

USAGE OF THE HIGH-FREQUENCY DOPPLER ULTRASOUND THE INTRAVESICAL APPLICATION FOR THE ASSESSMENT OF THE MICROCIRCULATION IN THE URINARY BLADDER WALL IN PATIENTS WITH DIABETIC CYSTOPATHY.

Hypothesis / aims of study

Diabetic cystopathy is a common complication of the diabetes mellitus. Majority researchers believe that the leading factor in the pathogenesis of diabetic cystopathy is the diabetic angiopathy. Blood flow abnormalities leads to endonevral hypoxia and peripheral neuropathy, morphological changes of the detrusor and to urothelium dysfunction. At the same time there are a few researches which assess the blood flow in the bladder wall in patients with diabetes mellitus. The purpose of this study was to examine the microcirculation in the urinary bladder wall in patients with diabetic cystopathy.

Study design, materials and methods

Blood flow in the urinary bladder wall was assessed in 11 women with diabetic cystopathy aged 52 to 67 years. The control group consisted of 10 women without diabetes mellitus and voiding dysfunction at patients with comparable age. Registration of blood flow in the bladder wall was performed using a high-frequency Doppler ultrasound using intravesical ultrasonic sensors with a frequency of 10 MHz. Blood flow was assessed in bladder triangle. The linear and volume blood flow were measured separately for the arterial, venous and capillary departments of the microvasculature.

Results

We have found significant differences in the microcirculation in the urinary bladder wall in women with diabetic cystopathy compared to the control group.

Interpretation of results

The decreased linear blood flow rate in arterial and venous microcirculation were revealed in women with diabetes cystopathy ($p < 0.02$). There were no differences in the volume blood flow parameters between the two groups ($p > 0.1$). There were no differences in linear and volume blood flow in the capillary section of the microvasculature as well.

Concluding message

The study showed feasibility usage of the intravesical Doppler ultrasound for the assessment of the blood flow in the urinary bladder wall in patients with diabetic cystopathy. Despite the small number of patients some differences in blood flow between the two groups of patients were found. It testifies to the expediency of the researchers continuation in this direction.

Disclosures

Funding: public financing **Clinical Trial:** No **Subjects:** HUMAN **Ethics Committee:** Local ethics committee of St. Peterburg State Medical University named after acad IP Pavlov **Helsinki:** Yes **Informed Consent:** Yes