disease prevention news

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Antibiotic Use, Resistance, and Practice Tips

The emergence of drug resistant bacteria is an escalating problem in today's practice of medicine. This is the first in a series of articles on prudent antibiotic use adapted from patient and physician educational materials offered by the Centers for Disease Control and Prevention. Included in this issue are recommendations for the management of rhinitis /sinusitis and answers to questions parents may have. Subsequent issues in this series address cough illness/bronchitis, otitis media, and pharyngitis. The concluding article presents a summary of judicious antibiotic treatment.

Over the past 5 years, the rate of penicillin resistance in *Streptococcus pneumoniae* has increased by more than 300% and the rate of cefotaxime resistance by more than 1000%.[1] In fact, some pneumococci have lost susceptibility to all antibiotics except vancomycin.[1] Antibiotic resistant pathogens now put patients at risk for adverse clinical outcomes. For example, for otitis media, there is a higher risk of treatment failure if the causative organism is not susceptible to penicillin.[2] Recent antibiotic use has also been shown to be a risk factor for invasive disease with nonsusceptible pneumococci.[3]

Injudicious prescribing of antibiotics by physician and inappropriate use by patients are major contributing factors to this problem.[4] Even at prophylactic doses, antibiotic pressure fosters the growth of resistant pathogens.[5] This antibiotic pressure can be relieved by decreasing antibiotic use.[6]

Clinicians should remind their patients that immunization is a front line of defense against primary disease resulting from pneumococcal and *Haemophilus influenzae* infections and against bacterial infection secondary to influenza. Immunization of young children, the elderly, and other high risk groups can prevent bacterial diseases that would otherwise require use of antibiotics for treatments.

Judicious antibiotic use should be a part of routine clinical practice. Clinicians can talk with parents about antibiotic use at 4- and 12-month well-child visits. When parents ask for antibiotics to treat viral infections, clinicians can use the following positive responses:

- Inform parents that only bacterial infections can be cured by antibiotics.
- Explain that viral infections cannot be cured by antibiotics.
- Explain that unnecessary antibiotics can be harmful by promoting resistant organisms.
- Describe the normal course of the disease.
- Convey a sense of partnership—do not dismiss the illness as "just a viral infection."
- Plan treatment of symptoms with parents.

It is also a good idea to create an office environment that promotes the judicious use of antibiotics:

- Start the educational process in the waiting room with videotapes, posters, or other material.
- Involve office personnel in the educational process to change patient attitudes.
- Provide information about nonantibiotic care: proper nutrition and hydration, and use of analgesics, decongestants, and other over-the-counter drugs.

Please join fellow Texans in leading this fight against the emergence of drug resistant bacteria by adopting these practice standards.

Continued☞

Also in this issue:

For additional information contact Olga Nuno, MD, MPH, at (512) 458-7676 or visit the IDEAS website: http://www.tdh.state.tx.us/ideas/ideasweb.htm. *Clicking on "Disease Fact Sheets"at this website accesses patient education materials.*

Adapted by Samantha Anne, MS; Judy Yang, BA; Olga Nuno, MD: Infectious Disease Epidemiology and Surveillance .

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Careful Antibiotic Use

Rhinitis/Sinusitis

Children have up to 9 viral respiratory illnesses per year.[1] In uncomplicated colds, cough and nasal discharge may persist for 14 days or more—long after other symptoms have resolved. Controlled studies do not support antibiotic treatment of mucopurulent rhinitis.[2] Antibiotics do not effectively treat upper respiratory illness (URI), or prevent subsequent bacterial infections.[3]

Diagnosis Criteria

Though most viral URIs involve the paranasal sinuses, only a small minority are complicated by bacterial sinusitis. Avoid unnecessary antibiotic treatment by using strict criteria for diagnosis:

- Symptoms of rhinorrhea or persistent daytime cough lasting longer than 10 to 14 days without improvement

OR

- Severe symptoms of acute sinus infection: fever (>39C°) with purulent nasal discharge, facial pain or tenderness, and periorbital swelling

Management Recommendations

- Target likely organisms with first-line drugs:
  amoxicillin OR
  trimethoprin-sulfa methoxasole[4]

- Use shortest effective course: improvement should be evident in 2 to 3 days. Continue treatment for 7 days after symptoms improve or resolve (usually 10-14 days).[5]

- Consider imaging studies in recurrent or unclear cases. **Remember:** some sinus involvement is frequent early in the course of uncomplicated viral URI, so interpret studies with caution.

Patient Education

Inform parents of the CDC/AAP principles to help them understand the risks of antibiotic treatment. Included in this issue of *DPN* is an adaptation of the CDC patient education pamphlet that explains these principles. (See *Runny Nose*.)

References (Back Page)☞

Questions & Answers for Parents

Runny Nose

Your child has a runny nose. This is a normal part of what happens as the child with a common cold gets better. Here are some facts about colds and runny noses.

What causes a runny nose during a cold?

Cold viruses are the germs that cause colds. The nose produces clear mucus when these germs first infect the nose and sinuses. This mucus helps wash the germs out. After 2 or 3 days, the body's immune cells fight back, and the mucus changes to a white or yellow color. The bacteria that normally live in the nose grow back, changing the mucus to a greenish color. This does not mean your child is infected with bacteria that need antibiotic treatment. It is a normal part of getting over a cold.

How is a runny nose treated?

The best treatment is watchful waiting. The child may be bothered with a runny nose, cough, fever, headache, and or muscle aches. But **antibiotics will not make these discomforts go away sooner**. Some children feel better when their parents use a cool mist vaporizer or give them a decongestant.

Are antibiotics ever needed for a runny nose?

Only if your doctor has diagnosed sinusitis.

Why not take antibiotics now?

Unnecessary antibiotics can be harmful. After each treatment with antibiotics, children are more likely to carry resistant germs in their noses. If bacteria are causing a child's illness, they are very likely to be resistant germs that cannot be killed by the usual antibiotics. The child may need more expensive antibiotics, antibiotics by needle, or even antibiotics in the hospital. Since a runny nose generally gets better on its own, it is wise to wait and give your child antibiotics only when needed.

What should I do?

Be glad that your child has a mild condition that will probably get better with no antibiotics. Your doctor may prescribe medications that will help with the discomfort, but right now, antibiotics are not needed.

Adapted from CDC fact sheet, "Guide for Parents: *Runny Nose"* (USGPO: 1998-733-708/80117)

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TDH Multiple Sclerosis Investigation in El Paso

The Texas Department of Health (TDH) would like assistance in its investigation of multiple sclerosis (MS) among students of two El Paso elementary schools. A number of former students of Mesita Elementary School have been identified as having MS. TDH needs information from students who attended either Mesita or E.B. Jones Elementary at any time during the period of 1948 through 1970.

If you know of any students who attended either of these schools, please ask them to contact Matthew Garabedian, MPH, TDH Bureau of Epidemiology, at (888) 441-1950 or by email: matthew.garabedian@tdh.state.tx.us.