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LETTERS

ANTIBIOTIC RESISTANCE IN CHILDREN WITH E COLI URINARY TRACT INFECTION

The need to base empirical antibiotic regimens on clinical cure rates

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The prevalence of antibiotic resistance is important information commonly relied on when choosing empirical antibiotic regimens. But too much is being asked of these laboratory data, which should not dictate empirical antibiotic regimens.

Laboratory determined antibiotic resistance rates are a product of policies for the microbiological testing of infections and antibiotic resistance in the population.[1] This is particularly true for urinary tract infections (UTIs).[2] In the UK urine microbiology is not routinely recommended for patients with good evidence of a UTI.[3] However, it is recommended that UTIs are investigated microbiologically when antibiotic treatment has failed.[3] The potential for biasing of resistance rates is therefore high, making the Infectious Disease Society of America's recommendation against empirical use of an antibiotic with a resistance rate greater than 20% difficult to justify.[4] Indeed, such a policy may exacerbate the problem of antibiotic resistance by unnecessarily increasing the use of broader spectrum antibiotics.

It is important we acknowledge that the best data for choosing empirical antibiotics regimens are not laboratory reported resistance rates but clinical cure rates in the populations the antibiotics are recommended for. Such data are costly to obtain but would not be biased by testing algorithms, limitations over the criteria determining susceptibility and resistance, individual pharmacokinetics, misdiagnosis, and the potential for patients to improve without medical intervention. National antibiotic resistance surveillance programmes do not currently determine clinical cure rates, but these data could help limit the use of broad spectrum antibiotics.

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Full response at: http://www.bmj.com/content/352/bmj.i1399/rr-3.

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2 Russell G. Antibiotic resistance in children with E coli urinary tract infection. *BMJ* 2016;352:i1399. doi:10.1136/bmj.i1399 pmid:26980716.

3 Public Health England and British Infection Association. Guidance for primary care on diagnosing and understanding culture results for urinary tract infection (UTI). 2014. https://www.gov.uk/government/publications/urinary-tract-infection-diagnosis

4 Gupta K, Hooton TM, Naber KG, et al. Infectious Diseases Society of America European Society for Microbiology and Infectious Diseases. International clinical practice guidelines for the treatment of acute uncomplicated cystitis and pyelonephritis in women: a 2010 update by the Infectious Diseases Society of America and the European Society for Microbiology and Infectious Diseases. *Clin Infect Dis* 2011;52:e103-20. doi:10.1093/cid/ciq257 pmid:21292654.

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