**BACKGROUND**

Intra-abd. Obs NT-I CTX+GEN I-I TZP 25 Cumulative % CIP R-R 30 15 S-I R-S NT-S CTX CAZ Unknown 20 Image 0x3003 to 410x3232

There is no clear evidence that other antibiotics are more effective, and therefore continued use of aminoglycosides, such as gentamicin, should be supported. The continued use of aminoglycosides is supported by the results of our study, which showed that the cumulative percentage of patients receiving gentamicin was 20% after the first 25 days of treatment. This supports the continued use of aminoglycosides in the management of septic patients at our hospital.

**HYPOTHESIS**

The objective of this study was to identify local trends in antibiotic resistance to aid prescribing and infection control policy-making. This is of particular importance regarding sepsis of unknown source, since blood cultures can take longer to grow and reveal antibiotic sensitivities than the time available for sepsis patients to react to appropriate therapy, emphasising the need to get the best treatment as soon as possible at first try, and therefore, the need for historical data is imperative.

We reviewed trust wide bacteraemia and antimicrobial sensitivity data between 2013 and 2017, broken down regarding organism/organism type, including carbapenemase-producing enterobacteriaceae (CPE) as Manchester has been reported as an area with high prevalence of healthcare-associated infections caused by these pathogens; major pathogens were selected (7, 8).

**METHODS**

The MicroGuide app was used to obtain current antimicrobial recommendations for this Trust. Antibiotics examined: co-amoxiclav, amikacin, amoxicillin, azithromycin, cefazoline, ciprofloxacin, co-trimoxazole, cefotaxime, cefotumene, cefepime, cefoxitin, ceftazidime, gentamicin, meropenem, meropenem, tigecycline, tobramycin, trimethoprim, piperacillin-tazobactam.

We considered as contaminants all Micrococcus spp. and, if not line- or device-associated, coagulase-negative staphylococci, propionibacteria, Bacillus spp. and diphtheroids. Duplicates were discarded to avoid over-representation of the same case (same patient from the same location growing the organism within 14 days).

Data analysis was performed with the appropriate SQL queries.

**RESULTS**

**E. coli** is the most common organism in significant positive blood cultures.

### Urinary tract infection (UTI) is the main source of *E. coli* bacteraemias

[Fig. 2: (A) Bar chart with percentage of *E. coli* bacteraemias in 2017. B) Radial chart with sources of *E. coli* bacteraemias in 2017.]

- **Fig. 2.** Bacteraemia due to *E. coli* accounted for 22.2% of total significant isolates between 2013 and 2017. The majority of these cases were due to urinary tract infections (UTI) (31.8%), followed by bowel infections (27.3%), infections due to penetration of the skin or mucous membranes (11.8%), and infections due to penetrating body wounds (11.6%).

**Rise in carbapenem-producing and ESBL/AmpC Gram-negative agents**

[Fig. 3: Carbapenem-producing Gram-negative agents showed an increase of 60.1% between 2015 and 2017 whereas ESBL/AmpC increased 32.3% in the same time period.]

**CONCLUSIONS**

- **With *E. coli*, addition of gentamicin can be beneficial**

[Fig. 4: For *E. coli*, resistance to aminoglycosides was mainly found to be stable or exhibit a slight increase. Combining gentamicin with other antibiotics is still beneficial in initial empirical treatment. The spike in AMC resistance in *E. coli* and other Gram-negatives was largely due to changes in sensitivity testing based on EUCAST recommendations. NT, not-tested; R, resistant; I, intermediate; S, sensitive.]

**BIBLIOGRAPHY**


