

Clinical reviews

Our panel of GPs review recent research papers in their specialist areas that may influence the way you practise

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Paediatrics

When should antibiotics be prescribed for LRTIs in children?

Amoxicillin for uncomplicated chest infections in children is unlikely to be clinically effective, a double-blind, randomised, placebo-controlled trial in primary care has found. The study authors recommend that unless pneumonia is suspected, clinicians should provide safety-netting advice but not prescribe antibiotics for most children presenting with chest infections.

Between November 2016 and March 2020, children aged six months to 12 years presenting with an acute uncomplicated lower respiratory tract infection (LRTI) were enrolled in the study from 56 general practices across England. Inclusion criteria were an acute uncomplicated LRTI judged to be infective in origin, where pneumonia was not suspected clinically, with symptoms for less than 21 days. Children who were immunocompromised or had received antibiotics within the past 30 days were excluded.

A total of 438 children, 54% boys, median age 3.2 years, were randomly assigned to either the active arm (n = 222) and received amoxicillin 50 mg/kg/day for seven days or the control group (n = 216) and received

placebo. Parents were asked to keep a daily symptom diary. Nonresponders were followed up by a short questionnaire by post or a telephone call. All patients were reviewed after one month at the practice.

The primary outcome was the duration of symptoms. Secondary outcomes included severity of symptoms, reconsultation rates, complications, side effects of medication, and adherence to treatment.

Complete data for the primary outcome was available for 161 children in the active treatment group and 156 in the placebo group. The median duration of moderately bad or worse symptoms was similar in both groups, 5 days in the antibiotic group vs 6 days in the placebo group, hazard ratio (HR) 1.13 (95% CI: 0.90-1.42).

Neither the presence of fever, chest signs, sputum or chest rattle, shortness of breath nor physician rating of being unwell modified the effect of treatment on duration of moderately bad or worse symptoms.

There was, however, a small but significant difference between the groups with regard to symptom severity on days 2-4. This amounted to less than 1 in 3 children rating symptoms a 'slight problem' rather than a 'very little problem'. Overall, the time for symptoms to disappear was similar.

Reconsultation rates for new or worsening symptoms were 30% in the antibiotic group and 38% in the placebo group; risk ratio 0.80 (95% CI: 0.58-1.05). The numbers for complications and hospital admission rates were similarly low in both groups. Side effect rates were also similar. Microbiological samples showed a similar pattern of organisms in each group.

Overall, 47% (47/101) of parents in the antibiotic group and 39% (33/84) in the placebo group who responded thought that their child had received antibiotics.

The study authors conclude: 'Similar

to adults, antibiotics are unlikely to make a clinically important difference to the symptom burden for uncomplicated lower respiratory tract infections in children - both overall, and for the key clinical subgroups where antibiotic prescribing is most common.

'Unless pneumonia is suspected, clinicians should provide so-called safety-netting advice (i.e., explain what illness course to expect and when it would be necessary to reattend) but not prescribe antibiotics for most children presenting with chest infections.'

There has been little evidence previously on the effects of antibiotics in children presenting with moderately bad symptoms of uncomplicated non-pneumonic LRTI. This advice is helpful in the clinical decision making on whether or not to prescribe antibiotics in such children. My only concern with implementing this advice in practice is that these children were all given medication or placebo to take. In a clinical setting no prescription would be given and I wonder if this might affect outcomes in terms of likely reconsultation rates at the very least.

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Little P, Francis NA, Stuart B et al. Antibiotics for lower respiratory tract infection in children presenting in primary care in England (ARTIC PC): a double-blind, randomised, placebo-controlled trial. Lancet 2021 Published Online September 22, 2021