Palliative Care in the COVID-19 Pandemic

Briefing Note

Symptom Control at the End of Life in Children with COVID-19 Infection

Issue

Serious COVID-19 infection may be rare in children, and clinical data to inform care is limited. All children who become infected with COVID-19 should receive appropriate care, symptom management and, when needed, end-of-life care. Children's palliative care (CPC) providers may not be available and alternative care solutions may be required.

Background

Children appear to be significantly less affected by COVID-19 infection than adults, with many children asymptomatic or having mild upper respiratory tract symptoms. Despite this, health professionals caring for children should be equipped to provide effective symptom management and end-of-life care for all children, including those with underlying serious health conditions. This Briefing Note offers recommendations for managing symptoms at the end-of-life in all children with COVID-19 infection.

Key Facts

- Few children with COVID-19 infection have required hospitalisation, paediatric intensive care unit (PICU) admission or have died, although infants less than 1 year of age and children with underlying serious medical conditions may be at higher risk of developing severe illness.
- Symptom management may need to be provided in unique and innovative ways with considerable barriers in having families present when a child with COVID-19 is dying.
- Using innovative technology solutions is one option to enable the presence of family members at this time.
- Escalation to intensive care intervention may be undesirable or unavailable for these children but high-quality care focused on impeccable symptom management and comfort remains readily accessible no matter the resource setting.

Recommendations

- The impact of the COVID-19 pandemic on end-of-life care must be addressed. Considerations include: (a) advance care planning; (b) end-of-life care may not be possible in the child's/family's preferred place; (c) recognition that limitations on the presence of family members are likely during the child's death and funeral process due to personal, institutional, or governmental mandates.
- Specialised CPC teams must be readily accessible but if not, the child's primary paediatric team or adult palliative care team should offer support and advice.
- Principles for clinical care are: (a) treat reversible causes; (b) manage symptoms; (c) use pharmacological and non-pharmacological strategies.
- Avoid separating children from their carers as much as possible.
- Train front-line workers in managing distressing symptoms – remembering that symptoms can be related to COVID-19 infection or the underlying serious health condition.

International Association for Hospice & Palliative Care
whpca worldwide hospice palliative care alliance
icpcn international children's palliative care network
PalCHASE Palliative Care in Humanitarian Aid Situations and Emergencies

Symptom Management at the end of life for children with COVID-19 infection

- For managing **pain** at the end of life in children with COVID-19 infection:

Reversible causes	• Consider reversible causes • Observe for signs/symptoms of pain
Non-Pharmacological measures	• Cognitive, behavioural and physical interventions for pain management results in better pain control • Use nonpharmacological techniques alongside analgesic therapy • A trusting relationship with effective communications between child, family and health professionals is vital to good pain management

Pharmacological measures	**Mild Pain**
	• Use oral paracetamol for children[1]
	• For neonates, paracetamol and sucrose can be used for mild pain
	• Paracetamol - Oral
	  • ***Neonate*** -10-15mg/kg every 6-8 hours, maximum 60mg/kg/day
	  • ***Infant or child*** - 20mg/kg every 4-6 hours, maximum 75mg/kg/day (4g/day)
	• Paracetamol - Rectal
	  • ***Child*** - 30mg/kg then 20mg/kg every 6 hours
	
	Moderate to Severe Pain
	• Morphine sulphate - Oral
	  • ***Neonate:*** Initially 25-50 micrograms/kg every 6-8 hours adjusted to response
	  • ***Child 1–2 months:*** Initially 50 micrograms/kg every 4 hours, adjusted according to response
	  • ***Child 3–5 months:*** Initially 50– 100 micrograms/kg every 4 hours, adjusted according to response
	  • ***Child 6–11 months:*** Initially 100-200 micrograms/kg every 4 hours, adjusted according to response
	  • ***Child 1–11 years:*** Initially 200-300 micrograms/kg (initial maximum 5-10 mg) every 4 hours, adjusted according to response
	  • ***Child 12–17 years:*** Initially 5–10 mg every 4 hours, adjusted according to response
	
	• Morphine sulphate – IV/SC
	  • ***Neonate:*** Initially 25 micrograms/kg every 6-8 hours
	  • ***Child 1-5months:*** Initially 50-100 micrograms/kg every 6 hours
	  • ***Child 6 months-1 years:*** Initially 50-100 micrograms/kg every 4 hours
	  • ***Child 2-11 years:*** Initially 100 micrograms/kg every 4 hours adjusted according to response, maximum initial dose of 2.5 mg.
	  • ***Child 12-17 years:*** Initially 2.5-5 mg every 4 hours (maximum initial dose of 20 mg/24 hours).
	If morphine or other strong opioids not available, consider Tramadol, Oxycodone or other medications for moderate pain

1. *There is some discussion re the use of NSAIDS in individuals with COVID-19. If caring for a child at the end of life, and there is no paracetamol available then NSAIDS can be used alongside other medications as appropriate.*

- For managing **breathlessness** at the end of life in children with COVID-19 infection:

Reversible causes	• Consider reversible causes • Observe for signs/ symptoms of breathlessness or dyspnoea • Consider checking oxygen saturation
Non-Pharmacological measures	• Manage in a calm reassuring manner to reduce anxiety in child and family • Position child in upright position, as able • Address anxiety by exploration of fears and where appropriate, reassure child and family • Consider using breathing/relaxation techniques and cognitive behavioural strategies • Reduce room temperature • Wear loose clothing • Cool face with a cool flannel or cloth NB Portable fans are not recommended for use during outbreaks of infection

Pharmacological measures	• Humidified oxygen if hypoxaemia and available
	• Opioids to reduce perception of breathlessness:
	  • Use 30-50% of the **Morphine** dose used for pain (see above)
	• For anxiety associated with dyspnoea
	  • ***Child 1-9 years:*** Midazolam buccal 50-100 micrograms/kg PRN (max 2.5mg) single dose (maximum 4 doses/day)
	  • ***Child 10-17 years:*** Midazolam buccal 1.5-3 mg single dose (maximum 4 doses/day)
	• Levomepromazine for breathlessness due to agitation/distress: See delirium dosage
	• Consider lorazepam or clonazepam if other medications are not available

- For managing **cough** at the end of life in children with COVID-19:

Reversible causes	• Health professionals to use PPE at all times • Cover nose and mouth with a disposable tissue when coughing, sneezing, wiping and blowing nose, or cough into your elbow if no tissue available • Dispose of used tissues promptly into clinical waste bin • Clean hands with soap and water after contact with any respiratory secretions
Non-Pharmacological measures	• Oral fluids • Honey and lemon in warm water • Elevate head whilst sleeping
Pharmacological measures	• If history of reactive airways consider salbutamol or ipratropium inhaler/ nebuliser. Metered-dose inhalers are preferred • Suppress cough e.g. with Simple Linctus 5-10mls three to four times a day • For persistent irritable cough – morphine sulphate immediate release solution 30-50% of pain dose. If no cough, reduce and stop after 72 hrs

- For managing **fever** at the end of life in children with COVID-19:

Non Pharmacological measures	• Reduce room temperature • Wear loose clothing • Cool face with a cool flannel or cloth • Keep well hydrated NB Portable fans are not recommended for use during outbreaks of infection
Pharmacological measures	• Paracetamol PO/IV/PR – dose is dependent on age and route

- For managing **delirium** at the end of life in children with COVID-19 infection:

Reversible causes	• Consider reversible causes • Consider increasing pain or hypoxia relief, this may be all that is required to settle the child • Assess and manage a full bladder and/or constipation • Nurse in a calm, peaceful environment with a parent or trusted adult present, avoiding lighting and noise, ideally in familiar surroundings, but this may not be possible due to nursing restrictions • Use senses that are still intact such as hearing (play favourite music, reading stories) and familiar smells (child's own blanket or soft toy) • Ensure effective communication and reorientation and provide reassurance e.g. ask the family to use touch etc.
Pharmacological measures	**First line: Haloperidol** By mouth • ***Child 1 month–17 years:*** 10–20 micrograms/kg every 8–12 hours; maximum 5 mg twice a day. By continuous IV or SC infusion • ***Child 1 month–11 years:*** Initial dose of 25 micrograms/kg/24 hours (initial maximum 1.5 mg/24hrs). • ***Child 12–17 years:*** Initial dose of 1.5 mg/24 hours. **Second line: Levomepromazine** By Mouth • ***Child 2-11 years:*** Levomepromazine 50-100 micrograms/kg twice a day PRN • ***Child 12-17 years:*** Levomepromazine 3mg twice a day PRN (max dose 25mg/dose) By continuous subcutaneous or intravenous infusion over 24hours: • ***Child 1 year–11 years:*** Initial dose of 350 micrograms/kg/24 hours (maximum initial dose 12.5 mg), increasing as necessary up to 3 mg/kg/24 hours • ***Child 12–17 years:*** Initial dose of 12.5mg/24 hours increasing as necessary up to 200 mg/24 hours. By SC or IV injection: • ***Child 12–17 years:*** Initial dose of: o Child <35 kg as required dose 2.5 mg given once or twice daily. o Child >35 kg as required dose 5 mg given once or twice daily. Chlorpromazine is an option in countries where haloperidol and levomepromazine are not available.

The Association of Paediatric Palliative Medicine Master Formulary is available here as a free download, for drug doses and use of medications in children's palliative care. It is based on evidence and checked by palliative care specialists and pharmacists up to September 2019 (available in English, Ukrainian and Russian)

Engage with your team to ensure comfort is the priority as children approach the end of life. Please ensure written orders reflect this. Unmanaged symptoms at the time of death will add to the distress of the child, family members and clinical staff.

References

- APPM/NHS (2020) Clinical guidelines for children and young people with palliative care needs in all care settings during the coronavirus pandemic.
- DFTB. (2020) DFTB COVID-19 Evidence Review for Children 3rd April 2020.
- Verity R, Okell LC, Dorigatti I, Winskill P, Whittaker C, Imai N et al. (2020) Estimates of the severity of coronavirus disease 2019: a model-based analysis. The Lancet Infectious Diseases. March 30th 2020. DOI: https://doi.org/10.1016/S1473-3099(20)30243-7

Authors

Downing J (ICPCN), Jassal S (Rainbows Hospice), Ambler J (Umduduzi), Chambers L (Together for Short Lives) Daniels A (ICPCN), Doherty M (University of Ottawa), Drake R (Starship Children's Health), Ferguson J (Together for Short Live), Kiman R (University of Buenos Aires), Lacerda A (Portuguese Institute of Oncology, Lisbon Centre), Muckaden MA (Tata Memorial Centre), Nakawesi J (Mildmay Uganda), Okhuysen-Cawley R (Texas Children's Hospital), Palat G (MJN Institute of Oncology, Hyderabad), Phillips M (Perth Children's Hospital), Thompson S (Parent), Vadeboncoeur C (Children's Hospital of Eastern Ontario), Vasudevan C (Bradford Teaching Hospitals).

Disclaimer

These recommendations are for reference and do not supersede clinical judgement.We have attempted to decrease complexity to allow barrier-free use in multiple settings. Evidence supports that appropriate opioid doses do not hasten death when used appropriately; reassess dosing as child's condition or level of intervention changes.