Reviewer's report

Title: Why is asymptomatic bacteriuria overtreated? : A tertiary care institutional survey for resident physicians

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Reviewer: Dimitri Drekonja

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Overall comments
An interesting manuscript describing 2 issues: an assessment of the amount of inappropriate ABU treatment occurring, and patient/provider factors associated with such use, and a survey of resident knowledge/attitudes regarding the management of ABU. Importantly, the survey was performed approximately a year after the assessment of ABU treatment, making any correlation between the two of questionable value. In some sections of the discussion it seems that correlations are being drawn between the two, which is not appropriate. I would consider reporting the two aspects of this study in separate reports—each is interesting in its own right, but they really are separate studies of the same general issue.

Major revisions:
1-Lines 267-71: Linking the survey answers to the level of appropriate or inappropriate treatment of ABU is not appropriate—although it may be that some of the providers answering the survey provided some of the care, this is not certain. The fact that the survey was a year or more after the care provided, with some of the residents likely having left this hospital, makes such assumptions highly dubious. I would consider reporting the 2 components of this study in separate reports: one regarding the level of inappropriate ABU treatment and the factors associated with it, and the other on the results of a survey of ABU in a hospital with a documented high level of inappropriate treatment of ABU.

Minor revisions:
1-Need to define ABU in abstract
2-Line 175: Any validation of the survey questionnaire should be mentioned (piloted on X number of patients, developed by Y number of ID specialists, adapted from previous surveys, etc).
3-Line 203: From the figure, it appears that only cultures with 100,000 cfu/ml are accounted for. Can the authors provide a number for how many total urine cultures were performed in this period, and how many had some (but not high-count) bacteriuria/funguria?

Discretionary revisions:
1-Abstract: Although seems intuitive that further education would help with ABU management, this has not been shown. Suggest change “importance of further education” to “importance of developing solutions to the problem of inappropriate treatment of ABU.”

2- Line 111: Suggest different wording than “profitable”—implies that stewardship programs are making money on this. “High-yield” might be a better term. Another reason to focus on ABU that might be highlighted is the preponderance of Gram-negatives found in urine cultures, and the lack of new agents active against these organisms.

3-Line 140: Limiting the cultures to those with 100,000 cfu/mL likely captures most episodes of ABU that are inappropriately treated, but low-count bacteriuria can both cause clinical infections and can also be found asymptptomatically (even though it may not meet the surveillance definition for ABU, which requires isolation of the same organism at high count x2 with an interval of 1 week—a rather useless clinical definition). Focusing on only high-count bacteriuria likely understates the magnitude of this problem by some degree.

4-Line 165: Note that the survey was administered to physicians in October 2012, whereas the urine clinical data was collected for calendar year 2011. Presumably many of the surveyed providers were not providing care in this hospital in 2011, and those that were may not have been caring for the episodes of ABU recorded. Linking the survey and the clinical results is ill-advised.

5- Line 307-9: Was this prospective chart review done as a portion of this study? Is so, needs mention in methods. If performed for another study, this should be specified and a reference provided, if the experience has been published.

6- Lines 322-3: the finding that so many residents report practicing contrary to their reported knowledge is striking; future surveys and/or focus-group based studies would be of interest to explore the drivers of this contradictory behavior.

7- Lines 328-30: I would caution against recommending efforts that have a modest (if any) track record at reducing ABU. In particular, I’m unaware of strong data supporting educational efforts with improved management of ABU. Audit and feedback has a better evidence base, although unfortunately an initial dose (or more) of antimicrobials are often administered before the stewardship team is able to approach the providers.

8- Section on weaknesses: In addition to the weaknesses mentioned by the authors, drawing a close linkage between the 2 components of this study is a major one. Strongly consider de-linking them.

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

Quality of written English: Needs some language corrections before being published

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