



DALBAVANCINA AND TEDIZOLID. ADEQUATE ALTERNATIVES FOR STRAINS WITH REDUCED SENSITIVITY TO VANCOMYCIN, DAPTOMYCIN OR LINEZOLID?

Navarro M, Betancort T, Tévar E, Calzado G, Suárez M, Ramos E, Gómez E, Plasencia I, Vera M, Ferrer A, Merino J.
Servicio de Farmacia. Hospital Universitario Nuestra Señora de Candelaria. Santa Cruz de Tenerife



Background

We ask if Dalvabancina and Tedizolid are good alternative

Purpose

To determine the most cost-effective treatment option for GRAM + microorganisms with reduced sensitivity to Vancomycin, Linezolid or Daptomycin depending on the in vitro activity determined in our Hospital

Material and methods

Retrospective study (from January 2016 to January 2017). All Gram-positive strains underwent antimicrobial susceptibility testing using E-test method on Mueller–Hinton E agar, results were read at 24h.

The antibiotics tested were vancomycin, linezolid, daptomycin, tedizolid and Dalbavancin. Minimum inhibitory concentrations (MIC) were calculated according to CLSI 2016 and EUCAST 2016 criteria.

Direct costs were determined taking into account the acquisition costs of the drug. Hospital costs were not considered since the estimated duration of hospitalization.

A total of 56 strains of gram positive cocci were tested:

21 daptomycin resistant Staphylococcus aureus (50% methicillin-resistant Staphylococcus aureus (MRSA))

5 coagulase negative staphilococci (CoNS) with reduced sensitivity to linezolid

1 Enterococcus faecium with intermediate sensitivity to linezolid

1 linezolid-resistant Enterococcus faecalis

8 Enterococcus faecalis with intermediate sensitivity to linezolid

19 vancomycin-resistant Enterococcus faecium

1 vancomycin-resistant Enterococcus faecalis

Results

100% of Staphylococcus aureus strains with reduced sensitivity to daptomycin were sensitive to vancomycin, linezolid, dalbavancina and tedizolid.

100% of CoNS strains with reduced sensitivity to linezolid were also resistant to tedizolid, 20% were resistant to daptomycin and 100% were sensitive to Dalbavancina.

100% of Enterococcus faecium with reduced sensitivity to vancomycin were sensitive to Tedizolid and Linezolid, 95% were resistant to Dalbavancina and 70% were resistant to daptomycin

The cost/day of treatment assuming a patient weighing 70 kilograms and preserved renal function for each treatment is:

Intravenous linezolid: 5,5 €/day

Oral linezolid: 2.5 €/day

Vancomycin: 4.8 €/day

Intravenous tedizolid: 860 €/day

Oral tedizolid: 143.3 €/day

Dalbavancin: 127.8 €/day

Daptomycin: 92.5 €/day

Conclusion

Linezolid presents a good cost-effectiveness profile for Staphylococcus aureus and Enterococcus Faecium strains.

All strains that were resistant to linezolid were also resistant to tedizolid.

In glycopeptide-resistant strains, dalbavancin had a high minimum inhibitory concentration (MIC) but had a low MIC in those strains resistant to daptomycin.

Tedizolid is not a cost-effective option against linezolid.

In the case of Dalbavancina, it would be necessary to take into account the savings in hospitalization costs to assess its cost-effectiveness