Reviewer’s report

Title: Determinants and outcomes of Access-Related Blood-Stream Infections among Irish Haemodialysis Patients; A Cohort Study

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Reviewer: Kelly Liang

Reviewer’s report:

This is an interesting manuscript describing the determinants and outcomes of access-related bloodstream infections (AR-BSI) among a cohort of 235 Irish chronic hemodialysis (HD) patients from a regional dialysis program between Jan 2015 and Dec 2016. The findings confirm the prevailing knowledge that AR-BSI are substantially higher in central venous catheter (CVC) usage compared with arteriovenous fistula (AVF) usage. These findings persist despite advances in catheter design and anti-infective protocols and was consistent in all subgroups. Perhaps of more interest was the finding that older age (75+ vs. <75 years) was not associated with significant differences in rates of AR-BSI in unadjusted or adjusted analyses. The study also corroborated previous findings that femoral CVC access was associated with a significantly higher rate of AR-BSI (adjusted RR 4.93, 95% CI 2.69-9.01) compared with other non-femoral CVC. A few concerns/issues that should be addressed to strengthen the manuscript include the following:

-p. 7: The authors state that "All recorded CVCs were tunneled catheters (no temporary dialysis catheters)." It seems implausible that there were no CVCs associated with temporary dialysis catheters. Was it really true that no bacteremia cases occurred in the setting of temporary dialysis catheters, or was this data just not available? If there truly were no bacteremia cases associated with temporary dialysis catheters, please speculate on why this might be.

-p. 10: Is there any data on the breakdown of non-femoral CVC's? That is, what were the other sites (internal jugular, subclavian, etc.) and were there differences between those?

-p. 10 Type of organism, p. 13 Discussion, and p. 25 Table 3: Were there any fungal infections recorded?

-p. 10 AR-BSI Outcomes: How long did it take for AR-BSI to clear for those who survived? Were there differences between femoral vs. non-femoral CVC's in terms of time to clearance of AR-BSI?

Minor editorial errors that should be fixed include the following:

-p. 7, line 1: Eliminate a space between "were recorded..."

-p. 7, line 42: Change the spelling of "tunnelled" to "tunneled."
Overall the manuscript was well-written and had very few grammatical/editorial errors. Some may argue that the findings are not that novel; however, if the above issues and edits are addressed, this study could be a nice addition to the literature suggesting the importance of continued vigilance for AR-BSI with CVCs even in this era of improved catheter design and infection-control programs.

**Are the methods appropriate and well described?**
If not, please specify what is required in your comments to the authors.

Yes

**Does the work include the necessary controls?**
If not, please specify which controls are required in your comments to the authors.

Unable to assess

**Are the conclusions drawn adequately supported by the data shown?**
If not, please explain in your comments to the authors.

Yes

**Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?**
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