Abstract (eposter session)

Glycopeptide-resistance in Staphylococcus epidermidis isolated from prosthetic joint infections
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Objectives: Methicillin-resistant Staphylococcus epidermidis (MRSE) poses a major problem in Prosthetic Joint Infections (PJIs). Vancomycin is often considered drug of choice in empirical treatment of PJIs. While complete vancomycin resistance is rare, indications of poor response following treatment with glycopeptides in clinical infections of staphylococci with heteroresistance raise concerns about future treatment strategies. Our aim was to examine the prevalence of reduced susceptibility to glycopeptides in S. epidermidis isolated from PJIs in three Swedish counties between 1993 and 2012. Methods: S. epidermidis isolates (n=122) from 119 patients were included, and isolates were retrieved from multiple perioperative tissue samples from revision surgery in clinically verified PJI. Standard antimicrobial susceptibility testing (disc diffusion test) for antibiotics potentially useable for treatment of staphylococcal PJI, and standard MIC determination for glycopeptides was performed. For detection of heterogeneously glycopeptide intermediate Staphylococcus epidermidis (hGISE), macromethod Etest (MME) and glycopeptide resistance detection (GRD) Etest was used. Results: When combining MME and GRD, hGISE was detected in 95/122 (77.9%) of isolates. According to EUCAST definitions, standard MIC determination detected no vancomycin resistant isolates. Teicoplanin resistance was detected in 14/122 (11.5%) of the isolates, and all of these were also hGISE positive. In isolates with teicoplanin MIC >2, hGISE was detected in 64/67 (95.5%). Teicoplanin MIC <=2 did not rule out hGISE, since hGISE could be detected in 31/55 (56.4%) of these isolates. Multidrug resistance, i.e. resistance against >=3 antibiotic groups, was detected in 86/95 (90.5%) of hGISE isolates, compared to 16/27 (59.3%) of S. epidermidis where hGISE could not be detected. Conclusion: Heterogenous glycopeptide resistance detected by MME or GRD was common in this material. However, hGISE is difficult to detect with standard laboratory diagnostic routines. Thus, glycopeptides may not be sufficient in many of these PJIs, even if standard MIC classifies the S. epidermidis isolate as susceptible.