Author's response to reviews

Title: Assessment of renal function in mice with unilateral ureteral obstruction using 99mTc-MAG3 dynamic scintigraphy

Authors:

Mohammed N Tantawy (n.tantawy@Vanderbilt.Edu)
Rosie Jiang (rjiang4@jhmi.edu)
Feng Wang (feng.wang.1@Vanderbilt.Edu)
Keiko Takahashi (keiko.takahashi@vanderbilt.edu)
Todd E Peterson (todd.e.peterson@Vanderbilt.Edu)
Dana Zemel (dana.zemel@Vanderbilt.edu)
Chuan-Ming Hao (chuanming.hao@Vanderbilt.Edu)
Hiroki Fujita (hirofuji@gipc.akita-u.ac.jp)
Raymond C Harris (raymond.harris@Vanderbilt.Edu)
Christopher C Quarles (chad.quarles@Vanderbilt.Edu)
Takamune Takahashi (takamune.takahashi@vanderbilt.edu)

Version: 6 Date: 11 November 2012

Author's response to reviews: see over
November 10, 2012

Prof. Hayley Henderson
Executive Editor
The BioMed Central Editorial Team

Dear Prof. Henderson:

I am submitting a revised manuscript (Manuscript ID 1383657750748593), entitled “Assessment of renal function in mice with unilateral ureteral obstruction using $^{99m}$Tc-MAG3 dynamic scintigraphy”, for publication consideration in BMC-Nephrology.

According to the reviewer’s comments, we further revised the manuscript as described below. We believe that the present manuscript addressed all the issues and is suitable for publication.

The manuscript has not been published previously and is not being considered concurrently by another publication. There is no financial interest in the subject matter or materials discussed in the article.

Thank you very much for your efforts on behalf of our work.

Sincerely yours,

Takamune Takahashi M.D., Ph.D.
Associate Professor of Medicine
Division of Nephrology and Hypertension
Vanderbilt University Medical Center
S-3223, Medical Center North, Nashville, TN37232
Phone: (615) 343 4312, Fax: (615) 343 7156
E-mail:takamune.takahashi@vanderbilt.edu
Responses to reviewers:

Thank you so much for reviewing our manuscript carefully. We really appreciate your efforts. We fully agree with you in that these are inappropriate wordings. Therefore, we corrected them as follows. In the manuscript, the changes are highlighted in red.

1) Page 2
   ?excluded from UUO kidneys?
   ?functional vessel volume?
   ?slow perfusion?

We corrected these wordings as follows.

1) “excluded from UUO kidneys” to “excreted from UUO kidneys”
2) “functional vessel volume and/or tubular uptake are rapidly reduced...” to “uptake of $^{99m}$Tc-MAG3 is rapidly reduced ...”;
3) “slow perfusion” to “$^{99m}$Tc-MAG3 is slowly up-taken...”.

2) Page 7
   ?not excluded?

We amended this wording to “not excreted”.

3) Page 9
   ?influx of $^{99m}$Tc-MAG3 to renal parenchyma?

We amended this wording to “deposition of $^{99m}$Tc-MAG3 in renal parenchyma”

4) Page 11
   ?functional vessel volume?
   Final two sentences do not make sense.

We agree with the reviewer. This wording and sentence is confusing. Therefore, we amended it to “the capacity of $^{99m}$Tc-MAG3 uptake is reduced in UUO day 1 kidney, perhaps due to tubular cell injury”.

We also amended the final two sentences to “early tubular excretion of $^{99m}$Tc-MAG3 may be decreased in contralateral kidneys”.

5) Page 17
   ?deposition of $^{99m}$Tc-MAG3"

We amended this wording to “excretion of $^{99m}$Tc-MAG3 to ...”.

6) Finally, we remain at odds with what the whole technique is accomplishing. This is most apparent in Figure S1. Both phases 1 and 2 will include both glomerular filtration and tubular UPTAKE. If these did not happen, the kidney would not be easily distinguished from other organs, since they all receive blood flow. These are followed by
tubular EXCRETION. Can you please ensure that your reporting is extremely clear.

We truly agree with the reviewer in that both phases include tubular uptake. Therefore, the slope of initial linear uptake (phase 1) does not simply indicate renal blood flow, though it is used as a parameter of renal perfusion in some reports. In this context, RBF’ will be inappropriate wording (over-interpretation). Hence, we eliminated this word from the manuscript including the Figures, and used “the slope of initial uptake (SIU)” instead of RBF’. We also added or corrected some texts as indicated in red. Also, we removed the following sentence from the discussion as it is heavily focused on renal perfusion.

“Also, it would be of interest to investigate regional changes (cortex vs. medulla) of renal perfusion in UUO mouse kidney using a nuclear or MR imaging technique as a previous autoradiographic study detected distinct changes in renal perfusion between outer cortex and inner cortex/medulla in UUO rat kidney at 10-30 min post obstruction[25].”