EP-353
Diagnostic role of geometric mean calculation of renal split function applicable in patients with kidney disease using dynamic renoscintigraphy

P. Korol[1], O. Shcherbina[1], M. Kostylev[2];
[1]Shupik National University of Health of Ukraine, Kiev, UKRAINE, [2]Shalimov National Institute of Surgery of Transplantation, Kiev, UKRAINE.

Aim/Introduction: The aim of this work was to evaluate whether it is possible, by Calculating the Geometric Mean (GM), to partially correct soft tissue damping artifact due to differences in kidney positioning. In this study, we assessed cleavage function by GM calculation in patients with normal and diseased kidney function and compared results from routine (posterior) imaging measurements. **Materials and Methods:** We reviewed sequential kidney scans using 99mTc-DTPA from 185 patients with posterior imaging. To calculate the GM region of interest, each kidney and background were drawn by 2 experienced operators without seeing the clinical data of the Hermes HybridViewer V2.6, similar to a clinical routine. Serum creatinine closest to the date of the renal scan was also obtained. 7 patients were excluded due to poor image quality and 20 cases with renal lesions were analyzed separately. An additional 18 patients were excluded due to lack of recent creatinine (most with normal remote creatinine). The posterior split function of the right kidney was calculated and GM was compared with Student's t-test. Continuous variables were presented as mean ± standard deviation. **Results:** Of 140 patients with a kidney scan (age: 48.3 ± 9.4, F:M=71:69), 78 had normal creatinine (71.3±11.2, group 1) 62 had an abnormal creatinine level (141.1±81.4, group 2). interval 31.6±27.8 days. The mean split function of the right kidneys was 55.4±9.6% of GM compared with 54.8±9.2% from posterior for group 1 and 51.5±10.5% of GM, compared with 50.4±9.8% from posterior for group 2. Difference on the right kidney split function between GM and posterior view was 2.74±1.23% for the 1st group and 4.18±1.89% for the 2nd group (t-test, p=0.003). There was a moderate to strong correlation between kidney split produced by both operators (Pearson correlation coefficient: 0.71). Of 20 patients with kidney tumors difference between GM and rear view split function amounted to 7.1±3.9%. **Conclusion:** The GM method is applicable to patients with normal and abnormal kidney function. The study showed that the GM calculation could be more clinically significant in patients with renal insufficiency than normal. function (difference 2.7% vs 4.2%). Given the absence of additional radiation exposure or additional imaging time for the geometric method, it is recommended to use it in the routine assessment of renal split function.