

# An Endorsement for Nitrofurantoin in UTI

*Prevalent resistance to other drugs makes this old standby a cost-effective alternative for urinary tract infections.*

Uncomplicated urinary tract infection (UTI) has become surprisingly complicated to treat in recent years because of growing prevalence of microbial resistance to trimethoprim-sulfamethoxazole (TMP-SMX) and quinolones. Many experts now propose resurrection of the venerable antibiotic nitrofurantoin as a first-line treatment for uncomplicated cystitis.

Mayo Clinic researchers constructed a decision tree to analyze the costs of common empirical antibiotic choices for uncomplicated UTI at different community levels of drug resistance. The model included costs of the drugs and of complications such as requisite retreatment, development of pyelonephritis, and development of vaginal candidiasis.

When 3-day courses of TMP-SMX or a fluoroquinolone were compared with a standard 5-day course of nitrofurantoin, the model indicated that nitrofurantoin became the most cost-effective option when the community's level of TMP-SMX resistance exceeded 17% and its quinolone resistance exceeded 12%. (Below these levels, the 3-day drug with the least resistance was favored.) Recent surveys indicate that TMP-SMX resistance exceeds 15% everywhere in the U.S. and exceeds 40% in some areas; fluoroquinolone resistance is as high as 20% in some regions.

**Comment:** This is the second major shout-out for nitrofurantoin this year. Earlier, the Infectious Diseases Society of America endorsed it as a first-line treatment for cystitis ([JW Infect Dis Feb 23 2011](#)) not because of cost (pill for pill, the drug actually is more expensive than double-strength TMP-SMX) but for efficacy and ecology: Minimal resistance to this drug has developed among Enterobacteriaceae, and, because ingested drug largely stays in the urine, little resistance is likely to evolve. Clinicians should keep this old standby in mind. However, they also should remind themselves of its potential toxicity, which includes idiosyncratic pneumonitis and hemolysis in glucose-6-phosphate dehydrogenase-deficient patients; in addition, the drug is contraindicated when creatinine clearance is <60 mL/minute.

— [Abigail Zuger, MD](#)

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