

The Use of Fentanyl in a Syringe Pump in Palliative Medicine: 2019

Subcutaneous Fentanyl IS NOT ROUTINELY USED IN OLHCS
Warning: Fentanyl should not be confused with Alfentanil
To ensure safety, Fentanyl must be prescribed in micrograms

Indications for Use	For the management of pain in patients with renal failure or, intolerable adverse effects from alternative opioids.																												
Pharmacokinetics	Fentanyl is a strong μ -opioid receptor agonist. It has a relatively low molecular weight and is lipophilic (unlike morphine) which allows for easy transfer across the blood brain barrier. It is sequestered in body fats, including epidural fat and the white matter of the CNS. After systemic redistribution, fentanyl acts supra-spinally mainly in the thalamus. When converting morphine to fentanyl, there is a decrease in opioid molecules outside the CNS. This explains why peripherally-mediated adverse effects (including constipation) can be less pronounced in patients on fentanyl.																												
Preparations	Sublimaze® 50 micrograms/mL (a 2 mL ampoule contains 100 micrograms). Note: Fentanyl 1000 micrograms = Fentanyl 1 mg																												
Conversion ratios	Selection of a single conversion ratio is made difficult by fentanyl's complex pharmacokinetics, particularly when considering single doses versus prolonged use. The literature suggests conversion ratios from parenteral morphine to parenteral fentanyl of 50-150:1.																												
Dose Conversion	In OLHCS, we use a conversion ratio of 50:1 between parenteral morphine and parenteral fentanyl. Thus we consider subcutaneous (SC) fentanyl to be approximately 50 times as potent as SC morphine. <table border="1" data-bbox="421 1016 1517 1384"> <thead> <tr> <th>MORPHINE PO MG</th> <th>MORPHINE SC MG</th> <th>FENTANYL SC MG</th> <th>FENTANYL SC MICROGRAMS</th> </tr> </thead> <tbody> <tr> <td>5 mg</td> <td>2.5mg</td> <td>0.05 mg</td> <td>50 micrograms</td> </tr> <tr> <td>10 mg</td> <td>5mg</td> <td>0.1 mg</td> <td>100 micrograms</td> </tr> <tr> <td>25 mg</td> <td>12.5mg</td> <td>0.25 mg</td> <td>250 micrograms</td> </tr> <tr> <td>50 mg</td> <td>25mg</td> <td>0.5 mg</td> <td>500 micrograms</td> </tr> <tr> <td>100 mg</td> <td>50mg</td> <td>1 mg</td> <td>1,000 micrograms</td> </tr> <tr> <td>200 mg</td> <td>100mg</td> <td>2 mg</td> <td>2,000 micrograms</td> </tr> </tbody> </table>	MORPHINE PO MG	MORPHINE SC MG	FENTANYL SC MG	FENTANYL SC MICROGRAMS	5 mg	2.5mg	0.05 mg	50 micrograms	10 mg	5mg	0.1 mg	100 micrograms	25 mg	12.5mg	0.25 mg	250 micrograms	50 mg	25mg	0.5 mg	500 micrograms	100 mg	50mg	1 mg	1,000 micrograms	200 mg	100mg	2 mg	2,000 micrograms
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Breakthrough Doses	<ul style="list-style-type: none"> The use of subcutaneous fentanyl 'as required' for the treatment of breakthrough pain is complex due to the pharmacokinetics of fentanyl. The duration of action of fentanyl is reported to be short after single doses in fentanyl-naïve patients (30-60minutes). However, with high or repeated doses it becomes longer acting due to a lengthening elimination half-life. Thus, the use of subcutaneous fentanyl 'as required' for breakthrough pain <u>should only be prescribed by a specialist experienced in its use.</u> Consideration may be given to the use of an alternative opioid e.g. morphine, oxycodone. Transmucosal preparations of fentanyl are available and may be considered for use in the treatment of episodic pain. They require individual titration as the effective dose cannot be reliably predicted from the maintenance dose of opioid. Transmucosal fentanyl should only be used in patients who are opioid tolerant (on a morphine equivalent of 60mg or more daily). 																												
Hepatic Impairment	Dose reductions are not usually required. However fentanyl undergoes hepatic metabolism. Empirical dose adjustment may be required. The metabolites of fentanyl are non-toxic and inactive.																												
Renal Failure	Dose reductions are not usually required. However accumulation in chronic use has been reported. Empirical dose adjustment may be required.																												
Diluents	Sodium Chloride 0.9% or Water for Injection may be used.																												
Compatibility Information	Compatibility information is limited. Please consult with pharmacy. Please report any incompatibilities to the Palliative Meds Info Service: (01) 4912578																												
Drug Interactions	Fentanyl is metabolised by CYP3A4 and is susceptible to drug interactions. Co-administration of fentanyl with a serotonergic agent may increase the risk of serotonin syndrome. Please consult with pharmacy. Please consult product information available from www.medicines.ie or www.hpra.ie																												
Issues for Discharge	Sublimaze® 50 micrograms/1 mL ampoules are not currently reimbursable on the medical card or Drug Payment Scheme. Therefore, patients in the community may have to incur the full product cost.																												