Community-acquired pneumonia (children and young people)

Presentation

Child or young person aged under 18 with community-acquired pneumonia presenting to **primary care** or **hospital.**

In children and young people, severity of pneumonia is assessed by **clinical judgement.**

Antibiotics

In **hospital**:

- Start antibiotic treatment as soon as possible after establishing a diagnosis and within 4 hours of presentation to hospital.

When choosing antibiotics, take account of:

- the severity of symptoms or signs in children and young people
- the risk of complications, for example, a relevant comorbidity (such as severe lung disease or immunosuppression)
- local antimicrobial resistance and surveillance data (such as flu and Mycoplasma pneumoniae infection rates)
- recent antibiotic use
- previous microbiological results, including colonisation with multi-drug resistant bacteria.

Give oral antibiotics first line if the person can take oral medicines, and the severity of their condition does not require intravenous antibiotics.

If intravenous antibiotics are given, review by 48 hours and, if possible, consider switching to oral antibiotics to complete the course.

Microbiology

For children and young people with severe community-acquired pneumonia:

- consider blood cultures if there are additional clinical indications such as suspected sepsis (see NICE's guideline on sepsis) and
- consider sputum cultures, if possible and age appropriate, taking into account their history of antibiotic treatment, their clinical trajectory, the presence of any comorbidities, any recent hospitalisation and the likelihood of getting a good quality sputum sample
- do not routinely use urinary antigen tests.

Treatment and recovery

Explain to parents or carers of children with community-acquired pneumonia that after starting treatment their child's symptoms should steadily improve, although the rate of improvement will vary and some symptoms will persist after stopping antibiotics.

For most children:

- fever (without use of antipyretics) and difficulty breathing should have resolved within 3 to 4 days
- cough should gradually improve but may persist for up to 4 weeks after discharge and does not usually require further review if the child is otherwise well.

Advise parents or carers of children with community-acquired pneumonia to seek further advice if there is persisting fever combined with:

- increased work of breathing or
- reduced fluid intake for children or poor feeding for infants or
- unresolving fatigue.

Definitions

Severe community-acquired pneumonia in babies, children and young people is a diagnosis made by the treating physician.

Features of this may include:

- difficulty breathing
- oxygen saturation less than 90%
- raised heart rate
- grunting
- severe chest indrawing
- inability to breastfeed or drink
- lethargy
- reduced level of consciousness.

Note that percutaneous oxygen saturation monitors may be inaccurate in people with pigmented skin.

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Choice of antibiotic: children and young people under 18 years	
Antibiotic	**Dosage and course length**
Children under 1 month: refer to paediatric specialist	
First-line oral antibiotic if non-severe symptoms or signs	
Amoxicillin	1 to 2 months, 125 mg three times a day for 5 days 3 to 11 months, 125 mg three times a day for 3 days 1 to 4 years, 250 mg three times a day for 3 days 5 to 11 years, 500 mg three times a day for 3 days 12 to 17 years, 500 mg three times a day for 5 days (higher doses can be used for all ages - see BNFC)
Alternative oral antibiotics if non-severe symptoms or signs, for penicillin allergy or if amoxicillin unsuitable (for example, atypical pathogens suspected)	
Clarithromycin	1 to 2 months: • under 8 kg, 7.5 mg/kg twice a day for 5 days 3 months to 11 years: • under 8 kg, 7.5 mg/kg twice a day for 3 days • 8 to 11 kg, 62.5 mg twice a day for 3 days • 12 to 19 kg, 125 mg twice a day for 3 days • 20 to 29 kg, 187.5 mg twice a day for 3 days • 30 to 40 kg, 250 mg twice a day for 3 days 12 to 17 years, 250 mg to 500 mg twice a day for 5 days
Erythromycin (in pregnancy)	8 to 11 years, 250 mg to 500 mg four times a day for 3 days 12 to 17 years, 250 mg to 500 mg four times a day for 5 days
Doxycycline	12 to 17 years, 200 mg on first day, then 100 mg once a day for 4 days (5-day course in total)

Choice of antibiotic: children and young people under 18 years, continued	
Antibiotic	**Dosage and course length**
First-line antibiotic(s) if severe symptoms or signs	
Co-amoxiclav	Oral doses: • 1 to 11 months, 0.5 ml/kg of 125/31 suspension three times a day for 5 days • 1 to 5 years, 10 ml of 125/31 suspension three times a day or 0.5 ml/kg of 125/31 suspension three times a day for 5 days (or 5 ml of 250/62 suspension) • 6 to 11 years, 10 ml of 250/62 suspension three times a day or 0.3 ml/kg of 250/62 suspension three times a day for 5 days • 12 to 17 years, 500/125 mg three times a day for 5 days Intravenous doses: • 1 to 2 months, 30 mg/kg two times a day • 3 months to 17 years, 30 mg/kg three times a day (maximum 1.2 g per dose three times a day) **PLUS ONE of the following 2 options if atypical pathogens suspected**
clarithromycin	Oral doses: see left column for clarithromycin, all for 5 days Intravenous doses: 1 month to 11 years, 7.5 mg/kg twice a day (maximum 500 mg per dose); 12 to 17 years, 500 mg twice a day **OR**
erythromycin (in pregnancy)	8 to 17 years, 250 mg to 500 mg four times a day for 5 days
Alternative antibiotics if severe symptoms or signs, for penicillin allergy (guided by microbiological results when available): consult local microbiologist	

Notes

For **all antibiotics**: see BNFC for use and dosing in hepatic impairment, renal impairment, pregnancy and breast-feeding, and administering intravenous (or, where appropriate, intramuscular) antibiotics. The age bands apply to children of average size and, in practice, the prescriber will use the age bands in conjunction with other factors such as the severity of the condition being treated and the child's size in relation to the average size of children of the same age. Give oral antibiotics first-line if the person can take oral medicines, and the severity of their condition does not require intravenous antibiotics. Stop antibiotic treatment after 5 days unless microbiological results suggest a longer course length is needed or the person is not clinically stable.

For **antibiotics if atypical pathogens suspected:** Mycoplasma pneumoniae infection occurs in outbreaks approximately every 4 years and is more common in school-aged children.

For **intravenous antibiotics**: review by 48 hours and consider switching to oral antibiotics if possible.

For **erythromycin:** erythromycin is preferred if a macrolide is needed in pregnancy, for example, if there is true penicillin allergy and the benefits of antibiotic treatment outweigh the harms. See the Medicines and Healthcare products Regulatory Agency (MHRA) Public Assessment Report on the safety of macrolide antibiotics in pregnancy.

For **doxycycline:** See BNFC for use of doxycycline in children under 12.

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