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ABSOLUTE AND RELATIVE RENAL LENGTH IN CHRONIC KIDNEY DISEASES

Jovana Čukuranović Kokoris[1], Slobodan Vlajković[1], Miljana Pavlović[1], Braca Kundalić[1], Vladimir M. Antić[2], Rade Čukuranović[1,3]

University of Niš, Faculty of Medicine, Niš, Serbia[1]
University of Niš, Faculty of Sport and Physical Education, Niš, Serbia[2]
Clinical Center Niš, Clinic of Nephrology, Niš, Serbia[3]

Contact: Jovana Čukuranović Kokoris
University of Niš, Faculty of Medicine
Bul. Dr. Zoran Đinđić Blvd. 81, 18000 Niš, Serbia
E-mail: jovana.c85@gmail.com

The aim of the paper is to evaluate the significance of absolute and relative renal length in the diagnoses of several chronic kidney diseases (CKDs) in which kidney size changes in different manners during the disease course.

The study included 181 patients: 35 with Balkan endemic nephropathy (BEN), 31 with diabetic nephropathy (DN), 30 with primary glomerular diseases (GN), 30 with autosomal recessive polycystic kidney disease (ADPKD), and 58 healthy controls (C). Absolute renal length was the distance between two most distant points on their poles and it was measured ultrasonographically, and relative length was obtained as the ratio of renal length and body height (kidney/body ratio, KBR). In the statistical analysis, One Way ANOVA test was used to establish the differences in absolute lengths and KBR between the studied groups; χ^2 test was used to establish the differences in the number of examinees of male and female gender; correlation and linear regression analysis were used to assess the association between age of the examinees and absolute and relative parameters of kidney size.

The obtained results demonstrated that the average lengths of the right and left kidney were highest in ADPKD and lowest in BEN group. The average values of KBR of the right and left kidney showed a trend similar to that of average absolute lengths in all groups, except in GN and DN groups, in which absolute parameters of kidney size differed significantly from relative parameters. The correlation analysis showed that a significant negative correlation between age and absolute i.e. relative parameters of kidney size existed only in BEN group, but even in this case the differences between correlation coefficients of absolute and relative length of both kidneys were not statistically significant.

Based on the obtained results, we could not establish the advantage of absolute over relative kidney length and vice versa in the studied CKDs. Further studies of larger patient samples with better gender and age distribution are therefore warranted. *Acta Medica Medianae 2015;54(2):17-23.*

Key words: *absolute length, relative length, chronic kidney disease, ultrasonography*