

***МОРФО-ФУНКЦИОНАЛЬНЫЕ ИЗМЕНЕНИЯ ПОЧЕК
ПРИ ДИАБЕТИЧЕСКОЙ НЕФРОПАТИИ***

Гранина Е.В., Каримова З.М.

Харьковский национальный медицинский университет

Харьков, Украина

**MORPHOFUNCTIONAL CHANGES OF THE KIDNEYS
IN DIABETIC NEPHROPATHY**

Ghranyna E.V., Karimova Z.M.

Kharkiv National Medical University

Kharkiv, Ukraine

Diabetic nephropathy (DN) - A term describing a whole range of lesions in arteries, arterioles, glomeruli and tubules of the kidney, resulting from exposure to multiple products on the kidneys impaired carbohydrate and lipid metabolism, excreted by the kidneys in patients with diabetes mellitus (DM) in significant quantities, the leading cause of disability and mortality among patients with diabetes.

Objective. Determination of the morphological and functional changes in the kidneys of diabetic nephropathy in the age aspect.

Materials and Methods. Conducted a study on 50 cadaveric specimens of human kidneys using the method of variation statistics of kidney's cups' morphometry.

Results. Morphometric classification of renal dishes at NAM includes the characteristic of kidney cup diameter, height and volume. We confirmed that the upper calyx has scalloped arch shape of large diameter ($d = 11,3 \text{ mm} \pm 4,7$). She has a great height ($h = 14,8 \text{ mm} \pm 9,2$) and wide neck ($c = 7,2 \text{ mm} \pm 2,3$). It is the largest by volume: 1202 mm^3 . And also, that the front upper calyx has calotte average diameter ($d = 6,7 \text{ mm} \pm 2,3$) and an average height of ($h = 7,2 \text{ mm} \pm 3,1$), a narrow neck ($c = 5,0 \text{ mm} \pm 1,6$) and a small stable volume ($V = 14,8 \text{ mm}^3$).

Front average calyx has a round arch average diameter ($d = 7,4 \text{ mm} \pm 2,2$), and height ($h = 10,7 \text{ mm} \pm 5,1$) and narrow neck ($c = 4,8 \text{ mm} \pm 1,6$). The absolute value of the volume of the cup is $348,4 \text{ mm}^3$ and increases with age at NAM. Front lower calyx - average diameter ($d = 7,2 \text{ mm} \pm 2,3$) and a height ($h = 8,9 \text{ mm} \pm 4,6$) with a narrow neck ($c = 4,8 \text{ mm} \pm 1,8$). The absolute value of its volume: $275,2 \text{ mm}^3 - 307,1 \text{ mm}^3$. Rear upper calyx - average diameter of the arch ($d = 8,4 \text{ mm} \pm 3,0$) and a height ($h = 8,6 \text{ mm} \pm 4,5$) with a narrow neck ($c = 5,7 \text{ mm} \pm 2,1$) and small stable volume ($V = 500,0 \text{ mm}^3$). The rear average renal calyx has a cup mean diameter ($d = 7,2 \text{ mm} \pm 2,3$) and a height ($h = 10,7$

mm \pm 5,1) with a narrow neck (c = 5,1 mm \pm 1,9), average volume (V = 402,1 mm³), decreasing with age and NAM.

Rear lower calyx relates to cups average diameter (d = 7,2 mm \pm 2,2) and a height (h = 7,0 mm \pm 3,6) with a narrow neck (c = 5.3 mm \pm 2,3), small stable volume (V = 402,1 mm³). And also, the lower calyx - average diameter (d = 7,4 mm \pm 2,4) and a height (h = 8,6 mm \pm 4,6) with a narrow neck (c = 5.7 mm \pm 2.2) and average volume (V = 402,1 mm³); progressively decreases with age and NAM. The total volume of renal cups decreases with age to 33.1%. The absolute value of the average total volume decreases with 4699.2 mm³ to 3144 mm³ (decrease significantly $t > 3,0$; correlation coefficient with age $r = - 0,64$). The volume of the upper renal cup halved, and the bottom - three times. It is proved that the increase in capillary permeability and hemodynamic disturbance precede structural changes in the walls of capillaries. It is proved that microaneurysms are located on the periphery or in the center of the glomerulus, while dramatically narrowed or completely obstructs the lumen of the capillaries. Transforms of microaneurysms in nodules Kimmelstilla-Wilson (hyaline nodules) that contain a significant amount of mesangial cell nuclei and hyaline matrix.

Conclusion. NAM is the basis of nephrosclerosis of glomeruli, more diffuse, less nodosa. Morphometric method to determine the dynamics of functional and morphological changes in the kidney in diabetes, particularly in the age aspect.

