Antibiotic Resistance A Growing Concern For UTIs

As a result of concerns about antibiotic resistance, doctors in the United States are increasingly prescribing newer, more costly and more powerful antibiotics to treat urinary tract infections, one of the most common illnesses in women. New research at Oregon State University suggests that the more powerful medications are used more frequently than necessary, and they recommend that doctors and patients discuss the issues involved with antibiotic therapy – and only use the stronger drugs if really neeeded.
Urinary tract infections are some of the most commonly treated infections in outpatient settings, with cystitis being the most common type. Cystitis is usually caused by *E. coli* bacteria that reside in the gut without causing problems, but sometimes they can cause infection. The OSU research reports that between 1998 and 2009, about two percent of all doctor's office visits by adult women were for this problem, and antibiotics were prescribed 71 percent of the time.

The problem, experts say, is that overuse of the most powerful drugs, especially quinolone antibiotics, speeds the development of bacterial resistance to these drugs. Antibiotic resistance is a natural evolutionary process by which microbes adapt to the selective pressure of medications. Some survive, and pass on their resistant traits. These issues have gained global prominence with the dangerous and life-threatening MRSA bacteria, methicillin-resistant *Staphylococcus aureus*, but experts say resistance is a similar concern in many other bacteria.

"Many people have heard about the issues with MRSA and antibiotic resistance, but they don't realize that some of our much more common and frequent infections raise the same concerns," said Jessina McGregor, an OSU assistant professor of pharmacy and expert in development of drug resistance. Since older, inexpensive and more targeted drugs can work for treating urinary tract infections, they should be considered before the more powerful ones, she said.

"This problem is getting worse, and it's important that we not use the new and stronger drugs unless they are really needed," McGregor said. "That's in everyone's best interests, both the patient and the community. So people should talk with their doctor about risks and benefits of different treatment options to find the antibiotic best suited for them, even if it is one of the older drugs."

McGregor recently presented data at the Interscience Conference on Antimicrobial Agents and Chemotherapy, which showed that prescriptions for quinolones rose 10 percent in recent years, while other drugs that may be equally effective in treating cystitis remained unchanged. "Because of higher levels of antibiotic resistance to older drugs in some regions, some doctors are now starting with what should be their second choice of antibiotic, not the first," McGregor said. "We need to

conserve the effectiveness of all these anti-infective medications as best we can."

Researchers at OSU are developing tools to help physicians select the most appropriate antibiotic for each individual. Additional information such as detailed history of past medication use, knowledge of local community levels of resistance and better doctor-patient communication can help. "Cystitis is incredibly common, but that's part of the reason this is a concern," McGregor said. "It's one of the most common reasons that many women see a doctor and are prescribed an antibiotic. And any infection can be serious if we don't have medications that can help stop it, which is why we need to preserve the effectiveness of all our antibiotics as long as we can."

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