

Clinical Guideline

WATCH – BRONCHIOLITIS

SETTING	Wales and West Acute Transport for Children (WATCH)
FOR STAFF	WATCH Team, South West and Wales District General Hospital medical and nursing teams.
PATIENTS	Infants in district general hospitals with known or suspected bronchiolitis

GUIDANCE

Bronchiolitis is a seasonal respiratory viral illness affecting babies and children under two and is most prevalent in the first year of life, peaking between 3-6 months of age. The incidence is highest from October to March in the UK. Symptoms usually peak from days 3-5 of the illness, but can persist for 14 days or more. A summary guideline can be found on page 2 and is available on the WATCH website (www.watch.nhs.uk).

GLOSSARY	CPAP Continuous Positive Airway Pressure ETT Endotracheal Tube HFNC High Flow Nasal Cannula (Oxygen therapy) NG/OG Nasogastric/orogastric PEEP Positive End Expiratory Pressure PIP Peak Inspiratory Pressure
RELATED DOCUMENTS	WATCH Intubation checklist WATCH securing and management of endotracheal tubes
AUTHORISING BODY	WATCH governance group
SAFETY	Call the WATCH team for advice and support.
QUERIES	0300 0300 789

BRONCHIOLITIS

RISK FACTORS FOR SEVERE ILLNESS	INDICATIONS FOR INTUBATION
Age <6 weeks (corrected gestational age) Premature (<35 weeks) or low birth weight (<2.5kg) Pre-existing lung or heart disease Neuromuscular weakness Immunodeficiency Trisomy 21	Refractory hypoxia Hypercapnia despite maximal HFNC/CPAP (pH <7.25) Apnoea Exhaustion (clinical assessment)
DIFFERENTIAL DIAGNOSIS	INTUBATION
Sepsis, especially if temperature $\geq 39^{\circ}\text{C}$ Bacterial pneumonia Recurrent viral wheeze Pertussis Inherited disorder of metabolism Underlying cardiac condition, particularly if: absent femoral pulses, murmur, hepatomegaly, sweating	Pre-oxygenate; ensure monitoring (including ETCO_2) is attached. Use an intubation checklist. Site and aspirate gastric tube (diaphragm splinting can impede ventilation) and ideally 2 points of iv access For induction we recommend Ketamine (1-2mg/kg), Fentanyl (1microgram/kg) and Rocuronium (1mg/kg)
INVESTIGATIONS	Use cuffed UNCUT ETT – ensure cuff is inflated once airway secured.
NPA for respiratory viruses, COVID swab Capillary blood gas CXR, FBC, CRP, blood cultures only if diagnostic concern e.g. persistent pyrexia or $\text{FiO}_2 > 0.5$	
WARD/HDU MANAGEMENT	POST INTUBATION MANAGEMENT
<p>Respiratory: Monitor for desaturation, exhaustion or apnoea Maintain saturations >92% using humidified oxygen (headbox or face mask) Nasal suction if secretions are increasing respiratory distress Start high flow nasal cannula therapy at 2 L/kg/min or CPAP 5-6 cmH_2O if $\text{FiO}_2 > 0.5$ or moderate respiratory distress In older infants where there is diagnostic uncertainty, a trial of bronchodilator is reasonable but this should only be repeated if there is a clear response.</p> <p>Nutrition and hydration Unless intubation is considered likely, give 2-3 hourly NG/OG milk feeds restricted to 100mL/kg/d If intubation is likely, give intravenous fluids with glucose restricted to 80mL/kg/d</p> <p>Neurology Prone positioning, with cot inclined at 45 degrees – ensure infant is monitored Minimal handling Where agitation is worsening respiratory distress, consider either a small dose of Chloral Hydrate (up to 20mg/kg) or very small volume (e.g. 5ml/kg) comfort feeds via NG/OG.</p> <p>Microbiology Antibiotics have no role in uncomplicated bronchiolitis, however if severely unwell consider treatment for bacterial pneumonia according to local protocols</p>	Maintain sedation with Morphine infusion (start at 20mcg/kg/h) +/- Midazolam (start at 100 mcg/kg/h), and muscle relax with Rocuronium infusion. CXR – aim to secure with ETT tip around T2 (or midway between clavicles and carina) Minimise dead space in circuit – consider filter size Blood gas within 15 minutes, aim for targets: <ul style="list-style-type: none"> - Saturations >92% - pH 7.2-7.3 Ventilator settings <ul style="list-style-type: none"> - Inspiratory time 0.6-1 second depending on age - Rate <30 breaths/min – ensure sufficient expiratory time for lung emptying - PEEP 6 - Adjust PIP to ETCO_2 – keep tidal volumes <10mL/kg if possible Site arterial and central venous access if haemodynamically unstable – if stable post intubation and 2 peripheral cannulas in situ additional access is not necessary for transfer Insert urinary catheter
	TROUBLESHOOTING
	Exclude circuit/equipment problem by disconnecting patient from the ventilator and hand-ventilating (check for ETCO_2 to confirm ETT position) Aspirate air from NG/OG Consider dead space in circuit and reduce where possible Ensure expiratory time on ventilator is sufficient – watch for gas trapping (consider using flow loops if available) Clinical +/- radiological assessment for pneumothorax/lobar collapse ET suction to clear secretions