Reviewer's report

Title: Endocarditis caused by oxacillin-susceptible Staphylococcus aureus with reduced susceptibility to vancomycin? First report in Argentina: a case report.

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Reviewer: Kyu Y Rhee

Which of the following best describes what type of case report this is?: New associations or variations in disease processes

Has the case been reported coherently?: Yes

Is the case report authentic?: Yes

Is the case report ethical?: Yes

Is there any missing information that you think must be added before publication?: Yes

Is this case worth reporting?: Yes

Is the case report persuasive?: Yes

Does the case report have explanatory value?: Yes

Does the case report have diagnostic value?: No

Will the case report make a difference to clinical practice?: Yes

Is the anonymity of the patient protected?: Yes

Comments to authors:

This is an interesting addition to the literature on the growing rate of vancomycin heteroresistant SA strains, particularly among methicillin-susceptible strains. In its present form however, there are several key omissions, as well as multiple stylistic, spelling and grammatic errors that need to be edited prior to publication. Specific comments follow below.

1. The authors mention only one case of vancomycin heteroresistance on an oxacillin-susceptible background, when in fact there are several reports of this (Fusco et al, DMID, 2009; Pillai et al, CID, 2009). These should be noted.

2. Methodology: The selection of subpopulations of vancomycin-intermediate SA by serial plating on agar with increasing subinhibitory vancomycin concentrations
has been previously described (Drago, et al, Clin Micro and Infection, 2008) Moreover, this selection of subpopulations is distinct from DETECTION of resistant subpopulations, of which the most well-validated method is the PAP-AUC of the original isolates. Indeed, the criterion for HETERORESISTANCE is a PAP-AUC ratio of 0.9 or greater compared to Mu50 (Wootton, MacGowan, Walsh and Howe, JCM, 2007). While the obviously increased cell wall diameter on EM does support development of heteroresistance, one would like to see the PAP-AUC ratios as well. Moreover, given recent validation of the Etest GRD strip for detection of vancomycin heteroresistance (Yusof et al, JCM, 2008), this would also be interesting to note.

3. Discussion: The line "It is worth mentioning that treatment of staphylococcal bacteremia with vancomycin is usually suboptimal, due to the high probability of therepeutic failure..." is misleading and should be edited to specify that treatment of Methicillin-susceptible SA bacteremia with vancomycin is suboptimal, which has clearly been demonstrated in several studies.

b. The combination of vancomycin with rifampin has never been shown in vitro to be efficacious for the treatment of SA bacteremia. While vancomycin plus gentamicin was previously a recommendation of the Infectious Disease Society of America to hasten clearance of blood cultures, this has also recently been changed due to findings of enhanced nephrotoxicity with no real morbidity/mortality benefit (Cosgrove et al, CID, 2009). This should be noted in the text.

c. The authors conclude that "the role of daptomycin in the treatment of staphylococcal endocarditis is not clearly defined and the clinical experience and availability is limited" Indeed, the role of daptomycin in the treatment of RIGHT SIDED staphylococcal endocarditis has been well described (Fowler et al, NEJM, 2006). Moreover, the clinical experience with daptomycin in S. aureus endocarditis is growing (Levine, JAC, 2008), and it is readily available in the US. Thus the statement should be editted to "the role of daptomycin in the treatment of left-sided staphylococcal endocarditis is not clearly defined and availability in Argentina is limited"

4. Conclusion - The authors state that this work ... "warns about the need to determine the vancomycin MIC for S. aureus as a screening method to detect the presence of hVISA, VISA and VRSA strains..." While recent lowering of the CLSI breakpoint for VISA and VRSA strains do mean that MICs are an efficient and sensitive screen for intermediate and overt vancomycin resistance, MIC testing has been shown to be notoriously insensitive in detecting hVISA isolates - the very reason why many microbiology labs in the US, including that of the New York Hospital - routinely screen all MRSA isolates for heteroresistance using the Etest GRD strip analysis (Rybak et al, JCM, 2008).

**Quality of written English:** Needs some language corrections before being published
Declaration of competing interests:

I declare that I have no competing interests