Management of BREATHLESSNESS in the last days of life: PAEDIATRIC AND NEONATAL

Document 6

PAIN DOSE OF MORPHINE WILL ALSO TREAT BREATHLESSNESS. DO NOT PRESCRIBE 2 SEPARATE DOSES TO TREAT BOTH SYMPTOMS
SIMILARLY, IF BENZODIAZEPINE PRESCRIBED FOR RESTLESSNESS AND AGITATION, THIS WILL TREAT BREATHLESSNESS. DO NOT PRESCRIBE 2 SEPARATE DOSES TO TREAT BOTH SYMPTOMS

Assess patient in the last days of life a minimum of every 4 hours to allow existing and emerging symptoms to be detected, assessed and treated effectively

- Use the Comfort Observation Symptom Assessment: Paediatric and Neonatal (COSA: P&N) to document assessments
- Environmental considerations may include: decrease room lighting and noise, increase airflow (including handheld fan), position to maximise comfort and airway, secretion management, mouthcare, the presence of parents/carers including kangaroo cuddles, favourite toys, books, music, electronics that are developmentally appropriate. Rationalise visitor numbers.
- Consider and manage where possible causes of breathlessness

Route of medication administration

- **Enteral:** whilst the patient is able to tolerate this, the enteral route (oral/buccal/gastrostomy/naso-gastric [NG]) is preferred. (NB: absorption will be slower with enteral administration in the last days of life). If patient experiences severe breathlessness then subcutaneous (subcut) or intravenous (IV) route of administration is preferred
- **Subcut/IV:** consider using subcut route of administration or use IV access [Intravenous Cannula (IVC)/ Central Venous Access Device (CVAD)] if available and as per local policy. In tertiary children's hospitals, consider local opioid infusion guidelines.

Avoid intramuscular injections

For the majority of patients in the last days of life, MORPHINE should be used as the first line opioid for breathlessness (check allergies). Discuss with SPPC (including out of hours) regarding alternate opioid choices

IF YOU HAVE DOUBTS OR CONCERNS CONTACT A SPECIALIST PAEDIATRIC PALLIATIVE CARE SERVICE (SPPC) VIA ANY OF THE NSW CHILDREN'S HOSPITAL'S SWITCHBOARDS (INCLUDING OUT OF HOURS)

If patient has NOT been on regular opioids in the last 7 days
As required medication should be prescribed even if the patient is not currently breathless

MORPHINE IS FIRST LINE TREATMENT FOR BREATHLESSNESS. IF ANXIETY IS ASSOCIATED WITH BREATHLESSNESS THEN A **BENZODIAZEPINE** MAY BE REQUIRED IN addition TO MORPHINE. MIDAZOLAM IS USUALLY PREFERRED OPTION

ENTERAL (oral/gastrostomy/ NG)

Starting PRN MORPHINE Dose:

- < 50 kg patients (including neonates)
  0.05 mg/kg hourly prn for breathlessness
  (Maximum 6 prn doses in 24 hours)
  Be aware of longer clearance time in neonates
- > 50 kg patients
  2.5 mg hourly prn for breathlessness (Maximum 6 prn doses in 24 hours)

OR

For patients unable to swallow tablets but who can swallow oral liquid medicine, consider oxycodone liquid as it is more palatable than oral morphine liquid

Starting PRN OXYCODONE Dose:

- < 50 kg patients (excluding neonates)
  0.03 mg/kg hourly prn for breathlessness
  (Maximum 6 prn doses in 24 hours)
- > 50 kg patients
  1.5 mg hourly prn for breathlessness
  (Maximum 6prn doses in 24 hours)

(1 mg oxycodone =1.5 mg morphine- see table overleaf)

OR

SUBCUTANEOUS or INTRAVENOUS *(avoid intramuscular injections)*

Starting PRN MORPHINE Dose:

- < 50 kg patients (including neonates)
  0.02 mg/kg hourly prn for breathlessness
  (Maximum 6 prn doses in 24 hours)
  Be aware of longer clearance time in neonates
- > 50 kg patients
  1 mg hourly prn for breathlessness
  (Maximum 6 prn doses in 24 hours)

ENTERAL or BUCCAL or SUBCUTANEOUS or INTRAVENOUS *

Starting PRN Midazolam Dose:

- < 50 kg patient (including neonates)
  0.05 mg/kg hourly prn for breathlessness
  (Maximum 6 prn doses in 24 hours)
- > 50 kg patients
  2.5 mg hourly prn for breathlessness
  (Maximum 6 prn doses in 24 hours)

OR

ENTERAL or BUCCAL or SUBCUTANEOUS**

Starting PRN CLONazepam Dose:

- < 50 kg patient (For patient <10 kg seek advice SPPC)
  0.01 mg/kg every 6-8 hrs prn for breathlessness
  (Maximum 4 prn doses in 24 hrs)
- > 50 kg patient
  0.5 mg/dose every 6-8 hrs prn for breathlessness
  (Maximum 4 doses in 24 hours)

CLONazepam can be useful option as it has a long life (30-40 hours) and is dosed less frequently than midazolam. Do not use in syringe driver due to compatibility issues.

N.B. Enteral/buccal Administration of CLONazepam
1 drop = 0.1 mg & 25 drops = 2.5 mg =1mL

If patient remains breathless after PRN dosing or has required more than 3 PRN doses in 24 hours, prescribe regular MORPHINE AND BENZODIAZEPINE. If enteral dosing is becoming difficult then convert to subcut/IV morphine and consider starting subcut/IV benzodiazepine.

REGULAR DOSING
If patient HAS been taking regular enteral opioid in last 7 days and is no longer able to tolerate this or breathlessness is uncontrolled.

Convert regular dose of enteral opioid to subcut/IV morphine AND prescribe prn subcut/IV morphine
(See Opioid Conversion Table overleaf)

Discontinue regular enteral opioid and prescribe regular subcut/IV MORPHINE

regular subcut MORPHINE dose:
= one sixth (1/6th) parenteral equivalent of total 24 hour dose
Give as a subcut/IV dose every 4 hours

OR

Subcut infusion of MORPHINE *(dependent on local guidelines)*
(To calculate dose, use Opioid Conversion Table overleaf to calculate equivalent total 24 hour dose in parenteral morphine)

Plus ensure PRN medications are also prescribed
= one sixth (1/6th) parental equivalent of total 24 hour dose
Given as a subcut dose every 1-2 hours PRN (Maximum 6 prn doses in 24 hours)
Additional dose guidance can be obtained by contacting SPPC

If anxiety is present consider prescribing Regular BENZODIAZEPINE

Regular CLONAZEPAM dose:

- < 50 kg patient: 0.01 mg/kg every 6-8 hours subcut/ IV
- > 50 kg patient: 0.5 mg every 6-8 hrs prn subcut/ IV
  (Not for use in syringe driver due to compatibility issues)

OR

Midazolam Infusion (dependent on local guidelines)
Starting dose: 0.2 mg/kg **over 24 hours** subcut/IV
(Can be combined with morphine in same infusion)
Please contact SPPC for midazolam dosing advice if required

Ensure PRN medications are also prescribed

(for PRN dosing review dark blue boxes: Midazolam* or CLONazepam **)
Assess response and initiate further intervention if symptoms remain uncontrolled

If 3 or more prn doses are required in the previous 24 hours, increase regular and/or prn doses of MORPHINE [subcut/IV or infusion by one third (1/3) and regular and prn doses of BENZODIAZEPINE by one third (1/3)].
Seek advice from SPPC if breathlessness is not controlled

If patient demonstrates clinical features of opioid or benzodiazepine excess, DO NOT give antagonists (e.g. naloxone or flumazenil), as this may precipitate uncontrolled symptoms or medication withdrawal.
Please seek URGENT advice from SPPC for medication excess management.

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OPIOID CONVERSION PATHWAY

N.B. Second person must check medication calculation

CONVERTING TO ORAL MORPHINE		
Oral to oral	**Conversion ratio**	**Example**
Oxycodone to morphine	1:1.5	Oral oxycodone 1 mg = oral morphine 1.5 mg
HYDROmorphone to morphine	1:5	Oral HYDROmorphone 1 mg = oral morphine 5 mg

OPIOID CONVERSION: ORAL TO SUBCUTANEOUS (subcut) /INTRAVENOUS (IV) - same drug to same drug			
Oral	**Subcut/IV**	**Conversion ratio**	**Example**
Morphine	Morphine	3:1	Oral morphine 15 mg = Subcut/IV morphine 5 mg
Oxycodone	Oxycodone	3:1	Oral oxycodone 15 mg = Subcut/IV oxycodone 5 mg
HYDROmorphone	HYDROmorphone	3:1	Oral HYDROmorphone 3 mg = Subcut/IV HYDROmorphone 1 mg

MORPHINE DOSING EXAMPLE

To calculate patient's total daily dose and conversion to subcut/IV

Patient (25 kg) currently prescribed 15 mg dose of regular oral morphine and has received a total 7.5 mg PRN subcut morphine in last 24 hours

STEP 1	Determine total oral/gastrostomy/NG (=enteral) morphine dose in last 24 hours	15 mg
STEP 2	Determine total parenteral morphine dose in last 24 hours	7.5 mg
STEP 3	Calculate total daily parenteral equivalent of morphine 1/3 total morphine enteral dose (from step 1) **PLUS** total parenteral morphine dose in 24 hours (from step 2)	15 mg/3 + 7.5 mg= 12.5 mg
	Current total = morphine parenteral dose 24 hours	12.5 mg subcut in 24 hours
STEP 4	Calculate new REGULAR DOSE Calculate quantity for each dose: divide by 6 for every 4 hour dosing (12.5 mg/6 = 2mg) OR Calculate infusion rate if SC/IV infusion: divide by 24 for hourly infusion rate (12.5 mg/24 = 0.52 mg) **PLUS** Calculate new PRN DOSE Calculate quantity for each PRN dose: divide by 6 and give every 1-2 hours PRN	**NEW Regular Dose** 2 mg subcut/IV every 4 hours OR 0.52 mg/hour subcut/IV INFUSION **PLUS** **NEW PRN DOSE** 2 mg subcut/IV every 1-2 hours PRN