Role of BioR as Adjunctive Therapy Following Nephrolithotomy

Introduction and Objectives: It was demonstrated by many studies the effectiveness of immunomodulatory medicine BioR (spirulina). Initially we aimed to perform the same study to assess the immunological effects of adjunctive therapy with BioR in postoperative management of Chronic Calculous Pyelonephritis in staghorn or multiply complicated stone disease. Therefore the renal function recuperation after nephrolithotomy (NL) in this group of patients additionally was interested in. Hereby, it was evaluated and we compared the renal function changes in patients who underwent NL for complicated kidney stones disease with chronic pyelonephritis treated postoperative standard versus standard with adjunction of Bior.
Material and Methods: A study was performed on 78 patients with staghorn nephrolithiasis or complex lithiasis who underwent nephrolithotomy, for whom it was indicated, between January 2008 and April 2012 in our urological department. The presence of nephrolithiasis was assessed by ultrasound and/or radiological examination of the kidneys and upper urinary tract. Patients were divided in two groups: 38 patients in which standard medical postoperative treatment were performed and 40 patients who were offered standard therapy with adjunction of BioR (ampull. 0,5% - 1 ml i/m QD – 10 days, caps. 5 mg BID – 30 days). All patients underwent a dynamic renal radioisotope scan using 99m Tc DTPA to quantify the total and split renal functions, and estimate the glomerular filtration rate (GFR). Patients were analyzed for age, sex, body mass index, body surface, creatinine and GFR (total and split) prior and 6 months after surgery, prior stone treatment, concomitant diseases and possible side effects of medication were observed. Study exclusion criteria: associated morbidity (cardiovascular diseases, chronic kidney diseases, diabetes mellitus etc.).
Results: All patients completed the study and none were excluded due to side effects. No significant differences were found between the groups for age, gender, stone size, preoperative total and split GFR, etc. There were non-significant changes between preoperative GFR (total – 88,7±22,5 ml/min/1,73m2, involved kidney - 65,4±22,1 ml/min/1,73m2) and postoperative (total – 93,4±20,7 ml/min/1,73m2, involved kidney - 69,8 ± 20,6 ml/min/1,73m2) in the group of patients that underwent standard postoperative therapy. The significant increase of total and split GFR was obtained in group with adjunction of BioR (total - from 86,8±20,5 to 98,4±21,1 ml/min/1,73m2, $p < 0,05$; involved kidney – from 64,5±19,8 to 78,6±22,4 ml/min/1,73m2, $p<0,01$, pre- and postoperative respectively [t-test]).
Conclusions: The adjuvant therapy with BioR allows increase renal function after nephrolithitomy in patients with staghorn or complex nephrolithiasis and prevents renal function impairment. The BioR demonstrated no clinically significant adverse effects, while proving to be a safe and effective treatment option.