Infectious Disease

Cost of Influenza Hospitalization at a Tertiary Care Children’s Hospital and Its Impact on the Cost-Benefit Analysis of the Recommendation for Universal Influenza Immunization in Children Age 6 to 23 Months

PURPOSE OF THE STUDY. To calculate the costs of influenza hospitalization at a tertiary care children’s hospital as the basis of a cost/benefit analysis of the new influenza vaccine recommendation for children 6 to 23 months old.

STUDY DESIGN. The investigators reviewed the medical charts of all patients diagnosed with influenza and admitted to Children’s Memorial Hospital in Chicago, Illinois, in 2002. Total hospital costs were obtained from the business development office.

RESULTS. Thirty-five charts were analyzed. Both of the 2 patients who required mechanical ventilation and 4 of the 6 patients admitted to the ICU had high-risk underlying medical conditions. Nine children were 6 to 23 months old; 4 of these 9 had no preexisting medical conditions. Had all 18 high-risk children over 6 months old been protected from influenza, approximately $350,000 in hospital charges could have been saved.

CONCLUSIONS. Preventing the additional 4 hospitalizations in the otherwise low-risk children 6 to 23 months old for whom vaccine was currently recommended would have cost approximately $281,000 ($46 per child) more than the hospital charges saved. When all children 6 to 23 months old were considered, influenza vaccination would have been less costly than other prophylactic measures. Addition of indirect costs, deaths, outpatient costs, and the cost of secondary cases would favor the cost/benefit ratio for influenza vaccination of all children 6 to 23 months old.

REVIEWER COMMENTS. A few years ago when recommendations were made to immunize all children 6 to 23 months of age with the influenza vaccine, they were not initially accepted with open arms because of an already-busy infant-immunization schedule. This article provided interesting data regarding actual charges of hospitalization for care of children with influenza. Analyzing the ages and underlying medical conditions of these children, as well as using conservative estimates of vaccine efficacy and only direct costs of hospitalization, the investigators predicted substantial cost savings from vaccinating children with underlying medical conditions and modest spending ($46 per child) when vaccinating healthy children 6 through 23 months of age. Recognized limitations of the investigation included extrapolation of findings from a tertiary care center and underrepresentation of children without underlying conditions. Hopefully, in the future, we will have more data such as these that will be useful in assessing the cost/benefit ratio of influenza vaccination recommendations in pediatric patients.

Wait-and-See Prescription for the Treatment of Acute Otitis Media: A Randomized Controlled Trial
Spiro DM, Tay KY, Arnold DH, Dziura JD, Baker MD, Shapiro ED. JAMA. 2006;296:1235–1241

PURPOSE OF THE STUDY. Acute otitis media (AOM) is the most common diagnosis for which antibiotics are prescribed for children. Previous trials that have evaluated a “wait-and-see prescription” (WASP) for antibiotics, with which parents are asked not to fill the prescription unless the child either is not better or is worse in 48 hours, have excluded children with severe AOM. None of these trials were conducted in an emergency department. The purpose of this study was to determine if treatment of AOM using a WASP significantly reduces use of antibiotics compared with a standard prescription (SP) and to evaluate the effects of this intervention on clinical symptoms and adverse outcomes related to antibiotic use.

STUDY POPULATION. Children with AOM aged 6 months to 12 years seen in an emergency department in 1 year.

METHODS. A randomized, controlled trial was conducted; patients were randomly assigned to receive either a WASP or an SP. All patients received ibuprofen and otic analgesic drops for use at home. A research assistant who was blinded to group assignment conducted structured telephone interviews 4 to 6, 11 to 14, and 30 to 40 days after enrollment to determine outcomes and monitor filling of the antibiotic prescription and clinical course.

RESULTS. Overall, 283 patients were randomly assigned to either the WASP (n = 138) or SP (n = 145) group. Substantially more parents in the WASP group did not fill the antibiotic prescription (62% vs 13%; P < .001). There was no statistically significant difference between the groups in the frequency of subsequent fever, otalgia, or unscheduled visits for medical care. Within the WASP group, both fever (relative risk: 2.95; 95% confidence interval: 1.75–4.99; P < .001) and otalgia (relative risk: 1.62; 95% confidence interval: 1.26–2.03; P < .001) were associated with filling the prescription.
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