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Practice Recommendations from Key Studies

More than 12 weeks needed for x-ray resolution of pneumonia in the elderly

El Solh AA, Aquilina AT, Gunen H, Ramadan F. Radiographic resolution of community-acquired bacterial pneumonia in the elderly. J Am Geriatr Soc 2004; 52:224–229.

CLINICAL QUESTION

How long does it take pneumonia to resolve radiographically in elderly patients?

BOTTOM LINE

Among elderly patients hospitalized with radiographically confirmed pneumonia, approximately 75% will demonstrate resolution by 12 weeks. Patients with comorbid conditions and more than 1 involved lobe have slower radiographic resolution. (LOE=**1b**)

STUDY DESIGN

Cohort (prospective)

SETTING

Inpatient (any location) with outpatient follow-up

SYNOPSIS

In this study, patients aged 70 years and older hospitalized with pneumonia were eligible if they had new radiographic infiltrates accompanied by a temperature above 38°C or below 35°C—symptoms suggestive of lower respiratory tract illness—and the isolation of a bacteriologic pathogen from a sterile site, or had positive serology for atypical bacteria.

The researchers excluded patients who were immunocompromised, had been recently hospitalized, had received antibiotics before enrollment, those treated inadequately after admission, patients with tuberculosis, those who ultimately were diagnosed with something other than pneumonia, and patients who died within 3 weeks of enrollment.

The 74 eligible patients underwent standardized clinical evaluations and had serial chest x-rays every 3 weeks for 12 weeks or until the abnormalities resolved or returned to baseline. A pulmonologist and a radiologist, each blinded to the patient's clinical condition and underlying diagnosis, independently reviewed each chest radiograph. Their agreement, as measured by a kappa of 0.6, was fair, but they resolved any differences in interpretation by consensus.

The authors had complete follow-up on 64 (86%) of the patients. After 3 weeks, 35% of the radiographs were normal; 58% were normal by 6 weeks; 68% by 9 weeks; and 76% at the end of 12 weeks. After adjusting for other factors that

What is a POEM?

Each month, the POEMs (Patient-Oriented Evidence that Matters) editorial team reviews 105 research journals in many specialties, and selects and evaluates studies that investigate important primary care problems, measure meaningful outcomes, and have the potential to change the way medicine is practiced. Each POEM offers a Bottom Line observation and summarizes the study's objective, patient population, study design and validity, and results. InfoPOEMs, InfoRetriever and POEMS for Primary Care are registered trademarks of InfoPOEM, Inc. POEMS and Patient-Oriented Evidence that Matters are trademarks of InfoPOEM, Inc. These POEMs are copyrighted by, and published with the express permission of InfoPOEM, Inc. and may not be copied or otherwise reproduced without the prior written consent of InfoPOEM, Inc.

might explain persistence of findings, the researchers found that having multiple comorbid conditions and having multiple lobes involved were the main independent risk factors for persistence. Curiously, the authors don't tell us how long it took for the pneumonia to resolve clinically. Too bad.

Data on treating bronchiolitis severely limited

King VJ, Viswanathan M, Bordley WC, et al. Pharmacologic treatment of bronchiolitis in infants and children: a systematic review. Arch Pediatr Adolesc Med 2004; 158:127–137.

CLINICAL QUESTION

How effective are the various treatments for bronchiolitis?

BOTTOM LINE

In spite of the large number of studies assessing treatments for bronchiolitis, in general the studies have been small, of poor quality, and don't assess clinically important endpoints. The treatments may be effective, however, just unproven. To really judge their effectiveness, we'd need large, well-designed studies that include clinically important outcomes. Until then, bronchiolitis treatment is in the "can do, but not required" category—there are few "musts" or "must nots," so don't obsess about overtreatment or undertreatment. (LOE=**1a–**)

STUDY DESIGN

Systematic review

SETTING

Various (meta-analysis)

SYNOPSIS

The authors systematically reviewed Medline and the Cochrane Collaboration Database of Controlled Clinical Trials for randomized controlled trials published in English that assessed the effectiveness of various treatments for bronchiolitis. They used an explicit and reasonable set of search terms and did a limited search for unpublished data.

The team assessed the quality of each study with disagreements adjudicated by consultation and consensus. The authors reported on 44 studies of the most commonly used agents: epinephrine, beta-2-agonist bronchodilators (albuterol and salbutamol), corticosteroids, and ribavirin. They found a handful of studies evaluating inhaled helium, RSV-immunoglobulin, Chinese herbs, and so forth, but chose not to report these data in the paper. (If readers are interested, these are reported in an AHRQ Evidence Report at www.ahrq.gov/clinic/evrptfiles.htm#bronch.) In general, most studies were quite small, of limited quality, looked at short-term improvement, and failed to assess clinically important outcomes.

Racemic epinephrine was studied against beta-2-agonists in 8 randomized controlled trials of 660 infants. Five of these studies assessed hospitalization, only 2 reported either fewer admissions or shorter stays. Most of the 13 studies of nebulized beta-2-agonists had multiple treatment arms: saline placebos, unspecified placebos, ipratropium, and oral agents, for example.

Seven of the studies assessed hospitalization, none reported meaningful differences in rate or duration. Four studies evaluated oral corticosteroids and found no consistent effect on hospitalizations or duration of stay. Parenteral corticosteroids had no effect on clinical outcomes. In 10 randomized controlled trials of ribavirin (Copegus, Rebetol), the overall study quality was low. Of the 5 studies reporting on clinically important outcomes, 4 failed to demonstrate any effect on rate of hospitalization, length of stay, duration of illness, or use of intensive treatment.

The sole study finding a benefit (on use of intensive treatment) used sterile water as the placebo. But since sterile water can induce bronchospasm, thereby making ribavirin appear more effective, this study has been criticized.