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URODYNAMIC EVIDENCE OF EFFECT OF INTRAVESICAL HEPARIN FOR WOMEN WITH INTERSTITIAL CYSTITIS

Aims of Study: To investigate the urodynamic changes after intravesical heparin therapy in the patients with interstitial cystitis and frequency urgency syndrome

Methods: Fifty women with severe frequency, urgency, and suprapubic pain were enrolled in this prospective study. They were investigated by videourodynamic study and potassium chloride (KCl) test after proven no UTI or bladder outlet obstruction. All the patients had positive KCl test were treated by intravesical heparin instillation 25000 units twice a week for a course of 3 months. No other medication was given. At the end of treatment, a second videourodynamic study and KCl test were performed and the IPSS symptom score was used for the subjective improvement scoring. For the patients who dropped out of the study, the causes were recorded. The results were also compared between those who had classical or early interstitial cystitis (IC) proven by cystoscopic hydrodilatation and those who had not.

Results: In the 50 women, 32 (64%) completed the treatment course and 18 (36%) dropped out. For the patients who dropped out 10 received more than 4 treatments and no remarkable improvement was experienced, 4 had acute cystitis during the treatment course, 4 felt much improved after 6 treatments but they refused further treatment. Among the 32 women who completed the treatment course 28 (87.5%) experience significant improvement in the bladder symptoms whereas 4 felt no definite improvement. The KCl test became negative in 18 (56%), positive but improved in 8 (25.2%), and remained positive as baseline in 6 (18.8%). Significant improvements of IPSS (9.3 ± 4.0 v 20.5 ± 4.6 , $p=0.000$) and nocturia (2.5 ± 1.0 v 6.2 ± 2.3 , $p=0.000$) were found after treatment. Urodynamic parameters also showed significant improvement in the first sensation of filling (145 ± 61 v 91 ± 44 ml, $p=0.000$) and cystometric capacity (302 ± 97 v 254 ± 105 ml, $p=0.017$). No significant difference was found in residual urine, maximum flow rate, and detrusor pressure. For those who had persistent positive KCl test, intravesical heparin treatment was continued for another 3 months in 10 patients. Among the 10 patients, 6 showed a negative KCl test after the treatment and 4 remained positive although the subjective symptoms improved. Among the 32 patients, 4 had proven to have classical IC, 9 had early IC, whereas 19 did not. The heparin treatment was successful in 6 early IC (67%) and 18 (95%) who did not prove to have IC. Treatment was failed in all 4 patients with classical IC. The total success rate was 75% for the patients who completed the treatment.

Conclusions: IC and frequency urgency syndrome may have an increased permeability of urothelium which results in increased bladder sensitivity during filling or distention. Intravesical heparin instillation can effectively correct the mucosal dysfunction and allow the bladder wall to repair. Adequate dose of heparin and duration of treatment are important for a successful treatment. Classical IC might have pathological changes in the bladder interstitium rather than mucosal dysfunction alone, so that the result of treatment was not as satisfactory as early IC or frequency urgency syndrome.