Alternate Acetaminophen, Ibuprofen to Treat Fever

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A child’s fever can be reduced more quickly and safely by alternating acetaminophen and ibuprofen instead of administering either agent alone, according to Dr. E. Michael Sarrell and his colleagues at Tel Aviv University. About 19%-30% of all visits to primary care pediatrics are on account of fever, and acetaminophen and ibuprofen are the most commonly prescribed therapeutics to bring elevated temperatures down. According to Dr. Sarrell and his colleagues, “Antipyretic use therefore plays a major role in daily pediatric practice, and it must be both effective and safe.”

As a consequence, they designed a study to determine which agent—or if both intermittently—may be more effective. In a double-blind, controlled clinical trial of 464 children aged 6-36 months with a fever of at least 38.4°C presenting at one of three pediatric centers in Israel were randomized to 12.5 mg/kg of acetaminophen syrup every 6 hours (154 patients), an ibuprofen suspension of 5 mg/kg every 8 hours (153 patients), or alternating acetaminophen/ibuprofen every 4 hours (195 patients) for a total of 3 days. Within each arm, one-half of the children received an additional 5 mg/kg of acetaminophen or 10 mg/kg of ibuprofen to more quickly attain an effective drug serum concentration. (Arch. Pediatr. Adolesc. Med. 2006; 160:197-202).

The type of loading medication had no effect on children’s response, but the type of maintenance medication did—and significantly so. The alternating regimen reduced children’s fevers more rapidly, led to less stress among children, and required less care during the first 3 days of treatment than either acetaminophen or ibuprofen alone.

For example, one day after initiation of treatment, infants who received the alternating regimen had a 1.07°C drop in temperature (vs. a drop of 0.19°C with acetaminophen and an increase of 0.02°C with ibuprofen), a 52.4% reduction in the number of treatment failures (vs. 11.2% with acetaminophen and 2.2% with ibuprofen). Moreover, only 6% of children who received the alternating treatment experienced a recurrence in fever on day 5 as compared to 21% of children on acetaminophen and 17% of children on ibuprofen. Because their treatment was more effective, children on acetaminophen/ibuprofen missed significantly fewer days of day care (which presumably meant that patients missed fewer days of work) than did children who were on acetaminophen or ibuprofen alone (1.7, 2.6, and 2.5 days, respectively).

No child experienced any serious adverse effects related to treatment, and there were no statistically significant differences between groups for abnormal laboratory values.

The risk of anaphylactic reactions in penicillin-allergic patients is only 0.4% for first-generation cephalosporins and “nearly nil” for certain later-generation agents, which he defined as cefdinir, cefpodoxime, and cefuroxime. “The one we use in dermatology [cefuroxime] appears to have essentially no cross-reactivity with penicillin,” he said in an interview at the conference, which was sponsored by the Center for Bio-Medical Communications Inc.

Dr. Del Rosso noted that the American Academy of Pediatrics has endorsed the use of cefdinir, cefpodoxime, and cefuroxime in penicillin-allergic children, excluding those who have had life-threatening reactions such as anaphylaxis or toxic epidermal necrolysis.