

Ontario Antimicrobial Stewardship Project

Evidence-Based Summary for Short-Course Antimicrobial Therapy:

Uncomplicated Urinary Tract Infection

A 3-day course of antibiotics is appropriate in adult women with acute lower uncomplicated UTI. Treatment of asymptomatic bacteriuria in non-pregnant women is not required.

Evidence indicates 3 days of antibiotics for acute lower (bladder and ureters) uncomplicated (not catheterized or obstructed) UTI in females has similar clinical outcomes to 5 or more days of antibiotics. Currently, ISDA guidelines support the use of 3-day antibiotic treatment in uncomplicated UTI in women <65 years of age¹. Single-dose treatment is no longer used as analyses indicate this ultra-short duration is associated with higher rates of bacteriological recurrence². Males generally experience complicated UTIs and there is insufficient data to support short-course treatment in this population.

A 2005 Cochrane Collaboration meta-analysis³ comparing effectiveness of various antibiotics used for 3 days with 5 or more days of antibiotic in **females 16 to 65 years of age** included data from > 9000 patients enrolled in 32 trials (between 1980 and 2000). No difference between 3-day and > 5-day treatment was found for short-term symptomatic or bacteriologic failure (RR = 1.06, 95% CI = 0.88 – 1.28, RR = 0.92, 95% CI = 0.80 – 1.06 respectively) by intention-to-treat (ITT) analysis. Also, there was no significant difference between 3-day and > 5-day regimens with respect to recurrence rates at 8 weeks (RR 1.90, 95% CI = 0.94-1.27). When separate classes of antibiotics were compared, the lack of difference in failure rates remained in the short-term symptomatic failure analysis.

Recently, a prospective, randomized open-label trial in 455 pre-menopausal women over 18 years of age compared ciprofloxacin 250mg po q12h x 3 days to TMP/SMX 160/800mg po q12h x 7 days to norfloxacin 400mg po q12h x 7 days⁴. Results indicated short-term symptomatic and bacteriological failure rates were similar between the 3 groups at 5-9 days after antibiotics, as were late recurrence rates of symptoms or bacteriuria at 6-8 weeks after antibiotics.

The Cochrane Collaboration performed a meta-analysis comparing the effectiveness of various antibiotics used for 3-6 days with 7 or more days of antibiotic in **females over 60 years of age**⁵. Endpoints examined failure rates in terms of clinical symptoms and bacteriuria.

Results included data from 15 trials eligible for inclusion published between 1981 and 2005. The authors do not state the number of total number of subjects in these trials but it appears to be >1000. The analysis concluded: Clinically symptomatic failure rates were no different between the short and long-course groups. RR = 0.98, 95% CI=0.62-1.54 and bacteriologic failure rates were not significantly different between the two different duration groups at 2 weeks (RR = 0.85, 95% CI= 0.29-2.47) or longer (RR = 0.85, 95% CI=0.54-1.32).

Asymptomatic bacteriuria with pyuria is not an indication for antibiotic treatment according to ISDA guidelines. The only exceptions are pregnancy and perhaps short-term catheterization where bacteriuria has persisted for more than 48 hours after catheter removal⁶.

References:

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4. Arredondo-Garcia et al. Comparison of short-term treatment regimen of ciprofloxacin versus long-term treatment regimens of trimethoprim/sulfamethoxazole or norfloxacin for uncomplicated lower urinary tract infections: a randomized, multicentre, open-label, prospective study. J Antimicrob Chemo 2004;54:840.
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Acknowledgements:

ISMP Canada gratefully acknowledges the input provided by Katrina Mulherin PharmD and the expert review by (to be determined).