Rochester Criteria Modified for Better Sensitivity

BY ROBERT FINN
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SAN FRANCISCO — A new, large study has concluded that the Rochester criteria—for determining which febrile infants are at low risk of having a serious bacterial infection—are not as sensitive as once thought.

But with a modification that adds information about the infant's age and viral status, the sensitivity and negative predictive value of the Rochester criteria can be maintained, Dr. Carrie L. Byington said at the annual meeting of the Pediatric Academic Societies.

The prospective cohort study involved 1,779 febrile infants 1-90 days of age. Dr. Byington and her colleagues from the University of Utah, Salt Lake City, analyzed these cases according to the original Rochester criteria, and also evaluated several possible modifications of the criteria.

Developed from data collected in the 1970s and 1980s from 233 infants, the 15 Rochester criteria are based on patient history, physical examination, and laboratory values. Infants with no positive criteria are said to have only a 1.4% risk of serious bacterial infection, while infants with one or more positive criteria are considered to be at high risk, having a 21% chance of serious bacterial infection.

But the Rochester criteria can be unwieldy, and Dr. Byington noted that many physicians routinely make decisions based on factors that are not part of the criteria, such as the patient's age and viral status.

In the original studies, the Rochester criteria were said to have a sensitivity of 95.7% and a negative predictive value of 99.3%. But in this series of infants seen in Salt Lake City, the Rochester criteria yielded a sensitivity of 90% and a negative predictive value of 97%. By the original criteria, 33% of the infants were said to have a low risk of serious bacterial infection, and 67% were said to have a high risk. As it turned out, only 10% of the infants, whose average age was 31 days, had a serious bacterial infection.

The investigators determined that four of the criteria were significantly associated with serious bacterial illness. They were:

- A urinalysis with more than 10 white blood cells per high-power field (odds ratio 38.8).
- An absolute band count greater than 1,500 (odds ratio 2.7).
- A white blood cell count of less than

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Routine Interval Appendectomy Unnecessary?

HILTON HEAD ISLAND, S.C. — Interval appendectomy may be unnecessary after a bout of medically managed appendicitis in children, Dr. Devin Puapong said at the annual meeting of the American Pediatric Surgical Association.

Surgeons often cite a high risk of recurrence as the primary reason for an elective interval appendectomy. But according to Dr. Puapong of the Kasier Permanente Los Angeles Medical Center, "Recurrence of appendicitis after initial nonoperative treatment is very uncommon and not associated with any major complications. We feel [interval appendectomy] may not be necessary."

Dr. Puapong conducted a retrospective study of Kaiser's medical records database, which included 6,446 children treated for appendicitis from 1992 to 2002.

Of those, only 72 were initially managed with medical therapy; 11 went on to have an interval appendectomy, and the other 61 were observed. The length of stay in the observed patients was significantly longer (15 days vs. 7 days).

Over a mean follow-up of 7.5 years, there were only five recurrences of appendicitis (a rate of 8%). All recurrences occurred within 1 year and most were within 2-3 months, Dr. Puapong said.

Four of the recurrences were in patients who presented with an initial abscess, but because of the small number, the association was not statistically significant. Nor were age, gender, type of initial appendicitis, and drainage of initial abscess significantly associated with recurrence. No major complications were observed in any of the patients with recurrence, although two were found to have a prolonged ileum.

—Michele G. Sullivan