

Comparison of antimicrobial resistance in hospital-acquired and community-acquired bacteraemia

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Introduction: It is widely believed that hospital-acquired infections (HAI) are more often antibiotic-resistant than community-acquired infections (CAI) because hospitals have:

- more intensive antibiotic use
- greater concentration of patients vulnerable to infection
- obvious opportunities for clonal spread.

We compared prevalence of resistance in isolates from patients hospitalised for more than 48 hours (representing HAI) with that in isolates from all other known sources (taken to represent CAI).

Methods. 29 UK and Irish laboratories contributed blood isolates (excluding duplicates within one week) to the BSAC Bacteraemia Resistance Surveillance Programme in 2001 and 2002. MICs were determined centrally by the BSAC agar dilution method.

Abbreviations AMC amoxicillin/ clavulanate, AMX amoxicillin, CAZ ceftazidime, CIP ciprofloxacin, ERY erythromycin, ESBL extended spectrum β -lactamase, GEN gentamicin, IPM imipenem, LZD linezolid, OXA oxacillin, PEN penicillin, TET tetracycline, TZP piperacillin/ tazobactam, CNS coagulase-negative staphylococci, * p<0.05 (exact test).

Results: Charts show % resistance, breakpoints in mg/L, and risk ratios for HAI vs. CAI.

- Resistance rates were higher in HAI than CAI for most antimicrobials; statistically significant differences are highlighted.
- Other significant differences could not be ruled out, as even 200 isolates per group are too few to reliably detect moderate differences where baseline resistance rates are low.
- True differences are likely to be greater than shown here as patients in the CAI group may have been hospitalised previously.

Conclusion: Antimicrobial resistance was more prevalent in hospital-acquired infection than in infections acquired elsewhere. ESBLs were much more prevalent in, but not exclusive to, isolates from patients hospitalised >48 hours.

Acknowledgements

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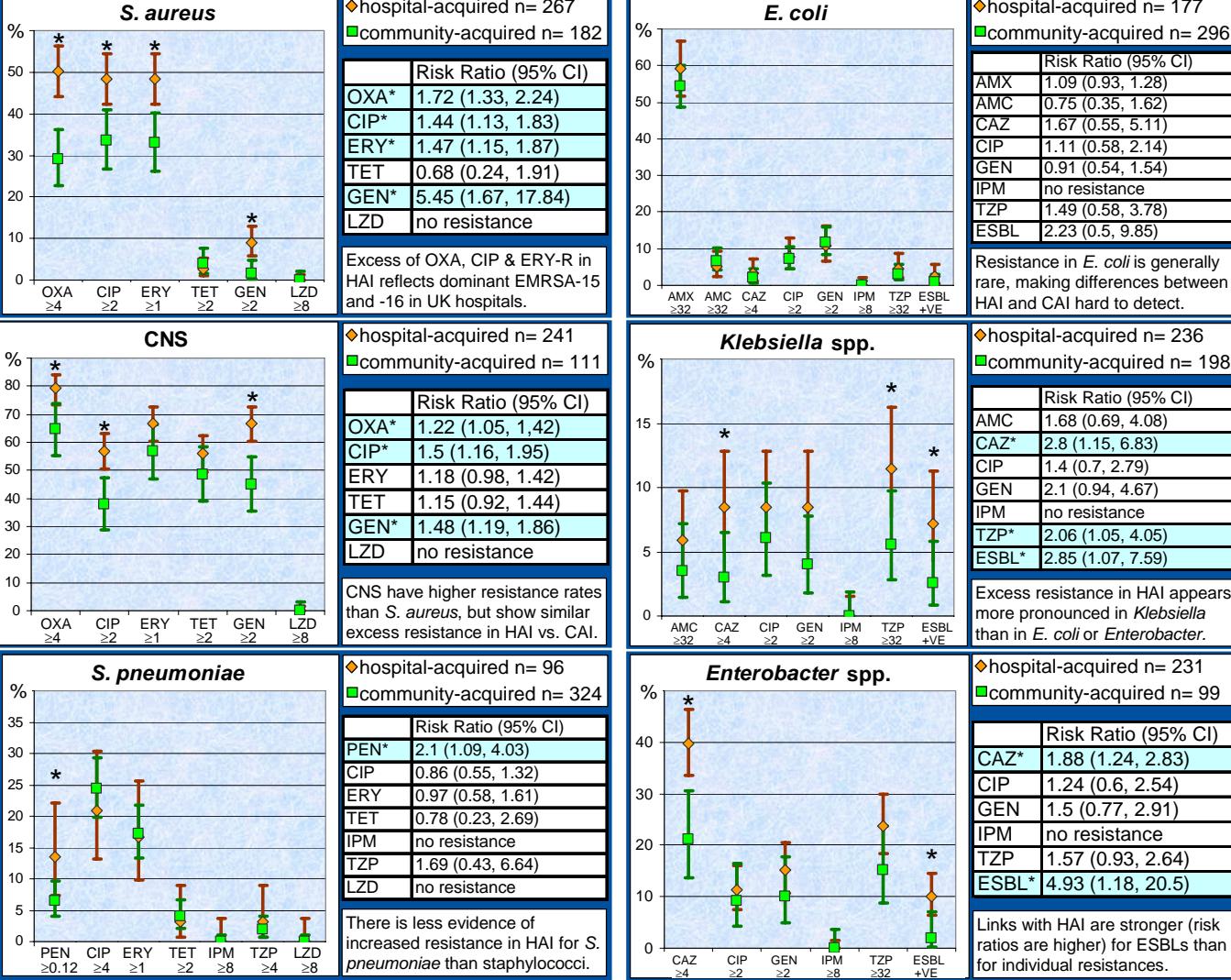
Organism ID and Susceptibility Testing: M. Colman⁶, A. Williams⁶.

¹North Bristol NHS Trust; ²Wyeth; ³Addenbrookes Hospital, Cambridge; ⁴Merck, Sharp & Dohme; ⁵Micron Research Limited; ⁶Health Protection Agency; ⁷Bayer Pharmaceuticals; ⁸Cubist Pharmaceuticals; ⁹GlaxoSmithKline; ¹⁰Pfizer.

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Sponsored by: Cubist Merck, Sharp & Dohme
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Supported by: BSAC
Central Laboratory: HPA, London



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