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BLADDER CAPACITY IN INTERSTITIAL CYSTITIS: DIFFERENCES BETWEEN AWAKE CYSTOMETRY AND HYDRODISTENSION UNDER ANESTHESIA

Aims of Study

Interstitial cystitis (IC) is a chronic, debilitating disease for which etiologic and pathophysiologic mechanisms remain poorly understood. While urinary frequency is a dominant presenting symptom, its underlying cause is unknown. Afferent sensory receptors in a "denuded" bladder mucosa are believed to play a role rather than alterations in the viscoelastic properties of the urinary bladder[1]. Awake cystometry is commonly performed followed by hydrodistension under general anesthesia to corroborate the diagnosis of IC. Despite this common practice, few studies have investigated the difference between awake cystometry (CMG), reflective of sensory pathways and hydrodistension under anesthesia (HYDRO) a measure of viscoelastic property. We sought to evaluate differences in bladder capacity between awake/CMG and anesthetized/HYDRODISTENSION in a cohort of female patients.

Methods

Between July 1998 and June 2002, we identified 34 female subjects who fulfilled the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) criteria for IC. Multichannel CMG was performed at medium fill of 60 ml/min (contrast fluid medium) in the standing position. Hydrodistension of the bladder was performed under general anesthesia at 80 cm of water pressure for two minutes. We compared the volumes (ml) at hydrodistension with the corresponding CMG. Differences were assessed using the t-test and $p<0.01$ were considered statistically significant.

Results

21 out of 34 patients had undergone both diagnostic examinations to be included in the study. Their mean age was 46 years (23-75 years). Mean time from onset of symptoms to diagnosis of the disease was 8.9 years. Symptoms at presentation included urinary frequency in 21 (100%), urgency in 16 (76%), nocturia in 16 (76%), pain in 13 (62%), obstructive voiding symptoms in 7 (33%), stress urinary incontinence in 6 (29%) and urge incontinence in 4 (19%). The average CMG bladder capacity was 257 ± 143 ml and HYDRO was 595 ± 257 ml.

MAXIMUM BLADDER CAPACITY: CMG VS HYDRODISTENSION

MAXIMUM CAPACITY	URODYNAMICS	HYDRODISTENSION
0-399 ml	19 patients	4 patients
400-799 ml	2 patients	15 patients
≥ 800 ml	0 patients	2 patients

Statistics : t=5.1, [99% C.I. (158.7, 516.8] p,0.001

Conclusions

Maximal bladder capacities at CMG and HYDRO are substantially different, with consistently smaller bladder capacities observed in awake CMG patients. These results support the contention that increased sensory outflow plays an important role in IC patients.

References

1- Batra, AK, Hanno PM, Wein AJ,: Interstitial cystitis. AUA update series, vol: XIX (2), 1999