HETEROGENEOUS VANCOMYCIN–INTERMEDIATE COAGULASE-NEGATIVE STAPHYLOCOCCI IN NEONATES: DOES TREATMENT WITH LINEZOLID IMPROVE OUTCOMES?

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OBJECTIVE

We aimed to compare clinical outcomes of neonates with HCoNS treated with vancomycin vs. linezolid.

METHODS

Heteroresistance

Isolates were considered heteroresistant if:

(1) Etest GRD showed minimum inhibitory concentrations (MIC) ≤4 mg/L for either vancomycin or teicoplanin and

(2) standard vancomycin Etest MIC was ≤4 mg/L, according to the manufacturer's instructions.

All isolates have been sent for pulse field gel electrophoresis (PFGE) and population analysis profile/fingerprints under the curve (PAP-AUC) for confirmation of antibiotic susceptibility.

Treatment groups

A clinical protocol was introduced in June 2012, recommending to neonatologists with Gram-positive cocci in blood culture and thrombocytopenia OR lack of improvement on vancomycin AND those with confirmed CoNS BSI with linezolid.

Patients initially treated with vancomycin and switched to linezolid within 24h were considered treated with linezolid.

Statistical Analyses

χ² was done for categorical variables and Student t-test for continuous variables. Cox regression models and linear regressions were used to adjust for potentially confounding variables.

RESULTS

Table 1. Patient characteristics.

Table 2. CLINICAL OUTCOMES.

Figure

CONCLUSION

Given the limited power of this study, vancomycin was as effective as linezolid in terms of the duration, recurrence, thrombocytopenia and mortality associated with HCoNS CLABSI in NICU patients, when adjusted for underlying medical conditions.

CONTACT INFORMATION

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Vancomycin n=56

Linezolid n=33

s. capitis

S. warneri

s. epidermidis

0
50
100
Vancomycin MIC by tdm at 24h (mg/L) Mean (SD)
Vancomycin 56 (62.9 %) Linezolid 33 (37.1 %)

CLABSI complications

All multivariate models were adjusted for mechanical ventilation, as it was the only variable which mounted a significant statistical difference through univariate analysis.

* Only the outcome for which mechanical ventilation was an independent risk factor was for thrombocytopenia: OR 3.233 (CI: 1.211-8.634)

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