SUBSPECIALIST CONSULT

The Child With Persistent Fever

BY JOSÉ MUÑOZ, M.D.

Ask about fever duration during your history taking. The main question is how to define "persistent." If the fever lasts fewer than 5 days and everything else looks fine, most of the time the child will have whatever illness is going around.

If the fever lasts closer to 10 days, and especially if new symptoms appear, it could be a complication of what is going around. Obviously, once you go beyond 10 days, it is a more significant clinical situation. Then we are in the "fever of unknown origin" (FUO) range, which may require a subspecialist evaluation. The current official definition of FUO is fever lasting greater than 3 weeks with no diagnosis after reasonable outpatient or inpatient evaluation. Shorter episodes of unexplained fever are referred to as "fever without a source." Most of these will resolve spontaneously or evolve into more easily recognized conditions, usually infections.

The best way to proceed really depends on the presentation. The initial evaluation always includes a careful history, physical examination, and screening labs as needed. Start a more thorough evaluation or refer when things are not adding up. How sick does the child look? Are there atypical findings? Remember your training about the typical course of strep throat, mono, or bronchitis—if you see a significant deviation, evaluate the child more thoroughly. Always ask: Do I have a reasonable working diagnosis that I am comfortable with?

Fever is a common symptom and most often is a feature of a routine viral infection. The bigger concern is a serious condition, such as a bloodstream infection; this child needs to get to the emergency room right away. A child with an unusual rash, especially with petechiae and purpura, would need an immediate referral.

Kawasaki disease is another major concern. If you suspect Kawasaki disease, the child needs to be evaluated by a subspecialist. The diagnosis is based on a fever lasting at least 4 or 5 days and associated findings, such as a rash, red strawberry tongue, or very red lips. The patient will need immediate treatment, ideally within 10 days, to minimize the risk for cardiac and coronary inflammation.

Helpful tests include a complete blood count, sedimentation rate, and C-reactive protein assay. Serum chemistries including liver function tests also may be useful. I do a urinalysis and a urine culture because urinary tract infections are common and a common cause of fever. Blood cultures should be considered.

These screening tests can be reassuring. When the clinical evaluation is benign, the white blood cell count is 5,000 cells/mcL with a normal differential; then you can tell the parent to come back in a few days for follow-up. In contrast, if a child with a persistent fever has a white count of 30,000, you really have to be more careful—it could be a sinus infection, pneumonia, or bacteremia. The other extreme, a child with a white blood count of 1,000, also requires more careful evaluation.

The pace of evaluation depends on how ill the child is, any associated findings, and whether one has a diagnosis or not. Time is your ally when the child is not very ill; watchful waiting will often reveal the nature of the problem.

It is important to take a good travel history. We saw a child with malaria last year, and the key to recognition was the history of a recent return from Ghana. Also ask about animal exposures and if anyone else at home is sick. Those can be important clinical clues for diagnosis of a child with prolonged fever.

Consider the time of year. A test that is not useful, but is often obtained, is a Lyme disease test. Lyme is rarely a cause of prolonged fever, especially in winter. Also, sometimes an extensive evaluation for autoimmune disease is performed too early in the diagnostic process. If you do an initial evaluation and do not have a diagnosis, and the fever persists, then you can move on to secondary and tertiary evaluations, such as you would with an FUO. Also, tests for mono are ordered way too often. The diagnosis of mono depends on more than a prolonged fever, and there are some very specific associated features, such as tonsils that look awful, large cervical nodes, and a palpable spleen.

Make sure the fever is real. Sometimes we see a child who reports persistent fever but is afebrile during each clinical visit. In this case, ask the parents how they take the child's temperature. Do they use a thermometer strip, or do they just touch the child and say the child feels warm? There should be some documentation of a persistent fever before you embark on additional, expensive evaluation.

Occasionally I have a child come to see me who is referred with say, 25 days of fever. Does the child really have one prolonged fever? It is more likely two different episodes—a child has illness No. 1, then a break, followed by illness No. 2. Use the history and clinical findings to distinguish between these two scenarios. ■

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Repeat Teen Pregnancy Prevention Program Cost Effective

BY MARY ANN MOON

A computer-assisted intervention known to reduce the number of rapid repeat pregnancies in adolescent mothers was found to be cost effective as well as clinically effective, according to a report.

The program had the greatest impact among the most disadvantaged teen mothers, who are at the highest risk of rapidly becoming pregnant again, and it was particularly cost effective in this segment of the population.

"Only a handful of experimentally evaluated teenage pregnancy–prevention interventions have been subject to examination of costs and benefits," said Dr. Beth Barnet of the University of Maryland, Baltimore, and her associates.

"This study offers an effective model for reducing births to teenagers, particularly in high-risk subgroups, and is worthy of consideration for replication by state and national policy leaders," they concluded.

In a previous randomized, controlled trial of the computer-assisted motivational intervention (CAMI), Dr. Barnet and her team found that it reduced the rate of rapid repeat pregnancy by 45%.

In the current study, they conducted an economic analysis of the intervention in a cohort of 235 adolescents who were seen at five urban prenatal clinics for an index pregnancy.

More than 95% of the study cohort was black, and 42% had dropped out of school. Nearly 40% obtained health coverage (predominantly Medicaid) for the first time in their lives because of the pregnancy.

For the intervention, counselors met with each patient in her home soon after delivery and used a laptop computer with customized software that was aimed at gauging reproductive health risks and behaviors, motivations to avoid pregnancy, and short-term and long-term life goals.

Motivational counseling was then provided to encourage the girls to avoid pregnancy, highlighting the discrepancies between the girls' stated goals and their current behavior.

For example, many girls stated that they didn't want another child until they were adults, yet they continued to have sex without using contraception. Most stressed that they wanted to complete school and get a good job, yet they had dropped out and were not taking steps to resume their education.

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The counseling sessions were repeated every 3 months until the index child turned 2 years old. In all, 87 adolescent mothers were randomly assigned to receive this CAMI intervention. Another 80 mothers were assigned to an enhanced CAMI intervention (CAMI-plus) that added monthly home visits and extra activities, such as counselor-guided parenting classes; help with housing, day care, school, and health care issues; and skills training for handling daily challenges such as abusive relationships and drug trafficking within the home.

A third group of 68 girls who did not take part in a CAMI intervention served as a control group.

Participants who took part in either of the CAMI programs were significantly less likely to give birth again within 2 years, compared with the controls subjects (odds ratio, 0.47).

Although participants in the regular CAMI group were less likely than control participants to have a subsequent pregnancy (OR, 0.56), the difference between the groups was not significant.

The per-participant costs of the regular CAMI and the intensive CAMI programs were $1,449 and $2,735, respectively, Dr. Barnet and her colleagues said (Arch. Pediatr. Adolesc. Med. 2010;164:370-6).

Either form of CAMI, normalized to 100 adolescents, prevented 12 repeat births at a cost of $17,388 per patient. The more intensive CAMI was even more effective, preventing 14 teenage births per 100 adolescents, but at a slightly higher cost at $19,247 per patient.

"Our findings suggest that CAMI is at least as" cost effective as other programs "and warrants replication in larger samples," the investigators said. ■

Disclosures: *This study was supported by the U.S. Department of Health and Human Services. Dr. Barnet's associate reported receiving funding from Amylin Pharmaceuticals Inc., AHIMA Foundation, Bayer Pharmaceuticals, Bristol-Myers Squibb Co., Genentech Inc., GlaxoSmithKline, Eli Lilly & Co., Merck & Co., Novartis, Pfizer Inc., Sanofi-Aventis, and Elan Pharmaceuticals Inc.*