

Summary Guidelines for Management of Severe and Life-Threatening Bronchiolitis

All severe cases should be reviewed by senior paediatrician and/or anaesthetist.

Assessment

Moderate disease: Sats < 92% in air + ↑HR, ↑RR, respiratory distress, poor feeding. **Manage as per appropriate local / national paediatric guidelines such as NICE.**

Severe disease: FiO₂ > 0.5 to maintain Sats > 92%, ↑HR, ↑RR, severe recession, frequent apnoeas (>2/h) but not needing bagging.

Life-threatening disease: Sats < 88% despite high flow oxygen, respiratory acidosis (pH<7.25) despite CPAP / BiPAP, marked recession, exhaustion, grunting, apnoea needing bagging or frequent with desaturations.

Monitor

Heart rate, RR, pulse oximetry. Paediatric Early Warning Scores.
Strict fluid balance. Blood gas measurement, serum biochemistry.

Following discussion with NWTs, Paediatric Ward management could include

Refer to decision algorithm (Page 4) of guideline

Ensuring upper airway patency / nasal suction
Use humidified mask or head box oxygen or humidified high flow nasal cannula (HFNC) therapy.
Aim for saturations above 92%.

Consider nebulised medications (**d/w NWTs**). **Not routinely recommended.** If using, monitor for objective signs of improvement, if no response escalate supportive Rx. **[Stop if not helpful].**
On demand nebulised medications may be better than fixed schedule

Restrict to $\frac{2}{3}$ rd maintenance.
Consider antibiotics if indicated.
Consider caffeine (20mg/kg as caffeine citrate) for recurrent apnoeas.

Indications for CPAP or HFNC O₂

- Clinical – severe disease not improving or getting worse with initial treatment
- Biochemical – respiratory acidosis (pH < 7.25) on blood gas. *Note some chronic lung disease patients may have high PCO₂ but normal pH.*

Indications for intubation

- Features of life threatening illness (**Page 4, Algorithm**)
- Worsening hypercarbia with respiratory acidosis despite non-invasive support.
- Hypoxia despite high flow oxygen with or without CPAP.

Management after intubation

Keep well sedated (standard sedation policy).
CXR to visualise ET tip.
Start antibiotics (if not already started)
Maintain neuromuscular blockade for transport.
Adopt lung protective strategy:

- Limit Peak Inspiratory Pressures (< 30).
- Use PEEP (5 – 10 depending on oxygenation).
- Avoid rates > 30, to avoid gas trapping.
- Tidal volume 5-7ml/kg.
- Aim for I:E ratio at least 1:2.
- Aim for saturations > 92% and permissive hypercarbia as long as pH > 7.25.

Specific complications to be aware of: (Page 9)

Difficult CO₂ clearance needing high ventilatory pressures will improve with ET 0.9% saline instillation, suction and physiotherapy.
Hyponatremia—appropriate fluid therapy
Severe airway obstruction and chest hyperinflation may need chest decompression, trial of bronchodilators.

Transport considerations

Keep sedated and paralysed.
ET suction prior to departure.
Confirm gas exchange acceptable on transport ventilator.
Use ET CO₂ monitoring through out journey.
If deteriorates en route consider specific bronchiolitis related complications.

Date of Approval: 16th September 2016

Date of Review: 16th September 2019

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