CLIPPINGS

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Antimicrobial therapy for pediatric community-acquired pneumonia – The SAFER randomized clinical trial (JAMA Pediatr. 2021;175:475-482)

Optimum antibiotics duration for community-acquired pneumonia (CAP) is not established, with lot of variation in management practices. Short-Course Antimicrobial Therapy for Paediatric Respiratory Infections (SAFER) Trial, a non-inferiority randomized clinical trial, was conducted in 281 children (6 months to 10 years) at the emergency departments of two pediatric emergency departments in Canada to determine non-inferiority of 5 days high-dose amoxicillin compared to 10 days regimen in uncomplicated CAP being managed on outpatient basis. Primary outcome was clinical cure at 14 to 21 days (defervescence within the first 4 days, no more than 1 additional fever spike after day 4, improvement in work of breathing, resolution of tachypnea and no need for additional antibiotics/hospital admission). Secondary outcomes included duration of absence from school/daycare, caregiver work disruption, mild/serious adverse drug reactions, adherence and recurrence. Per-protocol (PP) analysis revealed clinical cure in 88.6% children in the 5-day arm vs 90.8% in the 10-day arm (risk difference -0.016, 97.5% CI –0.087). In intention-to-treat (ITT) analysis, clinical cure was seen in 85.7% in the 5-day arm vs 84.1% in the 10-day arm (risk difference 0.023; 97.5% confidence limit –0.061). Median caregiver absenteeism was shorter in intervention group than control group (2 days vs 3 days). Though noninferiority could not be concluded in PP analysis, ITT analysis found short-course treatment to be statistically noninferior, concluding that 5-day course may be non-inferior to 10-day course. An ongoing multicenter, randomized superiority trial Short Course vs Standard Course Outpatient Therapy of CAP in children (SCOUT-CAP) will provide further evidence for the same.

The influence of chest *X*-ray results on antibiotic prescription for childhood pneumonia in the emergency department (Eur J Pediatr. 2021;180:2765–772)

This study was done to evaluate influence of chest *X*-ray (CXR) results on antibiotic prescription in children suspected of lower respiratory tract infections (LRTI) in the emergency department (ED) and included 597 children (1 month to 5 years) with uncomplicated LRTI. Fifty five percent were hospitalized and 30% were prescribed antibiotics. CXR was done in 18% children and showed focal infiltrates in 48%, diffuse or perihilar findings in 28% and no abnormality in 24%. Of the 48% showing focal infiltrate on the CXR, all but nine received antibiotics. More than half (56%) of the children with diffuse/perihilar or no abnormalities on CXR received antibiotic treatment. Overall 69% children prescribed CXR received antibiotics compared to 21% who were not. CXR as part of the diagnostic work-up was associated with more frequent antibiotic prescription and this association remained after correcting for hospital variation, clinical signs and symptoms and result of the CXR. The study showed that antibiotic prescription decisions depend on the physician's overall clinical assessment rather than CXR result. Routine use of CXR in non-complicated LRTI in ED should be discouraged.

Antibiotic therapy versus no antibiotic therapy for children aged 2 to 59 months with WHO-defined non-severe pneumonia and wheeze (Cochrane Database Syst Rev. 2021;1:CD009576)

Current WHO guidelines recommend treating non-severe pneumonia, defined as acute episode of cough or difficulty in breathing with fast breathing and/or chest indrawing, with oral antibiotics. However, pneumonia is more commonly caused by viruses that do not warrant antibiotic therapy. This systematic review was done to evaluate efficacy of antibiotic therapy versus no antibiotic therapy for children aged 2-59 months with WHO-defined non-severe pneumonia and wheeze. Three multi-centre, double-blind, randomised, placebo-controlled trials carried out in Malawi, Pakistan, and India, involving 3256 children with non-severe pneumonia with wheeze were included for analysis. Children were treated with a three-day course of amoxicillin or placebo. Primary outcomes were clinical cure and treatment failure while secondary outcomes were relapse, mortality and treatment harms. Antibiotic therapy resulted in no difference to clinical cure (RR 1.02, 95% CI 0.96 to 1.08; 1 trial; 456 participants; moderate-certainty evidence), relapse (RR 1.00, 95% CI 0.74 to 1.34; 3 trials; 2795 participants; low- certainty evidence) and treatment harms (RR 0.81, 95% CI 0.60 to 1.09; 3 trials, 3253 participants; low-certainty evidence). Though the results showed reduction of treatment failure by 20% (RR 0.80, 95% CI 0.68 to 0.94; 3 trials; 3222 participants) in intervention group, certainty of evidence was found to be low. So authors concluded that we do not have enough evidence to support or challenge continued use of antibiotics for treatment of non-severe pneumonia with wheeze.

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