PalC
THE PALLIATIVE CARE
CENTRE FOR EXCELLENCE
IN RESEARCH AND EDUCATION

Symptom		Opioid Naive	
		CrCl> 30ml/min and normal ALT/AST	**CrCl< 30ml/min OR ALT/AST >3xUL**
PAIN	**Episodic/ Incident**	Standby PO mist morphine 2.5mg PRN 4H	Standby PO mist morphine 2.5mg PRN 8H (1st line) Standby SC fentanyl 25mcg PRN 2H (2nd line)
	Constant	Basal PO mist morphine 2.5mg every 4H Breakthrough PO mist morphine 2.5mg PRN 4H (1st line) SC Morphine 2mg PRN 4H (2nd line)	Basal PO mist morphine 2.5mg every 8H or Fentanyl patch 6mcg/h Q72h (Long acting formulation to be applied only when symptoms are stable AND total oral morphine dose, both baseline and breakthroughs, required by patient per day is 15mg) Breakthrough PO mist morphine 2.5mg PRN 8H (1st line) SC fentanyl 25mcg PRN 2H (2nd line)
	Severe symptoms where rapid control needed	Basal Start SC Morphine 0.2mg/H and titrate Breakthrough SC Morphine 2mg PRN 4H (1st line) Please refer to Palliative team concurrently as opioid infusions are commenced.	Basal Start SC fentanyl 10mcg/H and titrate Breakthrough SC fentanyl 25mcg PRN 2H Please refer to Palliative team concurrently as opioid infusions are commenced.

Consider adjuvants as co-analgesics to reduce dose of opioids and hence side effects

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Classes of adjuvants /indication	Titration and pharmacokinetics	Starting dose	Maximum dose	Starting dose for organ impairment/ frail patients
Gabapentinoids Neuropathic pain Cancer Induced Bony Pain	Start at appropriate dose and titrate based on response and tolerability (S/E : somnolence) Conversion ratio Pregabalin : Gabapentin 1 : 6	Gabapentin 300 mg ON Pregabalin 50-75mg ON	3600mg/day 600mg/day	Gabapentin 100 mg ON Pregabalin 25 mg ON
NSAIDS Bone pain Inflammation	Cox-2 inhibitor Non selective Cox inhibitor	Arcoxia 60mg OM Diclofenac 25mg TDS	120mg/day 150mg/day	Caution for: (i) renal injury (ii) gastric ulceration and BGIT Recommend adding gastro-protection e.g. PPI

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Symptom		Not Opioid Naive	
		CrCl> 30ml/min and normal ALT/AST	**CrCl< 30ml/min OR ALT/AST >3xUL**
PAIN	**Stable**	Basal Continue existing opioid Breakthrough morphine PRN 4H Oral: 1/6 of total daily oral morphine equivalent dose Parenteral: 1/10 of [total daily oral morphine equivalent dose divide by 3] * Please refer to Palliative team if pain is still not controlled despite (i) baseline opioids, or (ii) require help with titration. (for example if pt is on high dose baseline opioids)	Basal (a) If already on fentanyl patch → To continue (b) If existing opioid is morphine, convert to fentanyl patch (Refer to opioid conversion table on Pg 6. To note: onset of action for fentanyl patch is **8 hours**) Breakthrough Oral morphine: 1/6 of total daily oral morphine equivalent dose PRN 8H Parenteral fentanyl: 1/10 of total daily fentanyl dose PRN 2H ^ Please refer to Palliative team if pain is still not controlled despite (i) baseline opioids, or (ii) require help with titration. (for example if pt is on high dose baseline opioids)
	Increasing in severity	Basal STEP 1 : Increase total daily oral morphine equivalent dose by 30%. STEP 2 : Convert this to SC morphine infusion * (Refer to opioid conversion table on Pg 6). Breakthrough morphine PRN 4H Parenteral: 1/10 of [total daily oral morphine equivalent dose divide by 3] * (*Minimum SC morphine infusion rate is 0.2mg/h and minimum breakthrough SC morphine dose is 2mg) Please refer to Palliative team concurrently as opioid infusions are commenced.	Basal (a) If already on fentanyl patch → To remove and start SC fentanyl infusion at 30% of existing fentanyl patch dose and increase to 130% of existing fentanyl patch dose **8 hours after** patch removed. ^ (b) If existing opioid is morphine → STEP 1 : Increase total daily oral morphine equivalent dose by 30%. STEP 2 : Convert this to SC fentanyl infusion ^ (Refer to opioid conversion table on Pg 6). Breakthrough fentanyl PRN 2H Parenteral: 1/10 of total daily fentanyl dose ^ (^ Minimum SC fentanyl infusion rate is 10mcg/h and minimum breakthrough SC fentanyl dose is 25mcg) Please refer to Palliative team concurrently as opioid infusions are commenced.

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Symptom		Opioid Naive	
		CrCl> 30ml/min and normal ALT/AST	**CrCl< 30ml/min <u>OR</u> ALT/AST >3xUL**
B R E A T H L E S S N E S S	**Mild**	Standby PO mist morphine 2.5mg PRN 4H	Standby PO mist morphine 2.5mg PRN 8H (1st line) Standby SC fentanyl 25mcg PRN 2H (2nd line)
	Moderate	<u>Basal</u> PO mist morphine 2.5mg every 4H <u>Breakthrough</u> PO mist morphine 2.5mg PRN 4H (1st line) SC Morphine 2mg PRN 4H (2nd line) Please refer to Palliative team if SOB is still not controlled despite (i) baseline opioids, or (ii) require help with titration. (for example if pt is on high dose baseline opioids)	<u>Basal</u> PO mist morphine 2.5mg every 8H <u>or</u> Fentanyl patch 6mcg/h Q72h (Long acting formulation to be applied only when symptoms are stable AND total oral morphine dose, both baseline and breakthroughs, required by patient per day is 15mg) <u>Breakthrough</u> PO mist morphine 2.5mg PRN 8H (1st line) SC fentanyl 25mcg PRN 2H (2nd line) Please refer to Palliative team if SOB is still not controlled despite (i) baseline opioids, or (ii) require help with titration. (for example if pt is on high dose baseline opioids)
	Severe	<u>Basal</u> Start SC Morphine 0.2mg/H and titrate <u>Breakthrough</u> SC Morphine 2mg PRN 4H (1st line) Please refer to Palliative team concurrently as opioid infusions are commenced.	<u>Basal</u> Start SC fentanyl 10mcg/H and titrate <u>Breakthrough</u> SC fentanyl 25mcg PRN 2H Please refer to Palliative team concurrently as opioid infusions are commenced.

In the event that SOB is not controlled with opioids, consider benzodiazepine (**<u>PO Alprazolam 0.25mg PRN 8H or SC midazolam 2mg PRN 4H</u>**) to address **component of anxiety** contributing to SOB.

Symptom		Not Opioid Naive	
		CrCl> 30ml/min and normal ALT/AST	**CrCl< 30ml/min OR ALT/AST >3xUL**
BREATHLESSNESS	**Mild**	Basal Continue existing opioid Breakthrough morphine PRN 4H Oral: 1/6 of total daily oral morphine equivalent dose Parenteral: 1/10 of [total daily oral morphine equivalent dose divide by 3] *	Basal (a) If already on fentanyl patch → To continue (b) If existing opioid is morphine, convert to fentanyl patch (Refer to opioid conversion table on Pg 6. To note: onset of action for fentanyl patch is **8 hours**) Breakthrough Oral morphine: 1/6 of total daily oral morphine equivalent dose PRN 8H Parenteral fentanyl: 1/10 of total daily fentanyl dose PRN 2H ^
	Increasing in severity	Basal STEP 1 : Increase total daily oral morphine equivalent dose by 30%. STEP 2 : Convert this to SC morphine infusion * (Refer to opioid conversion table on Pg 6). Breakthrough morphine PRN 4H Parenteral: 1/10 of [total daily oral morphine equivalent dose divide by 3] * (*Minimum SC morphine infusion rate is 0.2mg/h and minimum breakthrough SC morphine dose is 2mg) Please refer to Palliative team if SOB is still not controlled despite (i) baseline opioids, or (ii) require help with titration. (for example if pt is on high dose baseline opioids)	Basal (a) If already on fentanyl patch → To remove and start SC fentanyl infusion at 30% of existing fentanyl patch dose and increase to 130% of existing fentanyl patch dose **8 hours after** patch removed. ^ (b) If existing opioid is morphine → STEP 1 : Increase total daily oral morphine equivalent dose by 30%. STEP 2 : Convert this to SC fentanyl infusion ^ (Refer to opioid conversion table on Pg 6). Breakthrough fentanyl PRN 2H Parenteral: 1/10 of total daily fentanyl dose ^ (^ Minimum SC fentanyl infusion rate is 10mcg/h and minimum breakthrough SC fentanyl dose is 25mcg) Please refer to Palliative team if SOB is still not controlled despite (i) baseline opioids, or (ii) require help with titration. (for example if pt is on high dose baseline opioids)

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In the event that SOB is not controlled with opioids, consider benzodiazepine (**PO Alprazolam 0.25mg PRN 8H or SC midazolam 2mg PRN 4H**) to address **component of anxiety** contributing to SOB.

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Equianalgesic Conversion Table		
Drug name	Total Daily Oral Morphine Equivalent Dose (PO)	Equivalent parenteral morphine infusion (IV or SC)
Mist morphine 2.5mg 4H	15mg	0.2mg/h
Morphine sulfate tablet 10mg TDS	30mg	0.4mg/h
Fentanyl patch 12mcg/h	30mg	0.4mg/h
Fentanyl patch 25mcg/h	60mg	0.8mg/h
Fentanyl patch 50mcg/h	120mg	1.6mg/h

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Symptom		Non-Pharmacological Management	Pharmacological Management
Agitated Delirium	Mild-Moderate	1. Assess patient for reversible causes of delirium 2. Treat possible causes of delirium 3. Address behavior (a) Re-orientation (b) Minimize use of catheters and IV lines (c) Minimize use of physical restraints (d) Review medications (e) Optimise pain control (f) Monitor bowels and bladder function	Start PO haloperidol 0.5mg 8H ⇩ Remains agitated Sublingual olanzapine orodispersible 2.5mg ON or PRN 8H
	Severe agitation/ refuse to take orally		SC Haloperidol 1.5mg PRN 6H KIV SC haloperidol infusion 5mg/day ⇩ Remains agitated SC Midazolam 2mg PRN 4H KIV SC midazolam infusion 0.2-0.5mg/H

Symptom	Non-Pharmacological Management	Pharmacological Management
Terminal Secretions	1. Position patient on his side to facilitate postural drainage 2. Stop or reduce parenteral/enteral fluids (preferably<500ml/day) 3. Ensure good oral care: Oral moisturising gel 1 application QDS to oral cavity <u>To note:</u> a) For many patients near the end of life, the burdens of artificial hydration and nutrition may outweigh the benefits. For example, it can worsen secretions, edema and ascites. b) Artificial nutrition and hydration does not prolong life or diminish suffering in terminally ill patients. c) Routine use of deep suctioning should be discouraged as it is uncomfortable and most secretions are usually below the larynx.	SC Buscopan 20mg PRN 4H <u>Or</u> if pt HR>100/min: SC Glycopyrrolate 0.4mg PRN 4H ⇩ Persistent secretions SC Buscopan infusion 60-120mg/day with breakthrough SC Buscopan 20mg PRN (max dose 120mg/day) <u>Or</u> if pt HR>100/min: SC Glycopyrrolate infusion 1.2-2.4mg/day with breakthrough SC Glycopyrrolate 0.4mg PRN (max dose 2.4mg/day)

When to refer to Specialist Palliative Care Service?

- Patients whose symptoms are poorly controlled despite above standardized protocols.
- Disputes among patient, family or physicians regarding resuscitation options or therapeutic goals.
- Patient or family with complex psychological, social or spiritual needs.

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References

- The bedside Palliative Medicine handbook, 2nd edition
- WHO Guidelines for the pharmacological and radiotherapeutic management of cancer pain of cancer pain in adults and adolescents

- Workgroup members:
- Dr Chiam Zi Yan, Dr Martin Lee, Dr Raphael Lee