WHO's Pneumonia Study Tops Journal Articles

Take-home message: If a child with pneumonia is not toxic, oral rather than intravenous therapy is adequate.

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ASPEN, COLO. — A World Health Organization study conducted in eight developing countries tops an expert's annual list of the most important journal articles for physicians treating pediatric infectious diseases.

"Basically, what it showed was, in a child with pneumonia who is not toxic, you never need to treat with an IV. You can treat orally," Michael Radetsky, M.D., said at a conference on pediatric infectious diseases sponsored by Children's Hospital, Denver.

The nonblinded study (Lancet 2004;364:1141-8) randomized 1,702 children, aged 3-59 months, who were hospitalized with severe pneumonia. About half received oral amoxicillin for 48 hours; the rest were given parenteral penicillin.

Both regimens in the study—oral and injectable—had the same rate of treatment failure: 19% at 48 hours.

Emmanuel Addo-Yobo, M.D., of the Amoxicillin Penicillin Pneumonia International Study group interpreted the outcome as evidence that oral amoxicillin is equivalent to injectable penicillin.

Dr. Radetsky, a consultant in pediatric infectious diseases and clinical professor at the University of New Mexico in Albuquerque, also recommended the following articles:

Sensitivity of Rapid Strep Tests

M. Bruce Edmonson, M.D., and Kathryn R. Farwell at the University of Wisconsin Medical School in Madison reviewed 1,184 consecutive Rapid Antigen Detection Tests in a single pediatric clinic (Pediatrics 2005;115:280-5).

Their study compared test results to the pretest clinical likelihood of group A streptococcal pharyngitis, as calculated in a blinded chart review.

The investigators found the test's sensitivity reflected the likelihood that a patient had a group A infection. Sensitivity was high in patients younger than 15 years of age who had tonsillar exudate without a cough. It was low in patients with a McIsaac score of 2 or less.

"The accuracy of a rapid strep test goes up when you think they have strep throat. The accuracy goes down when you don't think it is strep. So it's not a good test to do in the in-between child," Dr. Radetsky said, advising physicians to skip the test and order a culture when they are wavering or responding to circumstances, such as a sibling infected the previous week.

Infant Hyperpyrexia

Hyperpyrexia is a rare event that might be a risk factor for serious bacterial infection in infants less than 3 months old, according to Rachel Stanley, M.D. (Pediatr. Emerg. Care 2005;21:291-4).

Dr. Stanley of the University of Michigan, Ann Arbor, and her coauthors from Children's Hospital, Boston, reviewed 5,279 infants younger than 3 months who were brought to an urban emergency department with triage temperatures of 38° C or higher. Only 98 patients (1.7%) had hyperpyrexia, which was defined as a rectal temperature of 40° C or greater. More than a third of that group, 35 infants, was diagnosed with serious bacterial infections, the most common of which was urinary tract infections in 24 infants.

The authors suggested that future management algorithms might list high fever as a risk factor for serious infection. Managing high fevers in young infants is a challenge that keeps physicians awake at night, according to Dr. Radetsky. "I love this article because it takes this fear and gives body to the fear," he said. "It says, yes, you should be concerned about it … and, yes, children can be seriously ill, but it's very rare."

New Acute Otitis Media Paradigm

Because 80% of acute otitis media infections respond spontaneously, some physicians have called on their colleagues to delay antibiotics for 3 days in selected children who are assured clinical follow-up. Thomas F.X. Fisher, M.D., of the State University of New York at Stony Brook, and his coauthors surveyed 654 parents and 84 pediatricians about the proposed paradigm (Pediatr. Emerg. Care 2005;21:170-2).

The researchers found 53% of the parents and 73% of the physicians were "somewhat comfortable to very comfortable" with deferring antibiotics. Comfort levels increased with knowledge of the evidence, but 61% of parents did not know antibiotics could have adverse effects; 72% did not know research supported selective use of antibiotics.

Although many physicians and parents appeared open to the new recommendations, the authors noted that half the pediatricians routinely prescribed antibiotics for all cases of acute otitis media.

"What this means is, we have some work to do," Dr. Radetsky said, calling for greater effort to educate physicians and parents. Nonetheless, he described himself as heartened by the level of physician acceptance: "It's miraculous."

Antipyretic Effects on Measured Fever

Febrile infants often receive antipyretics at home before being brought to the emergency department, according to a prospective study that enrolled 474 infants with fever or a history of fever from Aug. 24, 2000 to Dec. 31, 2001 (Arch. Pediatr. Adolesc. Med. 2004;158:972-6).

Investigators Shirley Y. Huang, M.D., and David S. Greenes, M.D., of Children's Hospital in Boston were surprised to find significantly higher measured temperatures in 187 infants who had been given antipyretics before arriving in the emergency department, compared with 287 infants who had not been pretreated.

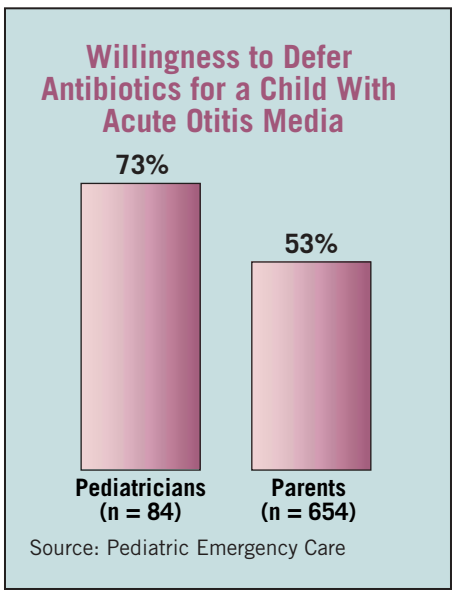
Although parents reported giving fever reducers to 40% of study population, it turned out that the doses often were inadequate. Only 10% had received a therapeutic dose 1-5 hours prior to coming to the emergency department, according to the authors. Dr. Radetsky said the article addresses a common conundrum: how to manage a child after a parent reports antipyretic use.

"The results of the article are that even if you have a history of having Motrin or Tylenol, it doesn't alter what you measure," he said. "You can trust your measurement. No fever is no fever. The management decision should depend on what you measure at the time you do the evaluation."

Pulse Oximetry, Bronchiolitis Discharge

Dependence on pulse oximetry readings can delay discharge of infants hospitalized for bronchiolitis, reported Alan R. Schroeder, M.D., and his associates at the University of California, San Francisco (Arch. Pediatr. Adolesc. Med. 2004;158:527-30).

The retrospective chart study found 16 of 62 infants were kept in the hospital an average of 1.6 days until they reached a pulse oximetry goal despite having met all other criteria for discharge. The authors detected trends toward younger age, lower oxygen saturations at admission and discharge, and increased number of cutoffs in oxygen saturation among the patients with prolonged stays.



They could not determine whether the prolonged stays were beneficial or harmful, however. They noted wide variability among institutions in the setting of minimum saturation levels.

Dr. Radetsky warned against "the tyranny of the continuous pulse oximeter." He said pediatricians should use it in the office when deciding whether to hospitalize a patient; once the infant is admitted, however, he said to use it sparingly, especially in stable or improving patients.

"When you should give oxygen and when you should discharge, no one knows," he said, adding that physicians should "avoid entrapment by data that has no clinical importance."

Diarrhea Etiology Elusive

Stool testing turned up a bacterial pathogen in just 12 (5.3%) of 226 Seattle children enrolled in a prospective study of diarrhea in pediatric outpatient settings (Pediatr. Infect. Dis. J. 2005;24:142-8). Additional screening of smaller subgroups identified 1 child with a parasite, 8 with *Clostridium difficile* toxin, and 16 with viruses.

Donna M. Denno, M.D., of the University of Washington, Seattle, and her associates reported comparable results from two study sites: a private practice and a clinic in a municipal hospital serving a largely immigrant population.

The investigators associated bacterial infection with visible fecal blood, increased stool frequency, abdominal tenderness, and white or red cells in the stool. They noted, however, that 75% of children without a bacterial infection had at least one of these risk factors. Their conclusion: "Exclusion criteria for stool testing in diarrhea remain elusive." Dr. Radetsky said that in most patients, conventional laboratory testing did not turn up a cause. His conclusion: "Stool cultures are infrequently needed in ambulatory practice."

New Treatment for Head Lice

Dale Lawrence Pearlman, M.D., a dermatologist in Menlo Park, Calif., reported a 96% cure rate and 94% remission rate in two open clinical trials of a new treatment for head lice (Pediatrics 2004;114:e275-9).

Dr. Pearlman holds patents for Nuvo lotion, which he tested in 133 children recruited as being hard to treat. He declared Nuvo lotion to be the first in a new class of nontoxic lotions that he called dry-on, suffocation-based pediculides.

The report has drawn an accusation of hype (Lancet 2005;365:8-10), and the product has been likened to hair conditioner, according to Dr. Radetsky. Nonetheless, he held out hope that controlled trials could prove it to be "the up-and-coming treatment of choice."

A new treatment is needed, he said. "Things are not going well for those of us that treat head lice. The success rate is going down. There are failures for head lice all over the place."

A Bacterial Cause of Conjunctivitis?

Investigators from the University of Amsterdam in the Netherlands have come up with a scoring system for predicting a positive bacterial culture in a patient with conjunctivitis (BMJ 2004;329:206-10).

General practitioner Remco P. Rietveld, M.D., and his colleagues have proposed point values for glued eyes in the morning, itch, and history of conjunctivitis. Physicians use a patient's total points, based on a scale of –3 to +5, to calculate the probability of the patient testing positive. Though widely used, purulent secretion is almost diagnostically noninformative, the investigators said.

The cohort study was based on 184 adult patients enrolled from September 1999 to December 2002. Only about a third had a positive culture.

Dr. Radetsky said he included this article in his top 10 list because "there is no pediatric study that helps a practitioner to decide whether something is bacterial conjunctivitis or not."

A similar study of children is needed, he said. Until one is done, this system enables physicians to reduce the use of topical antibiotics, based on the historical information provided. ■