NICE National Institute for Health and Care Excellence

Cystitis: taking an antibiotic
Decision aid: user guide and data sources

Role of the decision aid

Recommendation 1.1.3 from the NICE guideline on lower urinary tract infection: (acute): antimicrobial prescribing states:

1.1.3. Consider a back-up antibiotic prescription (to use if symptoms do not start to improve within 48 hours or worsen at any time) or an immediate antibiotic prescription (see the recommendations on choice of antibiotic) for women with lower UTI who are not pregnant. Take account of:

- the severity of symptoms
- the risk of developing complications, which is higher in people with known or suspected structural or functional abnormality of the genitourinary tract or immunosuppression
- the evidence for back-up antibiotic prescriptions, which was only in non-pregnant women with lower UTI where immediate antibiotic treatment was not considered necessary
- previous urine culture and susceptibility results
- previous antibiotic use which may have led to resistant bacteria
- preferences of the woman for antibiotic use.

Choosing whether to have a back-up antibiotic or an immediate antibiotic prescription is a highly preference-sensitive decision. It involves trading-off the potential for earlier symptom resolution against the risk of side effects and individual and population level antimicrobial resistance.

The NICE decision aid can help healthcare professionals explain and discuss these trade-offs. The person facing the decision can review the written information before deciding.

Developing and updating the decision aid

The decision aid was developed by pharmacists in the NICE Medicines and Technologies Programme and healthcare professionals and lay members of the guideline committee.

NICE decision aids are reviewed as part of the surveillance process for the guidance to which they relate. If the guidance and the relevant recommendations are modified, the decision aid will also be updated.

Sources of data

Effects of back-up versus immediate prescription on symptoms

These data are taken from the randomised control trial by Little et al. (2010) included in the lower UTI guideline. This included 309 non-pregnant women with lower UTI. Women needing immediate antibiotics or with symptoms suggesting pyelonephritis (fever and vomiting) were excluded. Five treatment strategies were investigated; the data for the immediate antibiotic group (n=66) and back-up antibiotic group (n=62) have been used for this decision aid.

There was no statistically significant difference in symptom severity and duration with back-up antibiotics compared with immediate antibiotics. The mean reduction in symptom severity score (mean of a 4-dimension score, each dimension rated 0 to 6, higher scores indicating greater severity) 2–4 days after seeing the health professional was −0.04, 95% CI −0.47 to 0.40 in the back-up group compared with the immediate antibiotic group. The duration of at least moderately bad symptoms was 3.54 days in the immediate antibiotic group and 3.96 days in the back-up group (95% CI 3.01 to 5.20 days). Rates of pyelonephritis were not reported.

Risks of pyelonephritis after lower UTI

The decision aid states that fewer than 1 in 100 normally healthy non-pregnant women with lower UTI develop kidney infections. This is based on data taken from the meta-analysis by Falagas et al. (2009) that was reviewed in the lower UTI guideline. This included 5 randomised controlled trials of antibiotics in 1,407 non-pregnant women with uncomplicated lower UTI. In the 2 RCTs that reported data (n=962), the incidence of pyelonephritis in the group of women who received placebo was 0.75% and lower in those who received antibiotics (RR calculated by NICE 0.33, 95% CI 0.04 to 2.68, p=0.30).

Other adverse effects

Information on common adverse effects of antibiotics was taken from the manufacturers' summary of product characteristics for nitrofurantoin and trimethoprim and the study by Falagas et al. (2009). The NICE clinical knowledge summaries on pyelonephritis and antibiotic-associated diarrhoea were also used.

References

Falagas ME, Kotsantis IK, Vouloumanou EK et al. (2009) Antibiotics versus placebo in the treatment of women with uncomplicated cystitis: a meta-analysis of randomized controlled trials. Journal of Infection 58: 91–102

Little P, Moore MV, Turner S et al. (2010) Effectiveness of five different approaches in management of urinary tract infection: randomised controlled trial. BMJ. 340:c199