

OPIOID CONVERSIONS

Morphine Oral Daily Dose

ORAL OPIOID EQUIANALGESIC CONVERSIONS			
Equivalent		OPIOID	MORPHINE
	2	OXYCODONE	3
	1	HYDROMORPHONE	5

CONVERTING OPIOIDS

- Mr. Smith is currently taking Percocet 5/325mg by mouth every four hours around the clock and has required 4 additional PRN doses. He reports to you that he is concerned about the Tylenol component and requests a change in opioids.
- You want to convert his Percocet to oral morphine.

CONVERTING OPIOIDS

- The first step is calculating his oral daily dose of oxycodone for conversion:
 - $5\text{mg oxycodone} \times 6 \text{ (every four hours)} = 30 \text{ mg oxycodone}$
 - $4 \text{ PRN doses of } 5 \text{ mg} = 4 \times 5\text{mg} = 20 \text{ mg oxycodone}$
 - $30 + 20 = 50 \text{ mg oxycodone over the past 24 hours}$

CONVERTING OPIOIDS

$$\begin{array}{l} \underline{2 \text{ mg oxycodone}} \\ 3 \text{ mg morphine} \end{array} = \begin{array}{l} \underline{50 \text{ mg oxycodone}} \\ X \text{ mg morphine} \end{array}$$

CONVERTING OPIOIDS

$$\begin{array}{ccc} \underline{2 \text{ mg oxycodone}} & = & \underline{50 \text{ mg oxycodone}} \\ 3 \text{ mg morphine} & & X \text{ mg morphine} \end{array}$$

$$2X = 3 \times 50$$

$$2X = 150$$

$$\underline{2X = 150}$$

$$\underline{2} \quad \underline{2}$$

$$X = 75 \text{ mg morphine/ 24 hours}$$

INCOMPLETE CROSS TOLERANCE

ADJUSTING FOR INCOMPLETE CROSS TOLERANCE	
POOR	100%
MODERATE	75%
EXCELLENT	50%

INCOMPLETE CROSS TOLERANCE

- Mr. Smith is only moderately palliated on his current regimen as he has required significant administration of breakthrough medication.
- We will use the moderate cross tolerance factor:
- $75 \text{ mg morphine} \times 0.75 = \underline{56.25 \text{ mg morphine/24 hours}}$
- We would give this patient 60 mg of morphine over 24 hours and arrive at a dosing regimen of MS Contin 30 mg PO Q 12 hours

CHANGING ROUTES OF ADMINISTRATION

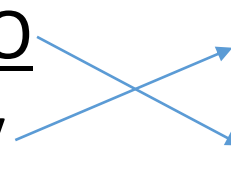
CHANGING ROUTES OF ADMINISTRATION	
PO/PR	IV/SC
3	1

CONVERTING FROM ORAL TO IV ROUTE

- Mr. Smith has had an increase in his morphine oral daily dose to 90 mg daily and has now lost the ability to swallow and has developed excessive secretions that limit the effectiveness of sublingual administration.
- We must convert his oral morphine to the intravenous route.

CONVERTING FROM ORAL TO IV ROUTE

3 mg PO 90 mg PO morphine
1 mg IV X mg IV morphine



$$3X = 90 \times 1$$

$$\underline{3X} = \underline{90}$$

$$3 \quad 3$$

$$X = 30 \text{ mg IV morphine/ 24 hours}$$

METHADONE CONVERSIONS

	METHADONE	
Daily Morphine Dose	Conversion Ratios	
Morphine mg/24 hours PO	Morphine PO	Methadone PO
<100	4	1
101-300	8	1
301-600	10	1
601-800	12	1
801-1000	15	1
>1001	20	1

METHADONE CONVERSION

- Mrs. Smith has transferred over from another hospice and she had been taking 100 mg of MS Contin three times a day.
- She additionally takes oxycodone for breakthrough pain and has taken 10 mg of oxycodone four times a day consistently over the past three days.
- She reports that she is poorly palliated on the current regimen.
- She is noted to have a neuropathic component to her pain.
- The IDG feels that she would be better served with methadone.

METHADONE CONVERSION

- Convert all to oral morphine
- Oxycodone 10 mg x 4 = 40 mg oxycodone
- PLUS 300 mg morphine
- ~~Total 340 mg oral morphine~~

We must convert the oxycodone to oral morphine!

METHADONE CONVERSION

- Convert all to oral morphine
- Oxycodone 10 mg x 4 = 40 mg oxycodone
- 40 mg oxycodone = 60 mg morphine
- PLUS 300 mg morphine
- TOTAL = 360 mg morphine oral daily dose

METHADONE CONVERSION

- At 360 mg morphine we would use the 10 to 1 conversion
- Getting us to 36 mg methadone over 24 hours
- With the conversion factor at 100%
- 36 mg methadone/24 hours
- We would give this patient 10 mg oral methadone TID (30 mg oral methadone daily)

CONVERTING TO A LONG ACTING AGENT

- Mr. White is utilizing roxanol for his pain at 5 mg PO every four hours around the clock.

- He is requesting a long acting agent as he doesn't want to keep taking medicine every four hours.

CONVERTING TO A LONG ACTING AGENT

- Roxanol 5 mg Q 4 hours = six doses at 5 mg each
- Morphine Oral Daily Dose = 30 mg morphine
- Converting to long acting morphine (MS Contin)
- No need for opioid conversion or incomplete cross tolerance factor
- MS Contin 15 mg PO Q 12 hours

CONVERTING TO A LONG ACTING AGENT

- MS Contin 15 mg PO Q 12 hours—what about a breakthrough dose?
- Morphine Oral Daily Dose is 30 mg morphine
- Breakthrough dosing is 10-15% of daily dose
- 3 mg morphine is 10% and 4.5 mg morphine is 15%
- We will keep the 5 mg morphine dose Q 4 hours PRN breakthrough pain

CONVERTING IV DILAUDID

- Mr. White is in the inpatient unit and on continuous infusion of IV Morphine at 20 mg/hour. His pain palliation is excellent at that dose.
- His family notes that he is having jerking movements that you identify as myoclonus.
- You wish to rotate the opioid to another agent, Dilaudid.

CONVERTING IV DILAUDID

- IV morphine at 20 mg/hour x 24 hours = 480 mg IV morphine/24 hours
- Convert to oral – MULTIPLY BY THREE (480 x 3=1440)
- Morphine Oral Daily Dose = 1,440 mg morphine

CONVERTING IV DILAUDID

- Convert to oral dilaudid:

$$\begin{array}{ccc} \underline{5 \text{ mg}} \text{ oral morphine} & = & \underline{1440 \text{ mg}} \text{ oral morphine} \\ 1 \text{ mg oral dilaudid} & & X \text{ mg oral dilaudid} \end{array}$$

$$5 \times X = 1440 \times 1$$

$$\underline{5} X = \underline{1440}$$

$$5 \quad 5$$

$$X = 288 \text{ mg oral dilaudid}$$

Convert oral dilaudid to IV dilaudid---DIVIDE BY THREE ---288/3= 96 mg IV dilaudid **over 24 hours**)

Are we done??

CONVERTING IV DILAUDID

- NO!!

Remember, Mr. White's pain was *excellently palliated* on his morphine dosing regimen, so we need to account for incomplete cross tolerance.

Using the excellent factor at 50%- the 24 hour dilaudid dose is:

$$96 \times 50\% = 48$$

So, the dilaudid daily dose is 48 mg IV.

Are we done??

CONVERTING IV DILAUDID

- NO!!
- We now have to divide the daily dose by 24 (hours in a day) to arrive at the hourly continuous infusion rate:

$$48 / 24 = 2\text{mg/hour of IV dilaudid}$$