EP018 A prospective study of novel mathematical analysis of the contrast-enhanced computed tomography vs renal scintigraphy in renal function evaluation

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Introduction & Objectives: Whilst renal scintigraphy (RS) can be associated with interobserver variability, it remains the standard method of evaluating split renal function. Aim: To compare the efficacy of the novel technique of kidney function assessment and renal scintigraphy.

Materials & Methods: For this prospective single-arm study we recruited patients who were recommended dynamic renal scintigraphy with ^{99}mTc-DTPA (diethylenetriaminepentacetate). After scintigraphy, mathematical analysis of computed tomography (MACT) was done in all patients, by a single person (SK) blinded to RS results.

Results: The study included a total of 97 patients with a mean age of 50.9 (range, 23-78) years. From this sample, 65 were females and 32 males. All patients underwent both RS and contrast-enhanced computed tomography for further MACT in 2016-2018. CT results were found to be similar to renal scintigraphy results with a Pearson correlation coefficient of 0.945 ($p < 0.001$). Substantial similarities in renal plasma flow for both kidneys were also observed (0.815, $p < 0.001$).

Conclusions: MACT proved feasible, effective, and safe in estimating renal function. Its results are closely correlated with RS findings and could be easily integrated into surgical practice.