therapy?
Monitoring the Patient

<table>
<thead>
<tr>
<th>Therapeutic effectiveness</th>
<th>Subjective</th>
<th>Objective</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Pain rating (best, worst, average) anterior chest, right chest, arm</td>
<td>• Weight (gain)</td>
</tr>
<tr>
<td></td>
<td>• Able to eat more/easily without discomfort/less weakness</td>
<td>• PRN use of morphine</td>
</tr>
<tr>
<td></td>
<td>• Able to reposition in bed more easily/sleep better</td>
<td>• Observed grimacing, guarding</td>
</tr>
<tr>
<td></td>
<td>• Able to move her fingers more freely</td>
<td>• Number of hours sleeping/night</td>
</tr>
<tr>
<td></td>
<td>• Less tearful/better mood</td>
<td>• Objective assessment of affect (anxiety, depression)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Potential toxicity</th>
<th>c/o constipation, abdominal fullness/cramping</th>
<th>BM frequency, Bristol Stool Chart</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>c/o nausea, vomiting</td>
<td># episodes of vomiting</td>
</tr>
<tr>
<td></td>
<td>c/o itching</td>
<td>Observed exorrhage</td>
</tr>
<tr>
<td></td>
<td>c/o excessive sleepiness</td>
<td># hours sleeping</td>
</tr>
<tr>
<td></td>
<td>c/o confusion</td>
<td>MMSE score/delirium scoring</td>
</tr>
</tbody>
</table>

The case continues...

- One week later Mrs. DA tells you:
  - Morphine has helped, but every 4 hour dosing is not good (pain reminds her)
  - Morphine 10 mg at bedtime still doesn’t give pain relief til the morning
  - Anterior chest pain has reduced to average of 3-5/10, ok but not at goal
  - Eating a little better, mostly drinking Ensure, no solid food yet
  - Rates right lateral chest pain as a 5-6, still shoots up to a 9 when she rolls on her right side
    - Still adversely impacts her ability to get comfortable and sleep at night
    - Sleep pattern unchanged: 3-5 hours a night and it’s interrupted
  - Arm pain is largely unchanged: rate as a 6
    - Shooting episodes has not diminished in number, duration or intensity
    - Very upset about this—always waiting for it to strike
  - She’s constipated, rates as a type 1-2 (Bristol)
    - “rabbit pellet” BM twice in past week; strains, uncomfortable with BM
    - Nausea, abdominal fullness (denies vomiting, itching, excessive sleepiness or confusion)

Now what??
The case continues...

- Patient start on long acting/short acting opioid regimen
- Dexamethasone added; has helped right chest pain
- Patient still using 20 mg oral morphine for BTP with good effect for anterior chest pain
- Arm pain somewhat better, but patient still c/o episodes of shooting BTP
  - Oral morphine too slow in onset and only has modest effect

What are your next steps?
How would you adjust monitoring plan?

What’s the dealio?

- Identify ALL the complaints of pain
- Completely assess EACH pain ⇔ PQRSTU
  - Precipitating, palliating, previous tx, quality, region/radiation, severity, temporal, you (impact on life)
- Set goal
  - “What would you like to be able to do that you can’t do now because of the pain?”
    - Pain rating (rest, activity), functional goals
- Determine pathogenesis of EACH pain
- Select nondrug and drug interventions
- MONITOR response to therapy; adjust plan as needed
Rational Polypharmacy Analgesia

Reasons to Combine Analgesics (Opioid + Nonopioid)

1. To prolong analgesic duration
2. To enhance or optimize analgesic efficacy
3. To diminish or minimize adverse effects
4. To diminish opioid effects that are not beneficial
5. To reduce opioid tolerance/opioid induced hyperalgesia
6. To combat dependency/addiction/cravings

Smith HS. Pain Physician 208;11:201-214.
Adjuvant Analgesics

- **Multipurpose Analgesics**
  - Antidepressants, CCS, NSAIDs, α-2 adrenergic agonists, neuroleptics

- **Adjuvants for Neuropathic Pain**
  - Anticonvulsants, Na+ channel blockers, NMDA antagonists, cannabinoids

- **Topical Analgesics**
  - Capsaicin, local anesthetics, NSAIDs

- **Adjuvants for Bone Pain**
  - CCS, NSAIDs, calcitonin/bisphosphonates, Radiopharmaceuticals

- **Other**
  - Adjuvants for bowel obstruction, musculoskeletal pain

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### BRAIN

**Descending Inhibition**
- NE/Serotonin
- Opioid receptors

**Peripheral sensitization**
- **PNS**
  - Na+ (CBZ, OXC, PHT, TPM, LTG, Lidocaine, Mexiletine, TCA)

**Central Sensitization**
- **SPINAL CORD**
  - Ca++: NMDA, Ketamine, Dextromethorphan, Memantine, Methadone
  - Others: Capsaicin, Levodopa, NSAIDs, Cox inhibitors

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Topiramate, pregabalin, ziconotide

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*Fig. 4. Mechanistic stratification of antineuralgic agents. PNS = peripheral nervous system; CBZ = carbamazepine; OXC = oxcarbazepine; PHT = phenytoin; TPM = topiramate; LTG = lamotrigine; TCA = tricyclic antidepressants; NE = norepinephrine; SNRI = selective serotonin reuptake inhibitor; SNRI = serotonin and norepinephrine reuptake inhibitors; GBP = gabapentin; LVT = levetiracetam; NMDA = N-methyl-D-aspartate; NSAID = nonsteroidal anti-inflammatory drug.*

Opioid Initiation and Titration Strategies

Opioid Initiation Dosing—Nonacute Situation

- Oral morphine: 2.5-5 mg every 4 hours
- Oral hydromorphone: 1-2 mg every 3-4 hours
- Oral oxycodone: 2.5-5 mg every 4 hours
**Opioid Initiation—Acute Pain Crisis**

- In a supervised inpatient setting, administered by a physician or licensed independent practitioner
  - Morphine IV 1 mg every minute for 10 minutes, followed by a 5 minute break
  - Repeat for up to 30 mg total; refer for further evaluation
  - Alternately, fentanyl 20 mcg IV or hydromorphone 0.2 mg IV

**Opioid Initiation—Acute Pain Crisis (cont’d)**

- **Subcutaneous**
  - Morphine 2 mg every 5 minutes, fentanyl 40 mcg or hydromorphone 0.4 mg; same precautions as previous slide
- **Oral**
  - Morphine 5 mg (immediate-release formulation) every 30 minutes; alternately hydromorphone 1 mg or oxycodone 5 mg
Opioid Initiation—Acute Pain Crisis (cont’d)

- Previous slides describe administering opioid “until pain is controlled”
  - End point is a 2-4 point decrease in pain rating, not COMPLETE pain relief
  - If opioid administered until complete pain relief is achieved, this may result in overadministration of the opioid when all the drug administered achieves peak effect

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Case 1

- Mr. Epstein is a 72 yo hospice patient diagnosed with prostate cancer 2 years ago. His wife calls your office today stating he is in excruciating pain that came on very suddenly.
- The pain is in the right proximal femur. He says its agonizing and he rates it as a 10/10.
- He is taking naproxen 500 mg po q12h for pain at present. He has a starter kit of medications in the home.
- You arrive in 10 minutes. What do you recommend?
Dosing Finding Around-the-Clock Opioid Therapy

- Most patients start with “prn” dosing
- Pick your starting dose of morphine or oxycodone (or hydromorphone or oxymorphone), such as 2.5 or 5 mg every 4 hours, with the same dose available for breakthrough pain every 1-2 hours
- Have patient keep a pain diary
- Starting with long acting opioids?

Case 2—Transitioning to LA Opioid

- VW is a 49 yo man diagnosed with lung cancer.
- He developed pain that increased, and his use of Percocet (5 mg oxycodone/325 mg acetaminophen) gradually increased to 6 tablets a day.
- He rates his pain as a 4-5, and he would like it lower. He would also like to switch to an opioid he can take less frequently.

What dose of OxyContin would you recommend?
Opioid Dosage Escalation Strategies

- For moderate to severe pain, increase opioid total daily dose (TDD) by 50% to 100%, regardless of starting dose
- For mild-moderate pain, increase opioid TDD by 25% to 50%, regardless of starting dose
- Short acting, immediate release single ingredient opioids (morphine, oxycodone, hydromorphone) can be safely dose-escalated every 2 hours
- Long acting, sustained release opioids can be increased every 24 hours (this does not include TDF or methadone)

Case 3

- HB is a 54 yo secretary with severe osteoarthritis, receiving OxyContin 20 mg po q12h with Percocet (7.5 mg oxycodone/ 325 mg acetaminophen) for BTP.
- She tells you this regimen, using 3 Percocet tablets/day, keeps her comfortable.

Do you make a change in her regimen?

BTP: Breakthrough pain
Case 3 (cont’d)

- OxyContin 20 mg po q12h = 40 mg/day
- Percocet – 3 x 7.5 mg oxycodone = 22.5 mg/day
- TDD oxycodone = 62.5 mg
- Change to OxyContin 30 mg po q12h with Percocet (7.5 mg oxycodone/325 mg acetaminophen) one tablet every 4 hours PRN additional pain
- What if her pain had been an 8?
- What if her pain had been a 3-4?

Decreasing Opioid Doses

- For patients with good pain control, but experiencing dose related excessive side effects on an oral opioid regimen, it would be appropriate to reduce the around-the-clock opioid by 30%, but keep the rescue dose unchanged
- For patients with continued pain but experiencing an opioid induced adverse effect, consider adding a coanalgesic, and reducing the around-the-clock opioid by 30% to 50%
- If the patient undergoes a definitive pain relieving procedure, reduce regularly scheduled opioid by 50% immediately, and continue to reduce dose every third day until opioid discontinued. Keep rescue dose in place
Decreasing Opioid Doses (cont’d)

- Oral opioid slow taper
  - Reduce 10% weekly
- Oral opioid rapid taper
  - Reduce 25% to 50% every few weeks
  - Switch to slow taper once at oral morphine equivalent total daily dose of 60-80 mg

Did I taper too fast?

- Restlessness, irritability, agitation, dysphoria
- Abdominal pain/cramping
- Pupillary dilation, lacrimation, rhinorrhea
- Piloerection (goosebumps), yawning
- Sneezing, anorexia, nausea, vomiting, diarrhea
- SOWS, COWS scales

Managing Breakthrough Pain

Strain Your Brain!

Breakthrough Pain

- Spontaneous
  - Idiopathic, occurring with no known stimulus
- Incident
  - Secondary to a stimulus that the patient may or may not be able to control
- End-of-dose failure
  - Pain at the end of the dosing interval of a long acting opioid
### Characteristics Management Strategies

<table>
<thead>
<tr>
<th>Spontaneous</th>
<th>Management Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pain that requires no precipitating stimulus</td>
<td>Immediate release opioid on an as needed basis</td>
</tr>
<tr>
<td>Can occur without warning and be acutely severe.</td>
<td>Consider use of a coanalgesic (particularly if neuropathic)</td>
</tr>
<tr>
<td>Spontaneous pain commonly has a neuropathic component</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Incident pain; volitional</th>
<th>Management Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consistent temporal causal relationship with identifiable causes that are under the patient’s control such as patient-precipitated movement, wound, or personal care</td>
<td>Nonopioid or immediate release opioid, on an as needed basis prophylactically; rest; ice; patient education</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Incident pain; nonvolitional</th>
<th>Management Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consistent temporal causal relationship with identifiable causes that are NOT under the patient’s control such as sneezing, bladder spasm, or coughing</td>
<td>Immediate release opioid on an as needed basis</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>End-of-dose</th>
<th>Management Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pain that recurs before the next scheduled dose of the around-the-clock analgesic</td>
<td>Increase in dose and/or frequency of around-the-clock analgesic</td>
</tr>
<tr>
<td>Likely due to a subtherapeutic dose of analgesic</td>
<td></td>
</tr>
</tbody>
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- Do you have episodes of severe pain or BTP?
- How many episodes of BTP do you have each week? Each day?
- How long is it from the time the pain first occurs to when the pain is at its worst?
- How long does each episode of BTP last (minutes, hours)?
- On a scale of 0 to 10, with 0 being no pain and 10 being the worst pain you can imagine, how much does an episode of BTP hurt when it occurs?
- Describe where the BTP occurs. What does it feel like?
- Is the BTP similar to or different from your baseline persistent pain?
- Does your BTP occur with movement or other activity, spontaneously (not associated with any activity), or just before you are supposed to take your next dose of pain medicine?

- What impact does BTP have on your daily responsibilities at home/work? Are you able to do the things that you want/need to do?
- Are there any things you avoid doing or that you are able to do only with severe pain?
- What do you do to relieve the pain?
- What types of treatments have you used? How long did you use them? Were they effective? Are they still effective?
- What drugs have you used to relieve the BTP? What were the doses? Were they effective? Are they still effective?


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**Pharmacokinetics of IR Opioids**

<table>
<thead>
<tr>
<th>Solubility</th>
<th>IR Opioids</th>
<th>Onset of analgesia</th>
<th>Duration of effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrophilic</td>
<td>Morphine (oral)</td>
<td>30-40 minutes</td>
<td>4 hours</td>
</tr>
<tr>
<td></td>
<td>Oxycodone (oral)</td>
<td>30 minutes</td>
<td>4 hours</td>
</tr>
<tr>
<td></td>
<td>Oxymorphone (oral)</td>
<td>30 minutes</td>
<td>4-6 hours</td>
</tr>
<tr>
<td></td>
<td>Hydromorphone (oral)</td>
<td>30 minutes</td>
<td>4 hours</td>
</tr>
<tr>
<td></td>
<td>Methadone (oral)</td>
<td>10-15 minutes</td>
<td>4-8 hours</td>
</tr>
<tr>
<td>Lipophilic</td>
<td>Fentanyl (transmucosal)</td>
<td>5-10 minutes</td>
<td>1-2 hours</td>
</tr>
</tbody>
</table>

Dose of Rescue Opioid

- ONE dose of rescue opioid (e.g., oxycodone, oxymorphone, morphine) should be 10% to 15% of the TOTAL daily dose of oral long acting opioid
  - MS Contin 30 mg q12h
  - TDD = 60 mg
  - 10% = 6 mg; 15% = 9 mg
  - MSIR 5 or 10 mg q2h prn breakthrough pain
- Rate pain before and after rescue opioid

Case 4

- Mrs. Hendricks is a 54 yo woman with end stage esophageal cancer
- She is receiving TDF 75 mcg every 72 hours for persistent pain
- You would like to use morphine oral solution (20 mg/ml) for breakthrough pain

What dose do you recommend?
Case 4 (cont’d)

- TDF 75 mcg ≈ 150 mg TDD oral morphine
  - 10% = 15 mg
  - 15% = 22.5 mg
- Morphine oral solution, 20 mg every 2 hours as needed for breakthrough pain
- Keep a pain diary, rate pain before and after rescue opioid

Fentanyl Conversion Calculations

Strain Your Brain!
Fentanyl Tidbits

- Converting from oral LA opioid to TDF
  - If patient not taking oral morphine, convert to oral morphine
  - Using the 2 mg oral morphine/day ≈ 1 mcg/h TDF, calculate TDF patch strength
  - Advise patient to take one last dose of the oral long acting opioid at the same time the first TDF patch is applied
  - Increase TDF if necessary in 3 days, and every 6 days thereafter

Fentanyl Tidbits (cont’d)

- Converting from ATC SA opioid to TDF
  - If patient not taking oral morphine, convert to oral morphine
  - Using the 2 mg oral morphine/day ≈ 1 mcg/h TDF, calculate TDF patch strength
  - Advise patient to take 2 or 3 scheduled doses of their oral SA opioid after TDF patch application:
    1 at the time of patch application, another 4 hours later, and another 4 hours later if needed
  - Increase TDF in 3 days if necessary, then every 6
Fentanyl Tidbits (cont’d)

- Titrating TDF upward
  - After initiation of TDF therapy, evaluate use of rescue opioid on days 2 and 3.
    If patient using > doses of rescue opioid, calculate TDD of rescue opioid and increase TDF patch in equivalent amount
  - Increase by 25-50 mcg/h, but not to exceed a 100% increase.
    No dosage increase should exceed 50 mcg/h
    - Increase from 25 to 50 mcg/h
    - For patients on >50 mcg/h, increase by 50 mcg/h


Fentanyl Tidbits (cont’d)

- Converting from TDF to an oral opioid
  - Based on the TDF patch strength, calculate oral morphine evaluate
    (2 mg oral morphine/day ≈ 1 mcg/h TDF)
  - Once the new opioid product is in the patient’s home, remove TDF patch
  - For the first 12 hours after patch removal, use only the previously prescribed rescue opioid
  - 12 hours after patch removal begin with 50% calculated scheduled opioid regimen; rescue available
  - 24 hours after patch removal, increase to 100% calculated opioid regimen; rescue available

Fentanyl Tidbits (cont’d)

• Converting from TDF to IV fentanyl
  — Establish IV access, remove TDF patch
  — Allow “as needed” bolus dose of fentanyl
  — 6 hours after TDF patch removal, begin 50% of IV fentanyl infusion (which should be 50% of the patch strength); bolus option remains in place
  — 12 hours after TDF patch removal, increase IV fentanyl infusion to 100% of prescribed amount (which should be equal to the TDF patch strength); bolus option remains in place


Fentanyl Tidbits (cont’d)

• Converting from IV fentanyl to TDF
  — Apply TDF patch in same strength as IV fentanyl infusion
  — 6 hours after application of TDF, reduce IV fentanyl infusion by 50%; bolus option remains in place
  — 12 hours after application of TDF, discontinue IV fentanyl infusion; bolus option remains in place
  — 24 hours after application of TDF, discontinue IV fentanyl bolus

Case 5

- Mr. Johnson is a 62 yo cancer pain patient who is unable to swallow tablets or oral solution.
- He refuses rectal administration of medications, and is not interested in a parenteral infusion.
- He is currently receiving SR morphine 30 mg po q8h with MSIR 10 mg po q3h prn (taking ≈ 4 doses per day).

Case 5 (cont’d)

- His pain is well controlled on this regimen.
- What do you need to consider before converting him to transdermal fentanyl (TDF)?

How do you make this conversion?
Case 5 (cont’d)

- Calculate total daily dose of SR morphine:
  - SR morphine 30 mg po q8h = 90
  - MSIR 10 mg x 4 per day = 40
  - TDD = 130 mg oral morphine
- Generally give 50% of total daily morphine dose as transdermal fentanyl
  - 65 mcg—need to round up or down
  - Transdermal fentanyl 50 mcg q3days
- Considerations? Timing?

Tapering TDF 100 mcg/h Down

- Rapid titration—reduce by 50% every 6 days
  - 50 mcg/h q3d x 6 days (new patch on third day)
  - 25 mcg/h x q3d 6 days (new patch on third day)
  - 12 mcg/h x q3d 6 days (new patch on third day)
  - Discontinue
- Slow titration—reduce by 25 mcg/h (25%) every 15 days
  - 75 mcg/h q3d x 15 days (1 box of 5 patches)
  - 50 mcg/h q3d x 15 days (1 box of 5 patches)
  - 25 mcg/h q3d x 15 days (1 box of 5 patches)
  - 12 mcg/h q3h x 15 days (1 box of 5 patches)
  - Discontinue

Opioid Initiation and Titration Strategies

1. Determine the patient’s current opioid regimen and calculate a conversion to the parenteral opioid you will be using
   - MS Contin 30 mg po q12h with MSIR 10 mg po q4h (taking 4 doses per day) = 100 mg oral morphine TDD = 33 mg parenteral morphine TDD
Converting to PCA Infusions in Opioid Tolerant Patients (cont’d)

2. If the patient’s current opioid regimen is effective, go with the dose you calculated in Step 1. If not, increase by 25% to 100%.

3. If the continuous infusion you will be starting represents a dosage increase from the patient’s previous opioid regimen, you will want to provide a clinician loading dose at the start of the infusion (twice the infusion rate).

Converting to PCA Infusions in Opioid Tolerant Patients (cont’d)

4. Bolus calculation—50% to 150% of the hourly infusion rate

5. Select a dosing interval for the PCA bolus dose

6. Assess for therapeutic effectiveness and potential toxicity

7. Assess effectiveness of infusion rate
Adjusting the PCA Infusion

- Adjust the continuous infusion rate every 20-24 hours
  - Never increase more than 100%

- Adjust the PCA bolus dose as often as every 60 minutes

Case 6: Converting from Multiple Opioids to PCA Therapy

- HY is a 34 yo woman with end stage breast cancer and widespread mets
- Analgesics include:
  - Transdermal fentanyl 50 mcg/hr
  - MS Contin 60 mg po q12h
  - Hydromorphone 2 mg po q2h (takes 4 times per day)
  - Dexamethasone 8 mg po q12h
- In significant pain; you want to switch her to a morphine PCA infusion. What do you recommend?
Case 6 (cont’d)

- TDF 50 mcg/h ≈ 100 mg po morphine/day
- MS Contin 60 mg po q12h = 120 mg po morphine/day
- Hydromorphone 2 mg x 4 = 8 mg per day ≈ 32 mg oral morphine/day
- TDD oral morphine ≈ 252 mg
- TDD parenteral morphine ≈ 84 mg

Case 6 (cont’d)

- TDD parenteral morphine = 84 mg
- Continuous infusion ≈ 3.5 mg/hour IV morphine
- Increase by 25% due to extreme pain ≈ 4.4 mg/hour
- Recommend 4 mg/hour
- Clinical loading dose – 4 mg IV x 1
- PCA bolus = 2 mg every 15 minutes prn
Case 7:
Converting from a PCA infusion to oral opioid therapy

- NA is a 62 yo woman with cancer who had been admitted to the hospital for uncontrolled pain
- She is stable now and taking:
  - Naproxen 500 mg po q12h
  - Gabapentin 300 mg po q8h
  - PCA SQ morphine 1.5 mg/hour, plus 2 mg bolus which she takes before PT
- Calculate an equivalent oral morphine regimen

Case 7 (cont’d)

- 1.5 mg/hour x 24 hours = 36 mg SQ morphine per day
- x 3 = 108 mg po morphine per day
- Choices:
  - Avinza 100 mg po qd
  - Kadian 50 mg po q12h
  - MS Contin 45 mg po q12h
  - Oramorph 30 mg po q8h
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