

CLINICAL DECISIONS



Treatment of a 6-Year-Old Girl with Vesicoureteral Reflux — Polling Results

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In late July, we presented the case of a 6-year-old girl with persistent bilateral vesicoureteral reflux in *Clinical Decisions*,¹ an interactive feature designed to assess how readers would manage a clinical problem for which there may be more than one appropriate approach to the care of the patient. A urinary tract infection was diagnosed in the patient at 1 year of age, and bilateral vesicoureteral reflux was identified during the initial evaluation. The patient subsequently had occasional fevers but no additional documented urinary tract infections. Her family moved frequently, resulting in fragmented care. Readers were asked to decide among three treatment options — watchful waiting without antibiotics, continuous antimicrobial prophylaxis, and repair of the vesicoureteral reflux.

A total of 1073 votes from 82 countries were cast. Most voters were from North America, although Europe and Asia also had large voter turnouts. (The distribution of the 1030 votes that could be attributed to a continent or region is shown on the interactive map.) Fifty percent of the voters advocated watchful waiting, and 43% opted for surgical repair. Only 7% elected antibiotic prophylaxis.

The breakdown of reader comments generally reflected the voting trends. Many of those opting for watchful waiting indicated a reluctance to subject a healthy child without any signs of renal insufficiency to either antibiotic therapy or an invasive procedure. Some readers noted the paucity of definitive data regarding antibiotic prophylaxis, despite the data cited by the expert who argued for continuous antibiotic prophylaxis.²⁻⁴ Many readers emphasized concerns about

increased bacterial resistance. Others commented on the absence of evidence of renal damage or scarring thus far, as well as the possibility that the patient's reflux would simply resolve on its own. Many who chose watchful waiting proposed follow-up evaluations that included the possibility of surgical repair should the child's condition worsen.

Many of the readers who advocated immediate surgical repair mentioned the lack of follow-up due to frequent family moves, as well as the potential complications associated with the long-term use of antibiotics. Some readers noted the ease and efficacy of the surgical procedure and the appeal of a potentially permanent resolution for the vesicoureteral reflux. Others mentioned that although renal damage might not have been evident in this patient, there are concerns that current imaging techniques are insufficient to reveal subtle scarring. Furthermore, although the patient had only one documented urinary tract infection, she had had recurrent febrile episodes without a clear source, which led some readers to advocate surgical repair as a definitive management strategy.

Finally, the few voters opting for antibiotic prophylaxis seemed most comfortable with a middle ground, given the risks associated with both the conservative and the definitive management options. They noted that all antibiotics are not equally efficacious and that care must be taken when selecting the most appropriate antibiotic for this child. Although the benefits of antibiotic prophylaxis in this population are debatable, more conclusive evidence is expected from the ongoing Randomized Intervention for Chil-

dren with Vesicoureteral Reflux study (RIVUR; ClinicalTrials.gov number, NCT00405704), sponsored by the National Institutes of Health, which is comparing antibiotic prophylaxis (trimethoprim-sulfamethoxazole) with placebo in children with vesicoureteral reflux and a history of urinary tract infections.⁵

The votes and comments reflect the current opinions about the management of young children with vesicoureteral reflux, which is often identified in the course of an initial evaluation of urinary tract infection. As the voting pattern seen here reflects, a growing number of clinicians have been questioning the wisdom of long-term antibiotic prophylaxis. There are no clear data on outcomes to support one management strategy over another. In the absence of robust data to guide management decisions, many read-

ers gave heavy weight to the patient's social situation in choosing among watchful waiting without antibiotics, continuous antimicrobial prophylaxis, and surgical repair of the vesicoureteral reflux.

Disclosure forms provided by the authors are available with the full text of this article at NEJM.org.

1. Alon US, Hoberman A, Dairiki Shortliffe LM. Treatment of a 6-year-old girl with vesicoureteral reflux. *N Engl J Med* 2011;365:266-70.
2. Craig JC, Simpson JM, Williams GJ, et al. Antibiotic prophylaxis and recurrent urinary tract infection in children. *N Engl J Med* 2009;361:1748-59. [Erratum, *N Engl J Med* 2010;362:1250.]
3. Brandström P, Esbjörner E, Herthelius M, Swerkersson S, Jodal U, Hansson S. The Swedish reflux trial in children. III. Urinary tract infection pattern. *J Urol* 2010;184:286-91.
4. Hoberman A, Keren R. Antimicrobial prophylaxis for urinary tract infection in children. *N Engl J Med* 2009;361:1804-6.
5. Keren R, Carpenter MA, Hoberman A, et al. Rationale and design issues of the Randomized Intervention for Children with Vesicoureteral Reflux (RIVUR) study. *Pediatrics* 2008;122:Suppl 5:S240-S250.

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