Endoscopic Correction Method of Vesicoureteral Reflux by “LitAr” Material in Children

Introduction and Objective: The most promising for the correction of vesicoureteral reflux (VUR) in children is using materials that contribute to the formation of its own tissue at the implant site. Purpose of our work: to evaluate the effectiveness of using of “LitAr" material in the treatment of VUR in children.
Material and methods: “Litar” is biodegradable cytoactive nanometrical biopolymer-saline composite having a crystal size of 3 ÷ 4 and 44 nm. It causes the formation of the own normal connective tissue at the implant site. Using this material with antireflux mechanism, 45 subureteral injections were made to the children with VUR (I-IVgrade). Endoscopic treatment was carried out according to traditional methods (the "STING" technique) depending on the age of a child and on the grade of VUR and on the length of the intravesical segment of ureter from 1 to 4 ml of the suspensoid material. Treatment monitoring was conducted by laboratory analysis of urine, ultrasound examination on the 2-15-35-40th day, voiding cystourethrography (VCUG) in 3-12-24 months. Biotransformation of the material was controlled by CT scan at 6 months after injection.
Results: In 24 (53%) cases there was clinical recovery according VCUG. In 18 (40%) cases reduction of reflux degree was observed; in 7 (15%) patients, after repeated single injection of the LitAr" material, there was full recovery, 11 (24%) patients within 24-36 months after re-injection needed additional injection of the material. In 3 (6%) cases endoplasty was not effective. These patients (IV grade of VUR) underwent open antireflux surgery. Complications were not observed. During the CT scan in 42 (93%) patients the formation of connective tissue observed at the implant site.
Conclusions: The effectiveness and safety of endoscopic method implantation of the biodegradable cytoactive composite with nanocrystals ("LitAr") in the treatment of VUR in children are presented.