Antimicrobial Resistance Programme Bulletin
Increase in E. coli bacteraemias in the elderly population in Wales

INTRODUCTION

This bulletin highlights the increase in Escherichia coli bacteraemias in the elderly population in Wales, and makes recommendations for the treatment of urinary tract infections (UTI) in this group.

E. coli is the commonest organism grown from blood cultures in Wales. The Health Protection Agency reported a 35% increase in E. coli bacteraemia in England, Wales and Northern Ireland between 2007 and 2011, with the highest rate per population in the 65 and over age group.


Welsh surveillance data (Figure 1) shows a small increase in the numbers of E. coli bacteraemias from hospital inpatient locations, but a much greater increase in those from non-inpatient locations. (Note: Non-inpatient locations comprise A&E departments, admission wards, day wards, outpatient clinics, and community locations and therefore blood cultures taken here suggest infection arising in the community.)

The increase in E. coli bacteraemias in Wales is mainly due to increasing numbers in elderly patients (age groups 65-79, and >80 years), particularly elderly patients from non-inpatient locations (see Figure 2); A&E accounted for >50% of the non-inpatient location group.

RESISTANCE RATES

Urinary coliforms: There has been a significant increase in trimethoprim resistance in the 80+ age group in the past 6 years from 34.1% in 2005 to 40.2% in 2011 (Figure 3). At the same time, fluoroquinolone resistance has increased from 9.8% in 2005 to 16.4% in 2011.

The higher levels and recent increases in resistance, particularly to trimethoprim and fluoroquinolones, in urinary coliforms in older age groups may be contributing to the increase in E. coli bacteraemias in the elderly in Wales due to failures of initial empiric therapy.

RECOMMENDATIONS

- Trimethoprim (200mg BD for 3 days in women and 7 days in men) remains a first-line recommendation for uncomplicated urinary tract infection presenting in the community. However, in the elderly, or patients who have received antibiotics within the last 3 months, the likelihood of infection with a resistant organism is higher, and an alternative antibiotic should be considered. Alternatives include:
  - Nitrofurantoin 100mg m/r BD for 3 days in women and 7 days in men (not recommended if renal impairment with GFR <60mL/min).
  - Co-amoxiclav 625mg TDS for 3 days in women and 7 days in men.
  - Pivmecillinam 400mg initially, then 200mg TDS for 3 days in women and 7 days in men.
- Perform culture in the elderly, patients who have received antibiotics within the last 3 months, and all treatment failures.

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FIGURES

Figure 1: E. coli bacteraemias by NHS location type

Figure 2: E. coli bacteraemias from non-inpatient locations by age group

Figure 3: All-Wales trimethoprim resistance rates by age group for coliforms from community urine samples

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