Reviewer’s report

Title: External validation study of a clinical decision aid to reduce unnecessary antibiotic prescriptions in women with acute cystitis

Version: 0 Date: 09 Jun 2017

Reviewer: Nick Francis

Reviewer's report:

This paper describes a validation study of a clinical prediction rule for microbiologically confirmed UTI in women. UTI is a common condition and antibiotics are over-used, therefore the development and validation of a clinical prediction rule is a useful contribution.

Abstract

Suggest including the cut point for positivity (> 10^2 CFU/mL) used in the study in the abstract.

Introduction

I suggest you make it clearer that you previously developed a rule (2002 paper), which was then validated and modified (2007 paper), and it is this modified rule that you are now validating.

Suggest you indicate a range of culture positivity rates that have been shown in previous studies, with an explanation that some of the variation relates to differences in cut points, rather than just the one from your own study.

Suggest describing the decision aid components in the introduction rather than methods.

Methods

I would suggest moving the description of the decision aid to the intro section.

Why was blood / erythrocytes not recorded when this has been shown to be a helpful predictor (if combined with leukocytes) in another study?

Were reviewers of the urine culture blinded to other variables?
Results

Only 330/15,742 (2%) of approached physicians participated. This should be discussed in the Discussion section.

Urine culture only obtained in 57.2%, and final analysis on 397/752 (52.8%) of recruited women. This is discussed as a limitation.

Suggest moving comparison of excluded and included women to the start of the results section.

Discussion

On page 12 you indicate that other decision aids have been proposed for acute cystitis, and that none have undergone validation. You cite studies by Dobbs from 1987 and Knottnerus from 2013. You did not include the work by Little et al., including the papers describing the development and validation of a clinical decision rule. I would be interested in seeing some discussion comparing your work with theirs, or at least describing why you feel that it is not comparable. One of the key differences is that they used a higher cut point (10^3) for urine culture positivity. However, I think it is worth recognising, and describing, the fact that there are different definitions of microbiologically confirmed UTI used around the world, and it is not entirely clear how this relates to response to antibiotic treatment. Furthermore, it is worth highlighting that some studies have suggested a benefit from antibiotics in women with negative cultures, and therefore the 'gold standard' of urine culture does not necessarily equate with need for antibiotics.

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.

Yes

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? If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I am able to assess the statistics

Quality of written English
Please indicate the quality of language in the manuscript:

Acceptable

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