

which have not been studied in children. Gold therapy has been used for decades in children without serious long-term side effects. Certainly the patient in my case report responded extremely well to gold therapy without side effects.

As is true for most of the diseases we treat, the therapeutic modalities for treating juvenile rheumatoid arthritis remain in evolution.

Ronald W. Chapman, MD, MPH
Shasta Cascade Family Practice Residency
Redding, CA

References

1. Giannini EH, Brewer EJ, Miller ML, Gibbs D, Passo MH, Hoyerall HM, et al. Ibuprofen suspension in the treatment of juvenile rheumatoid arthritis. Pediatric Rheumatology Collaborative Study Group. *J Pediatr* 1990; 117:645-52.
2. Mulberg AE, Linz C, Bern E, Tucker L, Verhave M, Grand RJ. Identification of nonsteroidal antiinflammatory drug-induced gastroduodenal injury in children with juvenile rheumatoid arthritis. *J Pediatr* 1993; 122:647-9.
3. Giannini EH, Brewer EJ, Kuzmina N, Shaikov A, Maximov A, Vorontsov I, et al. Methotrexate in resistant juvenile rheumatoid arthritis. Results of the USA-USSR double-blind, placebo-controlled trial. The Pediatric Rheumatology Collaborative Study Group and the Cooperative Children's Study Group. *N Engl J Med* 1992; 326:1043-9.
4. Groothuis H. Current pediatric diagnosis and treatment. 12th ed. E. Norwalk, CT: Appleton & Lange, 1994.

Fever in Infants and Children

To the Editor: It was with great interest that I read the article by Grubb, et al., "Management of Infants and Children 0-36 Months of Age with Fever without Source," published in the March-April 1995 issue of the *JABFP*.¹ Evaluation of children with fever without a source represents one of the most common and yet difficult clinical problems encountered by physicians caring for children. The search for a time- and cost-effective technique that will enable us to detect all children with a serious bacterial illness, but exclude the many more who do not, is akin to searching for the Holy Grail. Despite our efforts, there is not a tried and true method that will work for everyone.

Although the authors accomplished their critique of the guidelines published by Baraff, et al.,² they did not appear to be familiar with the vast pediatric literature devoted to the evaluation of the child with fever without a source. I have attempted to monitor this literature for more than a dozen years, and I would like to make the following comments:

1. Fever is defined as an elevation of body temperature above the normal range. That range varies according to the child's age, time of day (diurnal variation), and environmental factors, such as exposure to a radiant heat source. Although the expert panel defined fever as 38°C (100.4°F) rectally, a temperature of 39°C (102°F) is used for action steps. Teele, et al.'s classic study of 600

febrile children aged 4 weeks to 2 years old did not find any child with a rectal temperature of less than 38.9°C (102°F) who had bacteremia.³

2. Toxicity is certainly in the eyes of the beholder. The Acute Illness Observation Scale developed by McCarthy, et al.⁴ is perhaps the best known scale used to quantitate the degree of illness (toxicity). The sensitivity of this scale for detecting serious illness when coupled with the history and physical is approximately 90 percent.^{4,5} In younger infants aged 4 to 8 weeks, the sensitivity of this method decreased to less than 50 percent for detecting serious bacterial illness.⁶
3. Baskin, et al.⁷ treated 503 febrile infants aged 28 to 89 days with intramuscular ceftriaxone following cultures of the blood, urine, and cerebrospinal fluid. All 27 infants with bacteremia had their infection eradicated or contained within 24 hours without sequelae. Jaffe, et al.⁸ found that although the administration of oral amoxicillin reduced fever and improved the clinical appearance of children with bacteremia, it did not reduce the incidence of major infectious sequelae. In a randomized comparison with ceftriaxone, amoxicillin-potassium clavulanate produced more diarrhea and less clinical improvement during 24 hours, although both were believed to be effective methods of treatment.⁹ At issue is when it is appropriate to use ceftriaxone. I believe it is inappropriate to use it in all nontoxic-appearing children aged 3 to 36 months with fever $\geq 39.0^{\circ}\text{C}$, because the vast majority will have viral infections. I therefore favor option 2 described by Baraff, et al.² in the care of febrile children aged 3 to 36 months.

I also agree that it is unacceptable to obtain blood cultures in all previously healthy children aged 3 to 36 months with temperatures 39°C or higher who do not appear toxic. Before the passage of the Clinical and Laboratory Improvement Amendment regulations, a screening finger-stick white cell count could be obtained and determined by hemocytometer in our office within 15 minutes. Because this test now qualifies as a complex procedure, few physicians are allowed to perform it. If the clinician thinks the child is sick enough to warrant a white cell count, a blood culture should probably be obtained at the same time.

Although I have not addressed all the issues raised by Grubb, et al., there are considerable data behind the clinical guidelines to support their rationale.

Sanford R. Kimmel, MD
Toledo, OH

References

1. Grubb NS, Lyle S, Brodie JH, Gunderson II, Johnson B, Michels F, Berg AO. Management of infants and children 0 to 36 months of age with fever without source. *J Am Board Fam Pract* 1995; 8:114-9.

2. Baraff LJ, Bass JW, Fleisher GR, Klein JO, McCracken GH Jr, Powell KR, et al. Practice guidelines for the management of infants and children 0 to 36 months of age with fever without source. *Pediatrics* 1993; 92:1-12.
3. Teele DW, Pelton SI, Grant MJ, Herskowitz J, Rosen DJ, Allen CE, et al. Bacteremia in febrile children under 2 years of age: results of cultures of blood of 600 consecutive febrile children seen in a "walk-in" clinic. *J Pediatr* 1975; 87:227-30.
4. McCarthy PL, Sharpe MR, Spiesel SZ, Dolan TF, Forsyth BW, DeWitt TG, et al. Observation scales to identify serious illness in febrile children. *Pediatrics* 1982; 70:802-9.
5. McCarthy PL, Lembo RM, Fink HD, Baron MA, Cicchetti DV. Observation, history, and physical examination in diagnosis of serious illnesses in febrile children \leq 24 months. *J Pediatr* 1987; 110:26-30.
6. Baker MD, Avner JR, Bell LM. Failure of infant observation scales in detecting serious illness in febrile, 4- to 8-week-old infants. *Pediatrics* 1990; 85:1040-3.
7. Baskin MN, O'Rourke EJ, Fleisher GR. Outpatient treatment of febrile infants 28 to 89 days of age with intramuscular administration of ceftriaxone. *J Pediatr* 1992; 120:22-7.
8. Jaffe DM, Tanz RR, Davis AT, Henretig F, Fleisher G. Antibiotic administration to treat possible occult bacteremia in febrile children. *N Engl J Med* 1987; 317: 1175-80.
9. Bass JW, Steele RW, Wittler RR, Weisse ME, Bell V, Heisser AN, et al. Antimicrobial treatment of occult bacteremia: a multicenter cooperative study. *Pediatr Infect Dis J* 1993; 12:466-73.