Xu and his colleagues compare in this well written manuscript of a prospective study the diagnostic accuracy of procalcitonin (PCT), C-reactive protein (CRP) and white blood cell count (WBC) in differentiation of lower and upper urinary tract infections in children. As gold-standard of diagnosis of pyelonephritis the authors used the 99mTc-DSMA-scanning.

The question posed by the authors is well defined and clinically and epidemiologically sound and relevant. Limitations are mainly related to the long time elapsed since the study was performed between 1999 and 2002 as during this time only a less sensitive PCT was available which has been long replaced by the currently used much more sensitive PCT test generations. In addition, the literature review does not include papers published since 2002. More recent data than 2002 have demonstrated the use of PCT in diagnosis of bacterial infections, assessment of severity of infections and in differentiation between lower and upper urinary tract infections in children.

- **Major Compulsory Revisions**
  1. Please update the citations with newer literature, such as Leroy et al. “Association of procalcitonin with acute pyelonephritis and renal scars in pediatric UTI”, Sheu et al. „The role of procalcitonin for acute pyelonephritis and subsequent renal scarring in infants and young children.“, van Nieuwkopp et al “Procalcitonin reflects bacteremia and bacterial load in urosepsis syndrome: a prospective observational study”.

2. The authors need to acknowledge as a major limitation that their study was done with a less sensitive procalcitonin assay, which has been replaced by newer more sensitive test generations.

- **Minor Essential Revisions**
  - Please correct:
  - Title:
    • “Procalcitonin and C-reactive (not reaction) protein in urinary tract infection (omit position) diagnosis”
  - page 4:
    • Please omit the paragraph from “The efficacy of … to value of the test”. (The explanation of the ROC curve should not be a part of an introduction.)
• Please correct C-reactive protein not reaction.

- page 7:
• “As shown in figure 1…”

- page 9:
• Please omit the redundant description of PCT.
• The literature review is outdated, please modify.
• On page 10 the authors explain the definitions of sensitivity, specificity and ROC curves. This is redundant.

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

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I have received support from BRAHMS Inc. and bioMérieux to attend meetings and fulfill speaking engagements.