

Lizz Piccoli

Title: Epidemiology of bloodstream infections caused by methicillin-resistant *Staphylococcus aureus* at a tertiary care hospital in New York

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Abstract: The abstract had grammar mistakes that were distracting. Otherwise it appeared to accurately summarize the article.

Introduction: Summarizes the importance of MRSA and explains why they chose to focus on MRSA instead of MSSA. The authors discuss the global extent of MRSA and the increase in community-acquired and community-onset infections.

Methods: The authors included a detailed description of the study location (Staten Island University Hospital). The three groups of participants were:

1. Patients with MRSA BSI (case group 1)
2. Patients with MSSA BSI (case group 2)
3. Patients hospitalized during same period time who did not develop either infection (Retrospective Controls)

They reviewed patient charts retrospectively and collected data on infection status, basic demographics, comorbid medical conditions, treatment and complications. They also looked at other risk factors related to hospitalization. (i.e. catheters)

Results & Discussion: The authors summarized their results into three tables. Their result section could have been simplified further. The discussion discusses risk associated with the recent placement of a CVC. Their findings were similar to the findings of similar studies conducted on the risks of CVC and MRSA infection.

Conclusions: Did not discuss the possible limitations of conducting a retrospective case control study. The conclusions made agree with existing research, but don't appear to be particularly novel. There is very little commentary about possible interventions to decrease the number of *S aureus* BSIs in their hospital

Major Comments:

- The language and wording of this article took away from its impact. There were grammatical errors and some odd phrasing that made it harder to read. This has nothing to do with study design, but I believe writing clearly and concisely impacts how a study will be interpreted.
- I'm not aware of if gender impacts MRSA or MSSA infection at all, but I was surprised that they allowed their control group to be proportionally different by gender from either of their case groups. It also looks like they were looking at significantly healthier controls compared to cases. Wouldn't it have been more interesting to compare groups with similar health demographics to give a better indication of why one person became infected compared to a similar person who didn't become infected. I just don't know if I believe their findings around MRSA and MSSA patients having more comorbidities than controls. I do believe it's possible that having comorbidities may make you more likely to

become infected with MRSA or MSSA. I just don't think that can be said in the other direction. Why didn't they use any matching for controls to cases?

Minor Comments:

- The authors waited until the last paragraph of the introduction to clearly state the purpose of their study. I think it may have been more useful to have that earlier in the paper.
- Methods: The authors state under 'Data Collection' that they did not contact patients after the study initiation date, but also say they inspected data retrospectively for BSI recurrence that occurred 6 months after the initial discharge data. I'm curious if they accounted for whether patients chose to go to other facilities for fall up care. It is quite probable that a patient having become infected with a hospital-acquired infection would choose to go to a different facility due to fear of reinfection. Or in the case of an emergency would not necessarily have the ability to choose the facility they're sent to. If a patient gets care elsewhere it would not be documented in their electronic medical chart. They did not discuss exclusion protocol. They later stated that they attempted to do the best they could to collect details of treatment. However, this is a retrospective study—how hard could it have been to get that information? OR to exclude patients with incomplete data.
- Their discussion reads a lot like their results section and feels a little redundant.