

Aliskiren improve kidney morphology in rats with renovascular hypertension

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Kidney disorder may be a cause of hypertension, which may, in turn, cause renal disease, so hypertension and kidney are closely linked. Alteration in the renin angiotensin aldosterone system (RAAS) is one of the mechanisms of hypertension and consequently renal disease. Blood pressure regulation can be obtained with the use of pharmacological agents that exert effects on the RAAS. Aliskiren represents a new class of antihypertensive drugs, the first direct renin inhibitor approved for marketing. The study of aliskiren effects is of great interest since it acts by blocking the RAAS in its origin. The objective of this work is to conduct a study after treatment with aliskiren in kidney morphophysiology of rats with renovascular hypertension. Two-kidney-one-clip (2K1C) was used to obtain animals with renovascular hypertension. After the surgery, animals were divided into three groups: control, 2K1C or 2K1C + aliskiren. After five weeks the animals were anesthetized and their kidneys were removed, processed and analyzed by hematoxylin and eosin, Weigert resorcin fuccina, Alcian Blue and Picro Sirius Red staining and by for anti-VEGF, iNOS, eNOS and renin immunostaining. It was found fibrosis in the cortical and medullar area, loss of glomerular, capsular and tubular structures, increased amount of microfibrillar fibers and decreasing amount of glycosaminoglycans in 2K1C animals compared to control and 2K1C + aliskiren animals. It was observed increased expression of VEGF, eNOS, iNOS and renin in the kidneys of 2K1C animals compared to control and 2K1C + aliskiren animals. The aliskiren seems to exert a beneficial effect on the morphology of the kidneys of rats with renovascular hypertension.

Biography

Angélica Beatriz Garcia Pinto received her Ph.D. in 2011 and performs her postdoctoral research in Universidade do Estado do Rio de Janeiro, Brazil. She is a Professor from the Universidade do Estado do Rio de Janeiro, where she teaches histology and embryology to biology, nursing and dentistry undergraduate students and cellular ultra structure, histology and embryology to graduate, Masters and Doctors students. Additionally, she has published 5 papers in Journals as Clinics, Journal of molecular Histology and Canadian Journal of Physiology and Pharmacology.

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