Reviewer's report

Title: Community-associated Methicillin-resistant Staphylococcus aureus Bacteremia and Endocarditis among HIV Patients: a cohort study

Version: 1 Date: 18 April 2011

Reviewer: Kyle Popovich

Reviewer's report:

The objective of this retrospective study was to examine the prevalence of CA-MRSA, defined genotypically, among a group of HIV patients with S. aureus bloodstream infections as well as to identify risk factors for endocarditis and mortality. Major findings were that CA-MRSA was a significant risk factor for the development of endocarditis versus non-CA-MRSA.

Major Comments:

1. In the results section, the authors should state the mean or median CD4 count to help the reader understand the population being studied better. Was viral load collected on patients?

Also, I am surprised by the really low number of individuals receiving ARVs (30%). The authors may want to comment on this as this low percentage may limit the generalizability of findings.

2. Did the authors capture the proportion of infections that presented #72hrs into hospitalization versus >72hours into hospitalization. Since CA-MRSA was defined genotypically, it would be interesting to see how many were community-associated vs nosocomial by epidemiologic definitions, especially as CA-MRSA has been reported as a cause of hospital-onset bloodstream infections.

3. Did the authors capture bacteremia duration? I would be curious to see if there was a difference for CA-MRSA vs non-CA-MRSA.

4. Since it is now 2011, why was the study from 2003 to 2005? I am curious if data was collected beyond 2005 and if not why? The current study period obviously represents a time when CA-MRSA infections were increasing at several sites nationally. I was curious if the high numbers of bloodstream infections due to CA-MRSA among the population they studied persisted beyond 2005? Also, did the authors look to see if CA-MRSA cases were evenly distributed over the study period or if they increased over a particular time period?

5. Did the authors evaluate for embolic/metastatic complications of endocarditis such as septic emboli, etc.? Since they found that CA-MRSA caused more endocarditis and these strains are thought to perhaps be more virulent, I would
be curious if they noticed a difference in endocarditis complications?

6. Since patients were eligible for enrollment for every new admission (vs. a time cut-off prior to re-enrollment), how many repeats were there in their population? If patients were re-enrolled, was it for the same episode of bacteremia/endocarditis or for a new episode?

7. Given the authors conclusion, I think that the topic of USA300 virulence should be addressed in the discussion section.

8. It appears that male gender was negatively associated with endocarditis. Do the authors have an explanation for this? Were there particular community exposures or risk factors seen less frequently among males to account for this?

Minor Revisions:
1. The authors may want to ensure that the citations are correct; some appeared incorrect in the background section.

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:

I declare that I have no competing interests