

^{99m}Tc -MAG3: Review of pharmacokinetics, clinical application to renal diseases and quantification of renal function

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About 14 years have passed since Fritzberg et al. developed ^{99m}Tc -MAG3 in 1986. The biological properties of this radiopharmaceutical are somewhat different from radioiodine labeled hippurate: it exhibits higher protein binding, slower blood clearance, higher extraction efficiency by tubular cells and larger excretion into the bile than the latter. Nonetheless, it has been widely used as the agent of choice for renal scintigraphy, diuresis renography, captopril augmented renography, and renal transplant. Renal scintigraphy with ^{99m}Tc -MAG3 can provide excellent image quality even in the presence of severely decreased renal function. ^{99m}Tc -MAG3 is also used as an alternative to radio-hippurate for quantitative measurement of effective renal plasma flow. In this review, I focused on its pharmacokinetics, simplified quantitative methods and clinical application in renal diseases.

Key words: ^{99m}Tc -MAG3, pharmacokinetics, renovascular hypertension, plasma sample method