Massive blood flow through the kidneys which leads to the formation of large amount of glomerular filtrate can cause high concentration of toxic substances in the renal tissue. Literature data suggest adversary effect of coxibs (selective inhibitors of type-2 cyclooxygenase) on the kidneys, in extreme cases also the occurrence of acute renal failure during the therapy using drugs from that group [1, 2]. The above-mentioned implications made us start observations of the ultrastructure of some elements of renal corpuscle of animals receiving nonsteroidal anti-inflammatory drug.

The experiment was conducted on male rats of Wistar strain. The experimental animals received rofecoxib (VIOXX®, MSD, N.Y. USA) intragastrically administered through a tube, in the form of suspension in physiological saline (1ml) in the period of 4 weeks – experimental group I, and in the period of 8 weeks – experimental group II. The drug was administered in the maximum 24-hour dose (0,125mg/rat). Specimens of renal cortex were prepared for observation in (according to the standard method) in a transmission electron microscope.

In electron microscope images, renal corpuscles of experimental rats demonstrated altered ultrastructure. The following changes were visible: thickening of podocyte processes (Fig. 1) and derangement of endothelial structure consisting in the decrease of pores number. After 8-week drug administration the changes of renal corpuscle ultrastructure were more intensified; in many analyzed observation areas no secondary podocyte processes were observed. Podocytes leaned against the basilemma with wide flat processes, which created an impression that the cell body stuck directly to the capillary vessel.

The observed changes are in accordance with the observations and suggestions made hitherto relating to the influence of coxibs high doses on nephrons function and morphology [3, 4], they are confirmed by the image of altered renal corpuscles ultrastructure described in this paper.

References