

Infections/Inflammation of the GU Tract: Interstitial Cystitis
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QUANTITATIVE FLUORESCHEIN UPTAKE FOR EVALUATION OF INTERSTITIAL CYSTITIS BLADDER PERMEABILITY

Robert D Mayer, Ronald W Wood, Rochester, NY*

Introduction and Objective: An abnormality of urothelial permeability permitting substances in urine to cause local irritation has been proposed as a mechanism of Interstitial Cystitis (IC). We undertook a study to evaluate Quantitative Fluorescein Uptake from the bladder as a diagnostic parameter of abnormal permeability barrier function in IC. **Methods:** Twelve patients with IC and 11 controls were recruited; parameters included medical history, O'Leary Sant symptom and problem index scores, and a voiding diary. Fluorescein (10 mg/ml; 50 or 100 ml) was instilled into the bladder followed by intensive plasma sampling q 1-2 minutes for 30 minutes for fluorescein. Due to some initial values being just above detectable levels the initial volume of instillation, 50ml was increased to 100 ml after the first 10 patients. **Results:** The IC patients were middle age (mean age 50 vs control 42) and had been diagnosed and treated for a mean of almost 5 years prior to entry into the study. The IC and control groups were significantly different in regards to symptoms: IC Symptom Index (mean- SD) : IC 10.2 ± 2.8 control 2.1 ± 1.9 ; IC Problem Index: IC 8.5 ± 3.9 , Control 0 ± 0 . Voiding diaries confirmed significantly different frequency (mean: IQR: IC 13.5: 8.5 Control 6.5: 0.5. The pattern of uptake was consistent with a two compartment system with the curve reaching a peak around 20 minutes despite the continued presence of dye in the bladder; increased volume of instilled dye did not appreciably increase maximal values. The uptake calculated at 20 minutes did not show evidence of increased uptake in the IC patients; rather, the control patients had greater uptake when corrected for plasma volume estimates based on BMI. Mean: IQR. IC 0.021: 0.009 vs Control 0.034 : 0.027. Using 2 way ANOVA for diagnosis and volume infused, the IC patients had significantly less uptake than controls. **Conclusions:** Unexpected findings- qualified by low numbers at present. IC patients appear to have less maximal uptake and less variability of uptake than control patients. Though the IC patients' age, prior therapy and long duration of symptoms may play a role in explaining the findings, the current results do not suggest that enhanced urothelial permeability is responsible for persistent symptoms in chronic IC patients. Supported by NIDDK 3 U01 DK065255-03S1

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