

THOSE NASTY OPIOID CONVERSIONS: HOW TO DO THEM!!

1. Don't memorize the tables! Memorize where you put the tables (they should be in your pocket!) and how to use them!
2. There are a number of ways to do this – use the method you feel comfortable with that gives you the correct answer.
3. Don't hesitate to use a calculator!!

BASIC PROCEDURE TO CONVERT FROM “OLD” TO “NEW” OPIOID REGIMEN: \

1. Calculate the total dose of the “old” opioid in a 24 hour period.
2. Make the following equation, using the dose equivalency of the “old” and “new” opioid, taken from the following table:

Opioid Analgesic Dose Equivalency Table

Equianalgesic dose (mg)

DRUG	ORAL	PARENTERAL
Morphine	30 mg	10 mg
Hydromorphone (Dilaudid)	7.5 mg	1.5 mg
Oxycodone	20 mg	----
Methadone	20 mg	10 mg
Fentanyl	---	0.1 mg.
Meperidine (Demerol)	300 mg	75 mg.

$$\frac{\text{Mg "old" opioid}}{\text{Current mg of "old" opioid in 24 hours}} = \frac{\text{mg "new" opioid}}{\text{X}}$$

Where **X** = mg of “new opioid in a 24 hour period

3. Divide the 24 hour dose of the “new” opioid to obtain the desired interval dose (eg. Q4h, q12h, etc.)

Some examples:

Example 1: *A patient who been taking 10 mg of oxycodone q3h PO can no longer swallow; you want to start a continuous IV morphine infusion at an equianalgesic dose.*

1. 10 mg oxycodone q3h = $10 \times (24/3) = 80$ mg oxycodone/24 hrs.
2. Table 3 (page 14) of APS Pain Manual (4th Edition) says that 30 mg PO oxycodone = 10 mg of morphine (**note:** recent studies suggest that the equivalency is really 20 mg PO oxycodone = 10 mg IV morphine, but we will use the one in the table for the example)

Make the dosage ratio:

$$\frac{30 \text{ mg PO oxycodone}}{80 \text{ mg PO oxycodone/24 hrs}} = \frac{10 \text{ mg IV morphine}}{X \text{ mg IV morphine/24 hrs}}$$

$$X = 27 \text{ mg IV morphine/24 hrs}$$

3. The hourly infusion rate = $27 \text{ mg/24 hrs} = 1.125$ mg IV morphine per hour (you can round off to 1 mg/hr)

Example 2: *A patient with a pathologic fracture had satisfactory relief of pain with an IV morphine infusion of 6 mg per hour. You want to send her home on an equianalgesic dose of sustained release oral morphine (MS Contin or OraMorph SR given q12h, or Kadian q day).*

1. 6 mg/hr = 144 mg IV morphine/24 hrs
2. Ratio:

$$\frac{10 \text{ mg IV morphine}}{144 \text{ mg IV morphine/24 hrs}} = \frac{30 \text{ mg PO morphine}}{X \text{ mg PO morphine/24 hrs}}$$

$$X = 432 \text{ mg PO morphine/24 hrs} - \text{Kadian can be given once per day}$$

3. The q12h dose = 216 mg (MS Contin or OramorphSR) PO q12h --rounding to accommodate pill size = ~ 200 mg q12h
4. Calculate the PRN dose for "breakthrough" pain: Divide the 24 hr sustained release morphine dose (400 mg) by 6 = 66 mg immediate acting morphine PO q2h PRN.

Example 3: Same as example 2, but the patient's pain was controlled by an IV infusion of hydromorphone (Dilaudid) at 1 mg/hr. Calculate the equianalgesic q12h sustained-release morphine dose.

1. 1 mg/hr = 24 mg IV hydromorphone/24 hrs
2. Ratio:

$$\frac{1.5 \text{ mg IV hydromorphone}}{24 \text{ mg IV hydromorphone/24 hrs}} = \frac{30 \text{ mg PO morphine}}{X \text{ mg PO morphine/24 hrs}}$$

$$X = 480 \text{ mg PO morphine/24 hrs}$$

3. The q12h dose = 240 mg sustained-release morphine PO q12h

Adapted from: Weissman DE, Dahl JL, Dinnorf PA. *Handbook of Cancer Pain Management, 5th Edition*. Wisconsin Cancer Pain Initiative, Madison, WI, 1996.