DISCLOSURES

Personal
- No financial conflicts of interest

Pharmacologic
- Many medications used in HPM are not FDA-approved for indications

HPM FELLOWSHIP COMPETENCIES

2.7. Describes the use of opioids in pain and non-pain symptom management
2.7.1. Lists the indications, clinical pharmacology, alternate routes, equianalgesic conversions, appropriate titration, toxicities, and management of common side effects for opioids, non-opioids (2.8.1).
2.9.2. Identifies the indications, clinical pharmacology, alternate routes, appropriate titration, toxicities, and management of common side effects for: opioids, anxiolytics, antiemetics, laxatives, psychostimulants, corticosteroids, antidepressants, antihistamines, neuroleptics, sedatives and other common agents used in palliative care practice
2.11.3. Describes the indications, contraindications, pharmacology, appropriate prescribing practice, and side-effects of common psychiatric medications
OBJECTIVES

1) Analyze the role for a pharmacist in hospice and palliative care settings
2) Demonstrate a structured approach to medication review and deprescribing
3) Identify three key resources for high-level, HPM-relevant drug information

OUTLINE

- Important Pharmacologic Themes in HPM
- Role of Pharmacy in HPM
- Medication Review and Deprescribing
LACK OF INFORMATION

• Off-label use and FDA approval
• Limited research
• Non-HPM journals
• Paucity of pediatric proof

OFF-LABEL USE AND FDA APPROVAL

• Role of the FDA – safe and effective
• How common is off-label prescribing?
• What is our responsibility?
• What do patients expect?
• International vs American differences
• Need to disclose in presentations

LIMITED RESEARCH IN HPM

• HPM is a young field
• Power of the anecdote
• Counter-culture eschews research
  • …but it’s changing
• If you see something, say something
• Read the literature, especially non-HPM
**PEDIATRIC CONSIDERATIONS**

- Check dose calculations
- Age & wt impact absorption/metabolism
- Neonates – low renal/hepatic clearances and higher distribution vol = prolonged half-life -> low dose & long interval
- Infants/children – high drug clearances, normal distribution -> shorter half-life
- Liver enzymes may not be fully developed in neonates

**HOW DRUGS WORK**

- Be an expert in
  - Mechanism
  - Metabolism
  - Receptors
  - Routes

**MECHANISM**

<table>
<thead>
<tr>
<th>CONSTIPATION</th>
<th>PAIN CONTROL</th>
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</thead>
<tbody>
<tr>
<td>• Bulk-forming</td>
<td>• Opioids</td>
</tr>
<tr>
<td>• Lubricants</td>
<td>• Steroids</td>
</tr>
<tr>
<td>• Surface-wetting</td>
<td>• Acetaminophen</td>
</tr>
<tr>
<td>• Osmotic</td>
<td>• Duloxetine</td>
</tr>
<tr>
<td>• Stimulant</td>
<td></td>
</tr>
<tr>
<td>• Focused opioid</td>
<td></td>
</tr>
<tr>
<td>antagonists</td>
<td></td>
</tr>
</tbody>
</table>
METABOLISM

- Hepatic impairment
- Methadone vs other opioids
- Short vs long acting
- Oral vs IV vs rectal differences
- Renal, liver, fecal clearance

RECEPTORS

- Anti-cholinergic
- Anti-muscarinic
- Anti-nicotinic
- Psychiatric drugs
  - Serotonin
  - Norepinephrine
  - Dopamine
  - TCA – like a shotgun
- Anti-emetics
  - Neurokinin
  - SHT\textsubscript{2}, SHT\textsubscript{3}, SHT\textsubscript{4}
  - Dopamine
  - GABA
  - Anticholinergic
  - Histamine
  - Opioid
  - Alpha
  - Cannabinoid

Table 1: Effectiveness of selected medications upon various receptors

<table>
<thead>
<tr>
<th>Medication</th>
<th>( \text{SHT}_{2} )</th>
<th>( \text{SHT}_{3} )</th>
<th>( \text{SHT}_{4} )</th>
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</thead>
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<td>Anticholinergic</td>
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<tr>
<td>Antimuscarinic</td>
<td>1</td>
<td>1</td>
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<tr>
<td>Antinicotinic</td>
<td>1</td>
<td>1</td>
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</tbody>
</table>

Smith, APM, 2012
ROUTES

- Intravenous vs subcutaneous
- Not all drugs
- Avoid intramuscular if subcutaneous could do
- Rectal absorption not guaranteed
- Check rectal preferences before prescribing
- Macy catheter

BEING RESOURCEFUL

- Drug-drug interactions
- Phind your pharmacist
- Online resources
DRUG-DRUG INTERACTIONS

- Does drug increase/decrease conc?
- Polypharmacy
- Combining infusions
- Cytochrome p450
- Serotonin syndrome
- QTc

Table 1

<table>
<thead>
<tr>
<th>Category</th>
<th>Drug combination</th>
<th>Frequency</th>
<th>Drug effect increased (?) or decreased (?)</th>
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<td>(i) 'Important'</td>
<td>Chlorpromazine + diphenhydramine</td>
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<td>(ii) 'Potentially important'</td>
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<td>Loperamide + diphenhydramine</td>
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<tr>
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<td>Metoclopramide + diphenhydramine</td>
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<td></td>
<td>Dextromethorphan + terfenadine</td>
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<td>Cetirizine + cimetidine</td>
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<td>Desloratadine + montelukast</td>
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<tr>
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<td>Desloratadine + diphenhydramine</td>
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<td>Desloratadine + zolpidem</td>
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<td>Zolpidem</td>
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<td>Doxepine + citalopram</td>
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<td>Doxepine + loratadine</td>
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<td>Doxepine + zolpidem</td>
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<td>Fexofenadine + cimetidine</td>
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<td>Haloperidol + cimetidine</td>
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<td>Cimetidine</td>
</tr>
<tr>
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<td>Levomepromazine + haloperidol</td>
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<td>Levomepromazine + citalopram</td>
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<td>Citalopram</td>
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<td>Levomepromazine + montelukast</td>
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</tr>
<tr>
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<td>Levomepromazine + loratadine</td>
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<tr>
<td>Total</td>
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</tbody>
</table>

Wilcock, Br J Clin Pharm, 2005

ROLE OF PHARMACY IN HPM
ROLE OF PHARMACY IN HPM

• General pharmacist responsibility
• Hospice pharmacists
• Community pharmacy
• Pharmacists as part of the IDT

THE PHARMACIST’S RESPONSIBILITY

• Assess medical orders
• Timely provision of effective meds
• Counseling and educating the team
• Counseling and educating patients and families
• Know the regs and licensing
• Address financial impact
• Ensures safe and legal disposal

HOSPICE PHARMACISTS

• Often not at IDT, off-site review
• Opioid conversions, especially with PCA
• Compounding medications
• Key role in safety
• Key role for inpatient units
• Ensuring opioid access
COMMUNITY PHARMACY

• Not often considered, yet critical
• Opioid access getting more limited
• Rural, suburban, urban differences
• 24/7 pharmacies – ask your hospice RN
PHARMACIST IN PALLIATIVE CARE

• New challenges in outpatient PC
• Education of patients & families @ DC
• Research and advice on medications
• Addressing incidents and errors
• Making the case for having a pharmacist
• Few examples out there

MEDICATION REVIEW AND DEPRESCRIBING

• Medication review
• Safe storage
• Safe disposal
• Fitness to drive
• Deprescribing
MEDICATION REVIEW

• Important early intervention
• What do you take _____ for?
• How well does that work for your ___?
• How often do you take _____?
• Do you have any side effects from __?

SAFE STORAGE

• Keep controlled substances secure
• Up high away from pets & kids
• Counsel on ‘losing your meds’

SAFE DISPOSAL

• DEA issued guidance in 2014
  • Take-back programs
  • Mail-back programs
  • Collection receptacles
• After death, hospice staff can assist and educate but cannot take possession
FITNESS TO DRIVE

* Federal Motor Carriers Safety Admin
* Small imperfect studies generally support chronic stable doses and driving

DEPRESCRIBING

* New concept popularized by CaDeN
* Public health effort in Canada
* Partnership with patient & prescriber
SUMMARY

• Pharmacologic Themes in HPM
• Role of Pharmacy in HPM
• Medication Review & Deprescribing

RESOURCES

AND OF COURSE... MARY LYNN MCPHERSON
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Oxford Textbook of Palliative Medicine, 5th ed, 2015
Hospice and Palliative Care Formulary USA, 2nd ed, 2008
Palliative Care Formulary, 5th ed, 2014

SECONDARY BIBLIOGRAPHY


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