ORIGINAL ARTICLE

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Acetazolamide assisted Tc-99m MAG3 renography to assess renal blood flow reserve

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Objective: The present study examines whether or not baseline and acetazolamide (ACZ) Tc-99m MAG3 renography can assess renal blood flow reserve. ***Methods:*** Renography proceeded for 50 min after sequential injections of 370 MBq Tc-99m MAG3 for baseline renography and 10 min after a 1,000 mg injection of ACZ for ACZ renography. Effective renal plasma flow of renal cortex (cERPF) in each kidney and the percentage change in cERPF of those parameters (ΔERPF) were obtained before and after the administration of ACZ in 10 subjects without hypertension or diabetes (normal group), in 10 with essential hypertension (hypertensive group) and in 10 who had Type 2 diabetes with hypertension (diabetic group). A placebo test was performed in the 10 without hypertension or diabetes using distilled water instead of ACZ (placebo group). ***Results:*** The placebo test performed in the 10 without hypertension or diabetes using distilled water instead of ACZ indicated that the parameter variance between the two types of renogram was below 3.2%. The cERPF of baseline and ACZ Tc-99m MAG3 renography and ΔERPF in the normal, hypertensive and diabetic groups were 89 ± 10 and 110 ± 10 m*l*/min, 89 ± 14 and 117 ± 22 m*l*/min, 100 ± 23 and 112 ± 23 m*l*/min, respectively, and $24.5 \pm 13.5\%$, $26.0 \pm 9.7\%$ and $12.3 \pm 11.1\%$, respectively. The difference in the cERPF value was significant in the normal and hypertensive groups whereas this did not change in the diabetic group before or after ACZ administration. ***Conclusions:*** We suggested that the ΔERPF determined by baseline and ACZ Tc-99m MAG3 renography is a useful parameter for assessing renal blood flow reserve.

Key words: acetazolamide, vasoreactivity, microangiopathy, Tc-99m MAG3 renography