Annals of Nuclear Medicine Vol. 17, No. 2, 149–152, 2003

Bartter's syndrome and captopril scintigraphy: a case report

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We report a case of a woman who came to our attention because of hypokalemia, hyperreninemia and hyperaldosteronemia but with normal blood pressure. Under suspicion of a normotensive renal artery stenosis captopril and baseline scintigraphies were performed. Captopril scintigraphy demonstrated a bilateral progressive retention of radiopharmaceutical without significant excretion. The baseline study revealed a complete normalization of the scintigraphyc picture. A Magnetic Resonance Angiography (Angio-MRI) performed to evaluate renal arteries gave completely normal results. On the basis of the clinical picture and imaging findings a diagnosis of Bartter's syndrome was formulated. Renal function in Bartter's syndrome patients is maintained by hyperactivation of the renin angiotensin system. Acute administration of captopril in these patients induces an increase of renal plasma flow whereas it has no effects on glomerular filtration rate thus inducing a decrease of the filtration fraction: post captopril renal scintigraphy of our patient depicted exactly this feature. Although the diagnosis of Bartter's syndrome is based on the clinical picture and biochemical abnormalities, scintigraphic tests could be useful in differentiating Bartter's syndrome from other causes of hypokalemia.

Key words: Bartter's disease, radioisotope renography, technetium-99m MAG3, captopril, magnetic resonance angiography