ASIAN NUCLEAR MEDICINE BOARD

Seoul, South Korea, 2-4 Nov 2022

Application of a Categorical Classification for Assessment of Kidneys Undergoing Intervention with Obstructive Feature

[1]**Afroza Naznin**, [1,2]Azmal K Sarker, [1]Samira Sharmin, [1]Hosne Ara Rahman

[1]Institute of Nuclear Medicine & Allied Sciences, Mitford, Dhaka, Bangladesh

[2]Institute of Nuclear Medicine & Allied Sciences, Gopalganj, Bangladesh

Introduction

A semi-quantitative method is applied to describe the findings of Tc-99m DTPA renogram in terms of pelvicalyceal dilatation, obstruction and parenchymal functional status in categorical scales, with a view to generate reports that are more comparable, comprehensible and reproducible.

Material & method

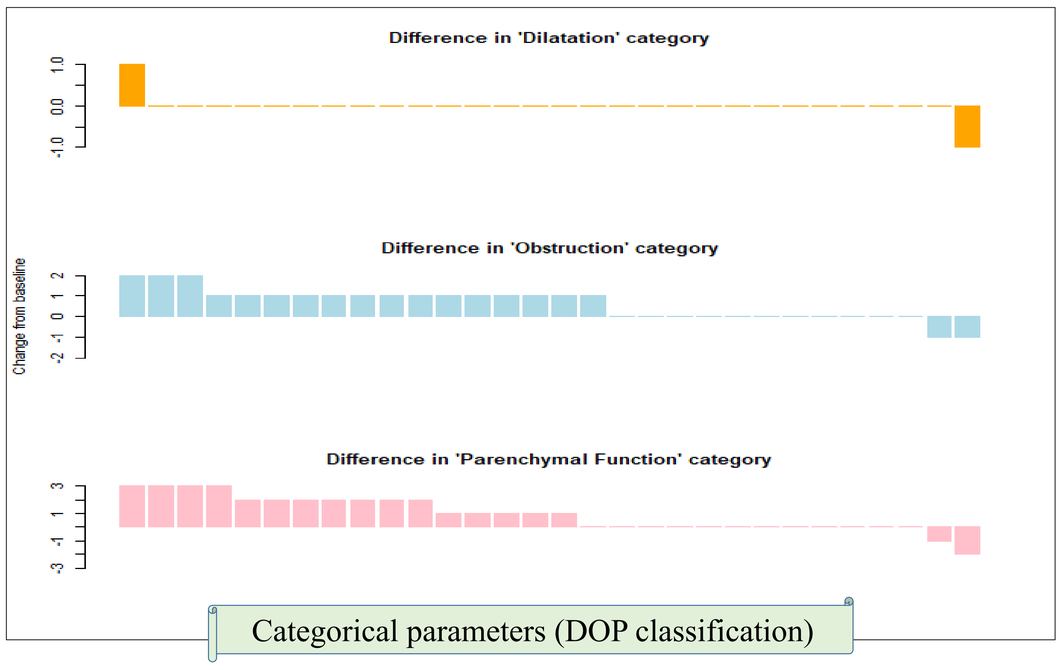
The study included 30 patients who underwent two-point dynamic radionuclide renogram using Tc-99m-DTPA before and after an intervention with the indication of obstructive feature in kidney. Findings were stated using this categorical classification instead of conventional reporting.

Table: Categorical classification used for kidneys with obstructive feature undergoing intervention

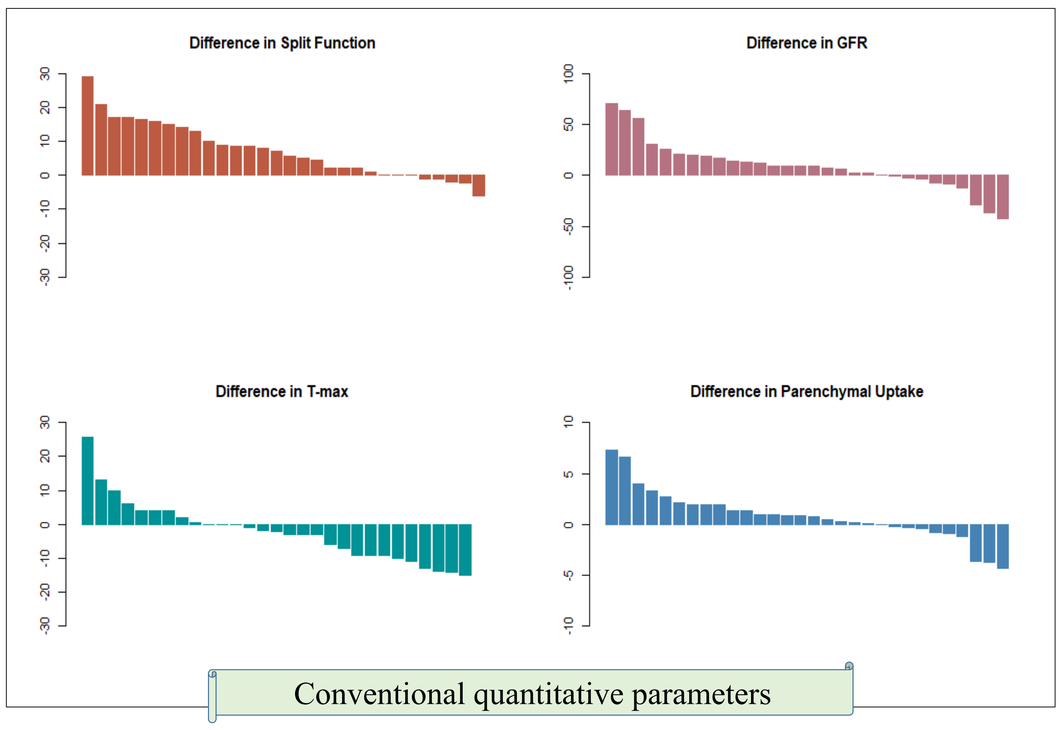
Dilation (D category)		Obstruction (O category)		Parenchymal function (P category)	
D0	Absent	**O0**	Absent	**P0**	GFR (SK) > 40 ml/min
D1	Present	**O1a**	FO + T-max ≤ 5	**P1**	GFR (SK) 30 - 40 ml/min
		O1b	FO + T-max > 5	**P2**	GFR (SK) 20 - 30 ml/min
		O2	Partial	**P3**	GFR (SK) < 20 ml/min
		O3	Complete	**Px**	Indeterminate
		Ox	Indeterminate		

Example: Big photon deficient area throughout study period – D1OxPx
FO- Functional obstruction, SK- Single kidney

Changes in the parameters derived from dynamic radionuclide renogram between the baseline and follow up



Categorical parameters (DOP classification)



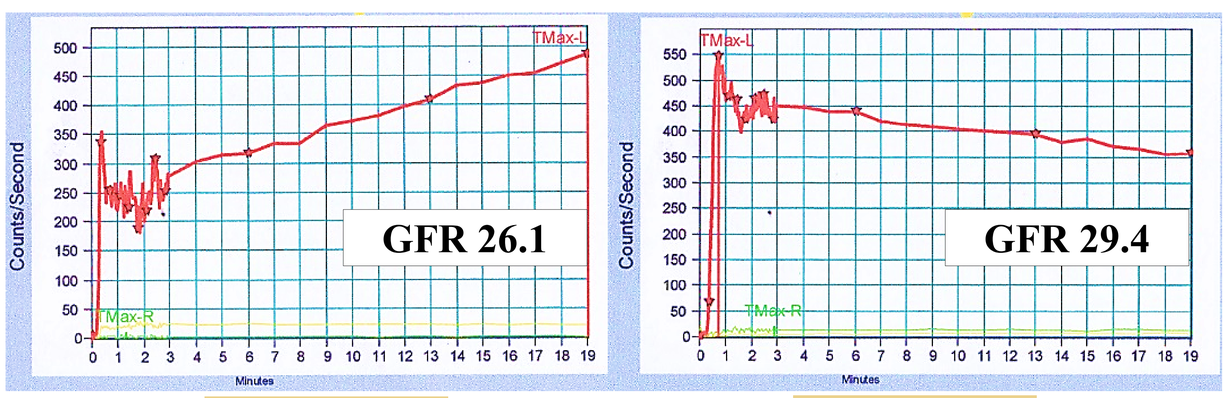
Conventional quantitative parameters

Result

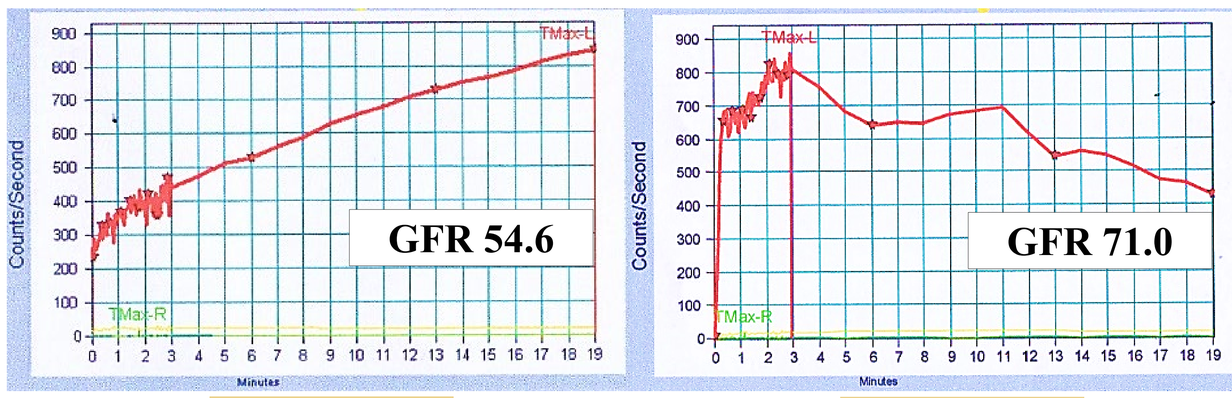
- Total 30 kidneys from 30 patients aged 21.6 ± 14 years
- Male 22 (23.4±10.4 years), Female 7 (21.1±15.1 years)
- Left kidney (n=19), right kidney (n=10)
- Baseline → intervention: median one month
- Intervention → follow up: median 10 months

Conclusion

- Significant improvement across D, O and P categories (the kappa values show significant disagreement).
- No difference of outcome across the methods of intervention.
- May aid easy and fast comparison between pre and post intervention renal functional status.



D1O3P2 → D1O2P2



D1O3P0 → D1O0P0

For correspondence: Dr. Afroza Naznin, Institute of Nuclear Medicine & Allied Sciences, Mitford, Dhaka;
Email: afroza.naznin@yahoo.com