Gippsland Region
Palliative Care
Consortium

Opioid Conversion Guidelines

March 2015

Gippsland Region
Palliative Care Consortium
Clinical Practice Group

Title	Opioid Conversion Guidelines
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Ratified	GRPCC Clinical Practice Group
Effective Date	March 2015
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Purpose	The intent of the policy is to promote region wide adoption of evidence based clinical tools. This policy has been endorsed by the GRPCC Clinical Practice Group. Its purpose and recommended use is to assist clinicians in quality palliative care pain management in conjunction with health services existing symptom management policies and procedures. Enquiries can be directed to GRPCC by email enquiries@grpcc.com.au
Acknowledgement	Considerable information contained in this guideline was taken from Southern Health & Calvary Health Care Bethlehem Opioid Conversion Documents
Pages	4

Policy Statement

Equianalgesic dose conversions are necessary when changing opioid drug therapy in the clinical setting. These guidelines should be used in conjunction with *The Eastern Metropolitan Region Palliative Care Consortium Opioid Conversion Ratios (EMRPCC OCR) - Guide to Practice* 2014[1].

Definitions

Opioid analgesics vary in potency, side effect and pharmacokinetic profile. Therefore the Opioid Conversion Guidelines have been developed to assist when changing opioid drug therapy.

Policy

Gaining expertise with the use of morphine, and other related opioids, for pain management should be the primary goal of those managing pain in the patient with advanced illness. There is a wide choice of routes of opioid administration and the adverse effects may be minimised by careful dose adjustment, particularly in patients with renal failure or in the elderly. The elderly and those with dementia have a higher risk of central nervous system adverse effects.

When rotating opioids for intolerable side effects or inadequate analgesia, it is advisable to reduce the dose of the new opioid by 25-50% due to incomplete cross-tolerance. There should be adequate provision made for breakthrough medication and the patient should be monitored closely.

Disclaimer All conversions in these guidelines are a guide only. It is the responsibility of the user to ensure all information contained in this document is used correctly. Medication doses should be modified in response to the patients' clinical condition and previous exposure to opioids.

Oral to Oral

Oral to Oral	Ratio	Example
Oral Tramadol to Oral Morphine to	5:1	Oral Tramadol 50mg =Oral Morphine 10mg
Oral Codeine to Oral Morphine	8:1	Oral Codeine 60mg = Oral Morphine 7.5mg
Oral Morphine to Oral Methadone	?	Complex pharmacology, **CONSULTANT REQUIRED. Dose requires to be titrated.
Oral Morphine to Oral Oxycodone	1.5 : 1	Oral Morphine 15mg = Oral Oxycodone 10mg
Oral Morphine to Oral Hydromorphone	5 : 1	Oral Morphine 5mg = Oral Hydromorphone 1mg

** Conversion to methadone from other opioids is complex, and *should not* be attempted without consultation with a specialist experienced in the use of methadone. Consultation is of particular importance for the higher doses.
It is *strongly* recommended that Methadone therapy be initiated in the inpatient setting where patients can be closely monitored for signs of cumulative toxicity (commonly sedation or confusion).[1]

Oral to Subcutaneous

Oral to Subcutaneous	Ratio	Example
Oral Morphine to SC Morphine	2-3 : 1	Oral Morphine 20-30mg = SC Morphine 10mg
Oral Methadone to SC Methadone	1.5 : 1	Oral Methadone 20mg = SC Methadone 15mg
Oral Hydromorphone to SC Hydromorphone	4 : 1	Oral Hydromorphone 4 mg = SC Hydromorphone 1mg
Oral Oxycodone (include Oral Oxycodone and Naloxone- *Targin* to SC Oxycodone	2 : 1	Oral Oxycodone 20mg = SC Oxycodone 10mg

Subcutaneous to Subcutaneous

Subcutaneous to Subcutaneous	Ratio	Example
SC Morphine to SC Hydromorphone	5 : 1	SC Morphine 10mg = SC Hydromorphone 2mg
SC Fentanyl to SC Sufentanil	10 : 1	SC Fentanyl 100mcg = SC Sufentanil 10mcg
SC Morphine to SC Fentanyl	70-100 : 1	SC Morphine 10mg = SC Fentanyl 100-150mcg
SC Morphine to SC Oxycodone	1-1.5 : 1	SC Morphine 10-15mg = SC Oxycodone 10mg
IM Pethidine to SC Morphine	10 : 1	IM Pethidine 100mg = SC Morphine 10mg

Subcutaneous to Other Opioid Conversions

Subcutaneous to Other	Ratio	Example
SC or SL Fentanyl to TTS Fentanyl	1 : 1	Fentanyl 600mcg/24 hr CSCI = Fentanyl patch 25mcg/hr
SC Sufentanil to SL Sufentanil	1 : 1	Sufentanil 10mcg CSCI = Sufentanil SL 10mcg
TTS = Transdermal Therapeutic System		CSCI = Controlled Subcutaneous Infusion

Opioid Patch & Equivalent Morphine / Oxycodone Doses

Strength	TTS Medication	Delivery Rate (micrograms/hour)	SC Morphine (mg/24 hours)	Oral Morphine (mg/24 hours)	Oral Oxycodone (mg/24 hours)
Durogesic 12	Fentanyl	12	10 - 20	20 - 60	15 - 40
Durogesic 25	Fentanyl	25	30 - 40	60 - 100	40 - 70
Durogesic 50	Fentanyl	50	60 - 80	120 - 200	80 - 140
Durogesic 75	Fentanyl	75	90 - 120	180 - 300	120 - 200
Durogesic 100	Fentanyl	100	120 - 160	240 - 400	180 - 270
Norspan 5	Buprenorphine	5		9 - 13	5 - 10
Norspan 10	Buprenorphine	10		18 - 26	10 - 20
Norspan 20	Buprenorphine	20		36 - 53	25 – 40

After application of the fentanyl patch peak plasma levels are achieved ~ 24 hours (significant plasma levels occur in 12 to 16 hours). Buprenorphine patch takes 3 days to achieve its steady state.

On removal serum elimination half lives are: fentanyl 15 – 20 hours: buprenorphine 12 hours. Oral opiates should not be started until at least 12 hours following removal of either patch (excluding breakthroughs). Regular oral analgesia needs to be continued for 12-24 hours after commencing either patch.

FORMULA for calculating SUFENTANIL Break-Through Doses (BTD) for a given Fentanyl Patch

For a given Fentanyl Patch of x mcg/hr:
BTD = x/5 micrograms of Sufentanil 2 hourly
e.g. for Durogesic 25: BTD = 25/5 i.e. 5 microgram Sufentanil 2 hourly

- Break-Through Doses should not exceed 40 micrograms Sufentanil
- Sufentanil is available as 250 mcg/5ml – i.e. 50 mcg/ml

<u>Please note</u> that Sufentanil has been removed from the EMRPCC OCR- 2010 as this medication is only used by specialised Palliative Care Services. Sufentanil is only available through the Special Access Scheme. The GRPCC Clinical Practice Group, however, decided to leave Sufentanil's calculating formula and dosage information in this guideline because of its clinical usefulness in some situations.

Oral Analgesic Preparations

Drug	Trade Name	Release Rate	Usual Frequency	Presentation
Buprenorphine	Temgesic	Immediate	Every 6-8 hours	200mcg tablets
Fentanyl Transmucosal	Actiq	Immediate	Every 2 -3 hours	200,400,600, 800mcg lozenges
Hydromorphone	Dilaudid	Immediate	Every 2-3 hours	2,4,8mg tabs, 1mg/ml mixture
	Jurnista	Slow release	Every 24 hours	8,16,32,64 mg tablets
Methadone	Physeptone	Immediate	Every 12 hours	10mg tablets, 5mg/ml mixture
** Morphine *(see notes on breakthrough medication)*	MS Contin	Slow release	Every 12 hours	5, 10, 15, 30, 60, 100, 200mg tablets
	MS Contin Suspension	Slow release	Every 12 hours	20, 30, 100mg sachet
	MS Mono	Slow release	Every 24 hours	30, 60, 90, 120mg capsules
	Kapanol	Slow release	Every 12-24 hours	10, 20, 50, 100mg capsules
	Anamorph	Immediate release	Every 4-6 hours	30mg tablets
	Sevredol	Immediate release	Every 4-6 hours	10, 20mg tablets
	Ordine	Immediate release	Every 2-4 hours	1mg, 2mg, 5mg,10mg/ml mixture
Oxycodone	OxyContin	Slow release	Every 12 hours	5, 10, 20, 40, 80mg tablets
	Endone	Immediate release	Every 4-6 hours	5mg tablets
	OxyNorm	Immediate release	Every 4-6 hours	5, 10, 20mg capsules. 5mg/5ml Suspension
Oxycodone and Naloxone	Targin	Slow release	Every 12 hours	5/2.5, 10/5, 20/10,40/20mg tablets
Tramadol	Tramal/Zydol	Immediate	Every 4-6 hours	50mg tablets
	Tramal SR / Zydol SR	Slow release	Every 12 hours	100mg, 150mg, 200mg tablets

**Breakthrough and incident pain medication

Breakthrough pain is a heterogeneous pain state. The term has been used widely to describe a phenomenon whereby pain intensity suddenly increases to "break through" the background pain that is otherwise controlled by a fixed schedule around-the-clock opioid regime.[2] Breakthrough pain occurs between regular analgesic doses and reflects an increase in the level of pain beyond the control of baseline analgesia.[3]

Incident pain occurs with, or is exacerbated by, activity. It is a common occurrence in patients with metastatic bone disease or wounds requiring dressing.[4]

Breakthrough Dose (BTD) is an additional dose used to control breakthrough pain. BTD dose is also known as rescue dose.[4]

The usual management of advanced illness related breakthrough pain is with supplemental doses of analgesics (commonly opioids) at a dose proportional to the total around-the-clock (ATC) opioid dose.[5]

In addition to the ATC dose, breakthrough doses of the order of one twelfth to one-sixth (1/6-1/12) of the total daily dose should be ordered and/ or recommended.[5]

A widespread drug treatment is to give an extra dose of the regular analgesic, e.g. a p.r.n. dose of immediate-release **morphine** for patients taking ATC **morphine**[6]. A traditional practice, dating from before morphine related opioid products were available, was to give an extra dose of the regular q4h dose of oral **morphine** (i.e. one sixth of the total daily dose). However, many breakthrough pains are short-lived and this approach effectively doubles the patient's opioid intake for the next 4h.[6]

Accordingly, many specialist centres now recommend that the patient initially takes, as an immediate-release formulation, 10% of the total daily regular dose as the p.r.n. dose.[6]

However, a standard fixed-dose is unlikely to suit all patients and all pains, particularly because the intensity and the impact of breakthrough pain vary considerably. Thus, when patients have been encouraged to optimize their rescue dose, the chosen dose varies from 5–20% of the total daily dose.[6]

The widely known *Palliative Care Formulary 5th edition*[6] recommends 1/6 to 1/10 as a 'safe' starting breakthrough dose and individually titrate accordingly.

References

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