

## **Author Reply Re: Elbaset MA, Ezzat O, Elgamal M, Sharaf MA, Elmeniar AM, Abdelhamid A, *et al.* Supernormal differential renal function in adults with ureteropelvic junction obstruction: Does it really exist? Indian J Urol 2020;36:205-11**

Dear Sir,

We thank the readers for their queries about our work and believe that our reply will provide more details about this topic.

The old concept of Koff *et al.* mentioned in the author's comment is countered by new trends in managing patients

with UPJO conservatively in case they are asymptomatic and the renal function is stable.<sup>[1,2]</sup> In this report, not only did all patients have obstructed kidneys evident by renographic prolonged T $\frac{1}{2}$  (23 [16–34] min) but were also symptomatic (29 patients with recurrent flank pain and 2 patients presented with recurrent pyelonephritis).<sup>[3]</sup> The decision of corrective surgery in this subset of

patients could not depend only on  $T^{1/2}$  value but clinical symptoms as well.

We agree with the theory that renal hydronephrosis is not always a pathological sign but actually a compensating mechanism designed to protect the kidney from high pressures and renal damage. Loss of this adaptive mechanism initially leads to the appearance of patient's symptoms prior to renal function deterioration.<sup>[4]</sup> Persistence of these symptoms with delayed intervention could initiate renal function deterioration.

We agree with the authors in the necessity of standardized methodology for renogram technique application; we described it thoroughly in the manuscript methodology.<sup>[3]</sup> The amount of hydration, the fullness of the bladder, and the position of the patient are precautions that should be taken into consideration and are done routinely in our center to increase the accuracy of the renographic results. Evaluation of normalized residual activity, pelvic excretion efficiency, output efficiency, and cortical transit time are analogous to transit time, especially in the presence of standardized renogram protocol.<sup>[5,6]</sup>

Although computed tomography (CT) may be used to determine differential function, it cannot replace nuclear renal scan entirely to quantify obstruction.<sup>[7]</sup> Authors in their comment mentioned a study done by Sarma et al. which was encountered by some limitations. If patients presented with acute on top of chronic pyelonephritis, renal tissue edema would hamper the accurate detection of renal volume. Second, most patients evaluated in chronic obstruction group had poorly functioning renal units. Accordingly, the use of CT-detected renal parenchymal volume as a predictor of differential renal function. (DRF) determination in the snDRF group is questionable. Finally, nephron damage may occur before measurable volume loss and the CT estimate may lag behind a renal scan to indicate decreasing function.<sup>[7]</sup>

Which type of scintigraphy,  $^{99m}\text{Tc}$ -DMSA or  $^{99m}\text{Tc}$ -MAG<sub>3</sub>, should be used in the evaluation of DRF is still a matter of debate. Some authors considered that

different isotopes could yield substantially different results in the same patient.<sup>[6]</sup> On the other hand, it is proven that  $^{99m}\text{Tc}$ -DMSA and  $^{99m}\text{Tc}$ -MAG<sub>3</sub> renograms in the evaluation of DRF are comparable. In a previous study, it was concluded that if a  $^{99m}\text{Tc}$ -MAG<sub>3</sub> scan has been performed to assess drainage, a  $^{99m}\text{Tc}$ -DMSA scan specifically to estimate DRF is unnecessary, provided that the DRF is within normal limits on the  $^{99m}\text{Tc}$ -MAG<sub>3</sub> scan and there is no proven scarring on previous imaging.<sup>[8]</sup> Based on that, a  $^{99m}\text{Tc}$ -MAG<sub>3</sub> renogram was done commonly at our center for adults in the evaluation of UPJO taking advantage of obstruction evaluation. Hence, we could not expose our patients to further radiation exposure by doing  $^{99m}\text{Tc}$ -DMSA. We could suppose that further prospective studies might open the horizons to fill those gaps in this topic of the literature.

**M. A. Elbaset\*, Yasser Osman**

Urology Department, Urology and Nephrology Center, Mansoura University, Mansoura, Egypt  
\*E-mail: abdelbaset.m.i@gmail.com

## REFERENCES

1. Malki M, Linton KD, Mackinnon R, Hall J. Conservative management of pelvi-ureteric junction obstruction (PUJO): Is it appropriate and if so what duration of follow-up is needed? *BJU Int* 2012;110:446-8.
2. Guler DM, Young JG, Painter DJ, Keeley FX Jr., Timoney AG. How successful is the conservative management of pelvi-ureteric junction obstruction in adults? *BJU Int* 2009;103:1414-6.
3. Elbaset MA, Ezzat O, Elgamel M, Sharaf M, Elmeniar A, Abdelhamid A, et al. Supranormal differential renal function in adults with ureteropelvic junction obstruction: Does it really exist? *Indian J Urol* 2020;36:205-11.
4. Chandrasekharam V, Srinivas M, Bal C, Gupta A, Agarwala S, Mitra D, et al. Functional outcome after pyeloplasty for unilateral symptomatic hydronephrosis. *Pedia Sur Int* 2001;17:524-7.
5. Kuyvenhoven JD, Ham HR, Piepsz A. Optimal time window for measurement of renal output parameters. *Nucl Med Rev Cent East Eur* 2002;5:105-8.
6. Eskild-Jensen A, Gordon I, Piepsz A, Frøkiaer J. Interpretation of the renogram: Problems and pitfalls in hydronephrosis in children. *BJU Int* 2004;94:887-92.
7. Morrisroe SN, Su RR, Bae KT, Eisner BH, Hong C, Lahey S, et al. Differential renal function estimation using computerized tomography based renal

parenchymal volume measurement. J Urol 2010;183:2289-93.

8. Ritchie G, Wilkinson AG, Prescott RJ. Comparison of differential renal function using technetium-99 m mercaptoacetyltriglycine (MAG3) and technetium-99 m dimercaptosuccinic acid (DMSA) renography in a pediatric population. Pediatric Radiology 2008;38:857-62.

---

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

**Received:** 23.07.2020, **Accepted:** 06.08.2020, **Published:** 01.10.2020

**Financial support and sponsorship:** Nil.

**Conflicts of interest:** There are no conflicts of interest.

Access this article online	
<b>Quick Response Code:</b>	<b>Website:</b>
	www.indianjurol.com
	<b>DOI:</b>
	10.4103/iju.IJU_431_20

How to cite this article: Elbaset MA, Osman Y. Author Reply Re: Elbaset MA, Ezzat O, Elgamal M, Sharaf MA, Elmeniar AM, Abdelhamid A, *et al.* Supernormal differential renal function in adults with ureteropelvic junction obstruction: Does it really exist? Indian J Urol 2020;36:205-11. Indian J Urol 2020;36:335-7.  
 © 2020 Indian Journal of Urology | Published by Wolters Kluwer - Medknow