Reviewer's report

Title: Evaluation of dipstick analysis among elderly residents to detect bacteriuria: a cross-sectional study in 32 nursing homes

Version: 1 Date: 10 February 2009

Reviewer: martin smallbrugge

Reviewer's report:

The authors studied an important clinical subject: the value of dipstick analysis for detecting bacteriuria in older patients.

I will structure my remarks, following the article structure:

Abstract:
The abstract covers the article, only the last sentence in my opinion is a statement that cannot be built upon the results of the study, but is a physicians' opinion.

Background:
I have only one comment on this section. The authors state that 'it is unclear what clinical features or events are relevant in bacteriuria' implying that the study of Juthani-Mehta focusses on a group of patients that is not relevant. I disagree with the authors on this point: dipstick analysis is done in clinical practice after features/events are mentioned to the physician: physicians will not do dipstick analysis routinely (for example every six months), but do this because signs and symptoms like the ones used by Juthani-Mehta, are present.

Methods:
the choices made in selection of patients and in use of gold standard, are clearly explained.

Discussion:
Methodological aspects.
The authors state 'In this study 32% of urine cultures showed growth of potentially pathogenic bacteria. If only individuals with symptoms indicating a possible urinary tract infection had been included the results might have differed slightly. However, this study focused on evaluating dipstick ability to predict bacteriuria, not urinary tract infection. Furthermore, the major problem with selecting symptomatic individuals was that different opinions existed egarding symptoms among elderly and their correlation to urinary tract infection [1, 24]. Due to these problems individuals in this study were included regardless of symptoms.'

I disagree on this point with the authors: I think it would especially be worthwhile to
evaluate the NPV/PPV of the dipstick in patients with symptoms of a possible UTI, because this resembles common clinical practice: dipstick testing is used as first diagnostic step after symptoms/signs are presented by the patient to the physician. The symptoms/signs used by Juthani-Mehta are 'consensus' symptoms/signs, that are used by many clinicians.

The authors focussed 'on evaluating dipstick ability to predict bacteriuria, not UTI'. However they used not one gold standard, but different gold standards depending on presence of symptoms/signs like the ones used by Juthani-Mehta: this is strange in the light of their chosen focus.

In my opinion, analysing the data in two ways, could provide more valuable information:

1. Analysis of all dipsticks using a culture with growth >=100.000 CFU/ml as gold standard.

   This analysis could provide the answer to their main focus: ability of dipstick analysis to predict bacteriuria in nursing home residents. (A problem with this analysis probably will be that the cultures of the residents with symptoms of possible UTI have been judged only for >= 1.000 (male) and >=10.000 (female)).

2. Analysis of dipstick of residents with symptoms/signs of UTI, using a culture with growth >= 1.000 CFU/ml (male) and >=10.000 (female) as a gold standard.

   This analysis could provide an answer to another important topic: value of dipstick analysis for predicting in bacteriuria in nursing home residents with possible UTI.

Major compulsory revisions

The main problem with the analysis done by the authors is that two different (three) gold standards are used, depending on the presence of symptoms/signs of which the authors state in the background that it is unclear if these symptoms/signs are relevant in bacteriuria (why then letting them influence the gold standard?).

As stated above, in my opinion it would be worthwhile (if possible) to analyse the data in two ways.

Discretionary revisions.

The authors use the word elderly residents. There is some discussion about use of the term 'elderly'. Some suggest the use of 'older adults'. A possible term here could be 'nursing home residents'.

**Level of interest:** An article of importance in its field

**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.