

E0067 Vancomycin resistant *Enterococcus faecium* bloodstream infection outbreak in a haematology tertiary referral centre, a case series review

Susan Alleyne², Shereef Elmoamly¹, Katherine Hardy², Manos Nikolousis¹, Abid Hussain*²

¹Heart of England NHS Foundation Trust, Haematology, United Kingdom, ²Public Health England Laboratory, Birmingham, Microbiology, United Kingdom

Background: Vancomycin resistant enterococci are important pathogens in haematology patients. An increased incidence of Vancomycin resistant *Enterococcus faecium* (VRE) bacteraemias was identified in a haematology tertiary referral centre in May 2017. This study aims to investigate the risk factors, management and outcome of the cases.

Materials/methods: A look back exercise determined the number of VRE bacteraemias from December 2015 to August 2017. A review of clinical notes, computerised clinical data and microbiological reports was undertaken for all cases. All isolates were typed by pulse field gel electrophoresis (PFGE) at Public Health England reference laboratory

Results: A total of 21 patients (14 male, 7 female) with a median age 61 years (range 32-74) were identified with VRE bacteraemia. The average length of stay prior to the bacteraemia was 27 days (3-71 days). PFGE typing revealed 13 types, two predominant types accounted for 48% patients.

Underlying haematology diagnosis was 57 % leukaemia, 19 % lymphoma and 24 % myeloma disorders. 67 % had a transplant within 6 months of the bacteraemia (71 % allograft, 29% autograft). 66 % had severe neutropenia (<0.5x 10⁹/L). 90 % of cases had central venous access and 57% had a non-VRE bacteraemia in the previous 30 days.

Initial antibiotic management was Daptomycin 57% (8mg/kg od) or Linezolid 43%. Three cases were Daptomycin resistant de novo with one developing resistance on treatment. 33% switched to an alternative anti-VRE antimicrobial due to bacteraemia persistence or resistance. The average treatment duration was eight days. 52 % had an echocardiogram and two were treated for VRE infective endocarditis. The 30 day all-cause mortality rate was 33%.

Outbreak management included a range of Infection prevention and control (IPC) measures, including rectal screening, environmental control and prudent antimicrobial stewardship (AMS). There have been no further VRE bacteraemia cases since August 2017.

Conclusions: This study has highlighted the clinical significance of VRE in the haematology population. Close monitoring of healthcare associated infection rates and a low threshold for typing is essential to identify transmissions and outbreaks at the earliest opportunity. Halting an outbreak requires multiple interventions (IPC, AMS and clinical practice review).