

# The Association of Aberrant Renal Vessels with Hypertension among Patients with Hydronephrosis in Albania

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## Abstract

**Purpose:** The data related to the clinical implications of aberrant (or accessory or multiple) renal arteries are not very abundant, and in some cases are even contradictory. In this context our aim was to determine whether the presence of aberrant renal vessels is associated with blood pressure in a group of patients diagnosed with hydronephrosis in Albania

**Material and methods:** This study included 81 patients diagnosed with hydronephrosis who showed up at the Urology Service of the University Hospital Center “Mother Teres” in Tirana, Albania, during 2010-2014, for further treatment, follow-up and management. The presence of aberrant renal vessels was determined by a range of imaging examinations. Blood

pressure was measured upon hospitalization and mean blood pressure among patients with and without aberrant renal vessels was compared using non-parametric tests and binary logistic regression.

**Results:** The mean age of participating patients was 27.7 years  $\pm$  13.78 years (51.9% males). The overall prevalence of aberrant vessels in patients with hydronephrosis in the study was 42%. Meanwhile, the prevalence of aberrant renal arteries was 29.6%, and the prevalence of aberrant renal veins was 18.5%. 32.1% of all patients with hydronephrosis had one type of aberrant renal vessel (artery or vein), while 9.9% had both types of aberrant renal vessel (both artery and vein). In 9.9% of cases aberrant renal

vessels were located in the right kidney, in 30.9% of the participants they were located in the left kidney and in 1.2% of all participants the aberrant vessels were present in it both kidneys simultaneously (bilateral). There were no statistically significant differences in mean systolic and diastolic arterial pressure between all groups under study; however, mean systolic and diastolic arterial pressure tended to be higher in patients with aberrant renal veins and those with bilateral aberrant renal vessels compared to patients without these conditions, respectively, but these differences were not statistically significant ( $P>0.05$ ). After controlling for the confounding effect of age and gender still there was no statistical association between systolic and diastolic blood pressure and aberrant renal vessels.

**Conclusions:** Our findings suggest that there is no statistical association between the presence of aberrant renal vessels and blood pressure among patients with hydronephrosis.

**Keywords:** Albania, aberrant renal vessels, diastolic blood pressure, prevalence, systolic blood pressure.