
No decrease in x-rays for infants with bronchiolitis, despite guidelines



Current guidelines recommend against routine x-rays for infants with bronchiolitis, a viral lower respiratory tract infection that often lands babies in the hospital. Despite the guidelines, an analysis of emergency department visits in the United States suggests no decrease in the rate of x-rays from 2007 to 2015, with nearly half of children under 2 with bronchiolitis still getting imaging.

The findings published online in JAMA suggest that nationwide quality initiatives are still needed to translate bronchiolitis guidelines into practice.

Clinical practice guidelines of the American Academy of Pediatrics (AAP), published in 2006 and revised in 2014, recommend against routine radiography in the evaluation of infants with bronchiolitis. Unnecessary imaging for bronchiolitis contributes to healthcare costs and radiation exposure, and consequently was identified in 2013 as a national "Choosing Wisely" priority.

Data from the National Hospital Ambulatory Medical Care Survey (NHAMCS) were used for this study. Researchers restricted their analysis to the NHAMCS ED data set (approximately 30,000 visits to 300 randomly selected U.S. EDs) and included children younger than 2 years with an ED discharge/admitting diagnosis of bronchiolitis. Survey-weighting procedures were used to estimate annual frequency of radiography overall and in subgroups of admitted and discharged patients. Multivariable logistic regression was performed adjusting for patient- and ED-level covariates.

Between 2007 and 2015, there were 269,721 unweighted ED visits in the NHAMCS, of which 59,921 were for children younger than 18 years. Among these, 612 (1.1% [95% CI, 0.9%-1.3%]; range, 53-75 observations annually) had an ED diagnosis of bronchiolitis. Median age was 8 months, 58.8% were male, 66.9% were white, and the majority presented to nonteaching and nonpaediatric hospitals.

The mean proportion of patients who were diagnosed as having bronchiolitis and received radiography was 46.1% (95% CI, 39.5%-52.8%). There was no change in the proportion of infants undergoing radiography by year (P for trend = .87), as confirmed in multivariable analysis (adjusted odds ratio for effect of year, 0.99 [95% CI, 0.91-1.08]). Among ED visits, 89.7% of patients were discharged and 10.3% were admitted.

Restricting analysis to ED-discharged patients similarly revealed overall radiography use of 46.2% (95% CI, 39.4%-53.2%), which did not differ from the proportion among admitted children (44.8% [95% CI, 29.2%-61.6%]; P = .83). Using multivariable analysis, higher rates of imaging were associated with nonpaediatric hospitals and race identity other than black or white.

"Assuming study visits can be projected to reflect the U.S. population, there would have been an estimated 2.92 million paediatric ED visits for bronchiolitis over the 9-year study period," the researchers write. "In this broad ED context, radiography was performed in nearly half of bronchiolitis cases, and more frequently at nonpaediatric hospitals."

Study limitations include a lack of clinical data to determine the appropriateness of radiographic imaging, which may differ depending on physician experience. However, the researchers note that AAP guidelines recommend imaging only in severe cases that warrant intensive care or suggest the possibility of airway complication, which is unlikely for ED-discharged patients.

Source: JAMA

reference

Burstein B, Plint AC, Papenburg J (2018) Use of Radiography in Patients Diagnosed as Having Acute Bronchiolitis in US Emergency Departments, 2007-2015. JAMA 320(15): 1598-1600. Available online 16 October 2018. <https://doi:10.1001/jama.2018.9245>
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