Methadone for the Hospitalist

Methadone/Buprenorphine 101 Workshop
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Disclosures

No conflicts of interest to declare
Overview

- Role of the Hospitalist
- Assessment of the methadone patient
- Management of the methadone patient
- Discharge planning
- Case studies
Role of the Hospitalist

- As prescription use of methadone for the treatment of opioid use disorder and/or chronic pain has increased, hospitalization of methadone patients has become more common
  - **570** methadone maintenance-prescribing MDs in BC
  - **16,526** patients registered in methadone maintenance therapy (MMT) in BC
    - *figures current to December 1, 2015*
    - *figures current to March 21, 2017*
Number of Methadone Patients by Year

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Role of the Hospitalist

- Methadone can only be prescribed by physicians who receive authorization by the College of Physicians and Surgeons via a federal exemption under section 56 of the Controlled Drugs and Substances Act.
Role of the Hospitalist

- Physicians with a restricted exemption may prescribe methadone under the following terms:
  - In-hospital prescription of methadone for patients who are currently prescribed methadone in the community
  - Methadone dose prescribed in hospital shall not be higher than the dose prescribed in the community prior to their hospitalization
  - Bridging prescription at discharge
Role of the Hospitalist

- Determine if continuation of methadone in hospital is appropriate
- Determine the methadone dose to be used
- Reassess and adjust methadone dose accordingly
- Transition back to community upon hospital discharge
Methadone Pharmacology: Key Points

- Good GI absorption with detection in plasma within 30 minutes of ingestion
- Peak concentration 2–4 h after oral ingestion
- Half-life 24 (15–40) h
- Hepatic biotransformation with excretion of methadone metabolites in bile and urine
Methadone Pharmacology: Key Points

- Potential interaction with drugs that affect cytochrome P450 3A4

- Methadone levels increased by:
  - Acute alcohol ingestion
  - Diazepam, fluoxetine, fluvoxamine
  - Amiodarone, nifedipine
  - Cimetidine
  - Ciprofloxacin, erythromycin, fluconazole, ketoconazole
Methadone Pharmacology: Key Points

- Methadone levels decreased by:
  - Chronic alcohol use
  - Risperidone
  - Carbamazepine, phenobarbital, phenytoin,
  - ARVs-efavirenz, nelfinavir, nevirapine, ritonavir
  - Rifampin
Methadone Pharmacology: Key Points

- Methadone effect can be blocked by
  - Pure antagonist — naloxone, naltrexone
  - Mixed agonist/antagonist — buprenorphine, pentazocine
Methadone Overdose

- **Minimum lethal dose (non-tolerant individuals)**
  - Adults: 50–60 mg single dose or 40 mg x 3 days
  - Children: 10 mg single dose

- **Continuation of methadone at the same dose in hospital as in the community may lead to overdose:**
  - Patient not taking full prescribed dose on regular basis prior to admission
  - Altered pattern of use of illicit drugs or prescribed medications during hospitalization
  - Acute medical illness: ↓ LOC or respiratory compromise, hepatic dysfunction
Assessment of the Methadone Patient

- Confirm the dose of methadone prescribed and actually ingested by the patient
- Obtain a history of recent use of illicit drugs and prescribed medications
- Assess for CNS and respiratory depression, and hepatic or renal dysfunction
Assessment of the Methadone Patient

- Drug use Hx (previous & current patterns including last use, first use, & longest period of abstinence)
- Previous addiction treatment
- Current & past medical Hx (including Psychiatric)
- Medications & Allergies
- Family Hx
- Relationships/social supports
- Legal & Financial issues
- Housing status
Assessment:
Community Methadone Dose

- Patient history
  - Current dose, date last taken, doses missed in last 7 days, duration of time on current dose
  - Name of methadone prescriber and dispenser
  - Recent use of “street” methadone or misuse of Rx

- Confirm methadone dose prescribed and ingested
  - Methadone bottle label
  - Medication administration records if transferred from another institution
  - PharmaNet record
  - Discussion with community pharmacist (cancel existing prescription)
Assessment: Community Methadone Dose

- Limitations of PharmaNet
  - Doses received in hospital are not included
  - Doses may be entered by pharmacist ahead of time
  - Reduced or missed doses at institutions (e.g. jail) may not be documented

- Only doses that have been witnessed ingestion under the supervision of a qualified health professional can be confirmed

- Cannot confirm ingestion of doses dispensed as “take home” doses
Assessment: Drugs and Medications

- CNS or respiratory stimulants/depressants
  - Stimulants: cocaine, crystal methamphetamine
  - Depressants: opioids, alcohol, benzodiazepines, barbiturates

- Withdrawal syndromes
  - Alcohol, benzodiazepines, barbiturates

- Interactions with methadone metabolism
Assessment: Acute Medical Illnesses

- CNS — GCS
- Respiratory — RR, oxygen saturation, ABG
- Hepatic — asterixis, stigmata of chronic liver disease, liver function (albumin, INR, bili)
- Even mild changes in liver or respiratory function can have significant effect
- Renal — urine output, BUN/CR
- Assess for substance intoxication and withdrawal syndromes
Collateral History

- Family
- MD/methadone clinic
- EMS
- Police
- Pharmacist
- Nursing staff
- Medical records
Methadone Prescription Options

1. Continue methadone dose at same dose
2. Methadone dose reduction
3. Methadone splitting
4. Stop methadone
Management of the Methadone Patient

- Methadone dose prescribed in hospital should be reduced or dispensed in split doses if:
  - Patient not ingesting full prescribed dose on a regular basis (e.g., vomiting, sharing or selling a portion of their doses)
  - Patient has missed 2 consecutive doses or 3 of the last 7 days
  - Ingestion of methadone cannot be confirmed (e.g., community pharmacist not available or “take home” doses dispensed)
  - Patient reports sedation on current dose
  - Medical condition may impact breathing, LOC, or methadone metabolism
Methadone Prescription Options

1. Continue methadone in hospital at same dose as in the community

2. Methadone dose reduction
   - Reduce the methadone dose by 25–33% and add the balance as prn doses
   - e.g., community dose: 100 mg po q am
     → in hospital order: 70 mg po q am + 10 mg po q 3-4 h prn (maximum 3 doses per 24 h) hold if drowsy
3. Methadone splitting
   - Split the dose into 3 or 4 equal doses
   - e.g. community dose: 200 mg po q am
     → hospital dose: 50 mg po qid hold if drowsy

4. Hold methadone +/- substitute with short-acting morphine prn
   - e.g. obtundation, hypercapneic respiratory compromise, drug overdose
Methadone Titration

- Patients who require methadone dose reduction or splitting in hospital may be gradually titrated back towards single daily dosing as tolerated
  - e.g., 70 mg q am + 10 mg prn (3 doses used in last 24 h)
    → 80 mg + 10 mg q 4 h prn (max 2 doses/24 h)
    → 90 mg q am + 10 mg q 4 h prn (max 1 dose/24 h)
    → 100 mg q am
  - e.g., 50 mg qid
    → 100 mg q am + 50 mg q pm + 50 mg q hs
    → 150 mg q am + 50 mg q pm
    → 200 mg q am
Pain Management

- Patient reports of pain may actually be expressions of fear, anxiety, agitation, stress: “chemical coping behaviour”
- Follow WHO Analgesic Ladder
- Avoid parenteral route if possible
- Routine use of oral liquid forms reduces diversion or injection
- Remember to taper as acute problem improves
- Equianalgesic tables not accurate with chronic opiate patients
Management of Psychiatric Disorders

- More often Axis II disorders = difficult behaviours
- Avoid benzodiazepines because of disinhibition, sedation and addictive potential
- Treat agitation with quetiapine, loxapine, methotrimeprazine, etc.
- Bedtime sedatives quetiapine, trazodone, nortriptyline (low dose)
- Use of (realistic) “contracts” for disruptive behaviours
Management of the Methadone Patient

- Cancel community prescription to prevent “double dipping”
- All doses dispensed in hospital should be witnessed by nursing staff
- Vomited Doses
  - Only replace if emesis witnessed by staff (if vomiting occurs <15 minutes post-ingestion, replace full dose; 15-30 minutes, replace half of dose; >30 minutes, do not replace dose)
  - If emesis is recurrent, consider split dosing or reduced volume
- NPO
  - Most surgeons & anesthetists will permit ingestion of methadone the morning of surgery (up to 150 ml)
  - If sustained NPO, substitute with sc morphine or continuous IV by pump
Discharge Planning

- Confirm that the patient has received hospital methadone on the day of discharge
- Notify community methadone prescriber of current methadone dose, date of last dose received, and confirm plans for community methadone prescription and follow-up
- Notify community pharmacist
Discharge Planning

- Address housing and addiction treatment issues
  - Home
  - Shelter
  - Detoxification
  - Residential recovery/treatment
  - Community supports including counseling and self-help groups
Case 1

- 45 y.o. woman admitted with cellulitis
- Pharmacist confirms methadone dose stable at 60 mg daily for last year, daily witnessed ingestion, no recently missed doses, and last dose received yesterday
Case 2

- 41 y.o. male admitted with COPD exacerbation due to pneumonia
- Patient reports methadone dose 50 mg daily, and no recently missed doses
- Pharmacy confirms witnessed ingestion 2 days/week, last dose yesterday
Case 3

- 35 y.o. male admitted with leg fracture
- Patient reports methadone dose 150 mg, dispensed daily by staff at his DTES residence. He denies any recently missed doses, but cannot recall name of pharmacy he goes to
- PharmaNet consistent with patient’s history, and there is no answer when you call staff at his residence
Case 4

- 45 y.o. male admitted to psychiatry with depression and suicidal ideation but no actual attempt

- He reports daily ingestion of methadone 200 mg bid for chronic pain. He denies any recently missed doses

- His pharmacist confirms monthly dispensing, last dispensed 5 days ago
Case 5

- 40 y.o. female admitted with arm abscess
- Patient reports daily witnessed ingestion of 90 mg methadone with no recently missed doses. She reports IV and smoked cocaine use $20/day
- Pharmacist confirms methadone dose and daily dispensing, but reports 1 missed dose 3 days ago. Patient also receives valium 10 mg po qid dispensed monthly
Case 6

- 55 y.o. male with HIV/AIDS admitted with pneumonia
- Patient is diaphoretic, hypotensive (80/40), and tachypneic on high flow oxygen
- Pharmacist confirms daily witnessed ingestion of methadone 100 mg, last dose received 3 days ago
Case 7

- A 32-year-old woman was admitted to the hospital with probable endocarditis. On presentation yesterday afternoon, she reported a history of a 5-day cocaine binge (1 gm/day), and was found to be agitated. It is now 24 h later and she appears to be hypersomnolent. She gets very annoyed when you rub her sternum.

- Community pharmacist confirms daily witnessed ingestion of methadone 50 mg, last dose received yesterday morning, and no recently missed doses.
Case 8

- 60 y.o. male with HIV/AIDS admitted to hospital 2 weeks ago with failure to thrive

- Current methadone dose 80 mg daily

- A decision has just been made to stop all of his anti-retroviral medications
Case 9

- 36 y.o. male admitted to hospital with endocarditis, Hx of long-term stable HCV
- AST 148 Alk phos 240 bili 42
- Current methadone dose 160 mg daily
- Slightly drowsy, but has been up 3 nights smoking crack
- In hosp meth = 120 + 4 x 10 mg prn
- Next day increasing drowsiness, with no prns
Case 10

- A 35 year old woman is admitted to hospital with cholecystitis
- She receives buprenorphine 24 mg SL per day, and reports that she has been drug and alcohol free for 24 months
- The hospital pharmacist informs you that buprenorphine is non-formulary, and asks you what dose of methadone you would like to use as a substitute