

ORIGINAL RESEARCH—WOMEN'S SEXUAL HEALTH

Changes in Sexual Function of Women with Refractory Interstitial Cystitis/Bladder Pain Syndrome after Intravesical Therapy with a Hyaluronic Acid Solution

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ABSTRACT

Introduction. Intravesical instillation with a hyaluronic acid (HA) solution is an effective treatment for interstitial cystitis/bladder pain syndrome (IC/BPS), but its impact on sexual functioning of patients is not known.

Aim. The aim of this study was to evaluate the changes in sexual function of women with refractory IC/BPS who underwent a second-line intravesical HA therapy.

Methods. A total of 103 women diagnosed with refractory IC/BPS were enrolled in this prospective, multicenter study. Sexual function was evaluated using the short form of the Pelvic Organ Prolapse/Urinary Incontinence Sexual Function Questionnaire (PISQ-9). Bladder-related symptoms and bother were assessed by the Interstitial Cystitis Symptom Index (ICSI) and Interstitial Cystitis Problem Index (ICPI), and a pain visual analog scale (VAS), respectively. Data were analyzed with univariate methods or multivariate logistic regression analysis accordingly.

Main Outcomes Measures. Changes in PISQ-9, ICSI, ICPI, and pain VAS scores after treatment were assessed.

Results. Mean age and duration of symptoms was 43.6 ± 11.8 and 5.1 ± 5.0 years, respectively. ICSI, ICPI, and pain VAS scores were significantly ($P < 0.001$) improved after 1 month and 6 months of treatment. Of the 87 (84.5%) sexually active women evaluated, PISQ-9 total scores improved significantly ($P < 0.001$) from the baseline (mean 18.9 ± 6.4), after 1 month (20.4 ± 5.8), and 6-months (21.5 ± 5.6) of treatment. Significantly improved PISQ-9 items included “dyspareunia” ($P < 0.001$) and “negative reactions” ($P = 0.015$) during sexual intercourse, and “intensity” ($P < 0.001$) of sexual orgasms. After a logistic regression analysis, we found that a baseline PISQ-9 score was negatively correlated with the duration of IC/BPS symptoms ($P = 0.022$). Meanwhile, the changes in PISQ-9 scores were positively correlated with the reduction in ICSI scores after treatment ($P = 0.045$).

Conclusions. Intravesical HA is an effective treatment for refractory IC/BPS. A longer duration of IC/BPS symptoms may be a predictor of poor sexual function. However, intravesical HA may improve sexual function along with the reduction of IC/BPS symptoms. **Hung MJ, Su TH, Lin YH, Huang WC, Lin TY, Hsu CS, Chuang FC, Tsai CP, Shen PS, and Chen GD. Changes in sexual function of women with refractory interstitial cystitis/bladder pain syndrome after intravesical therapy with a hyaluronic acid solution. J Sex Med 2014;11:2256–2263.**

Key Words. Sexual Dysfunction; Interstitial Cystitis; Bladder Pain Syndrome; Intravesical Therapy; Hyaluronic Acid; Dyspareunia

Introduction

In 2002, the International Continence Society (ICS) defined interstitial cystitis (IC) or painful bladder syndrome (PBS) as a clinical syndrome characterized by the complaint of suprapubic pain related to bladder filling, accompanied by other symptoms such as increased daytime and nighttime frequency, in the absence of proven urinary infection or other obvious pathology. The society believes PBS to be a preferable term to IC, as IC is a specific diagnosis that requires confirmation by typical cystoscopic and histological features [1]. However, Warren et al. found that only 66% of patients with PBS or IC were diagnosed with IC using this definition [2]. More recently, the European Society for the Study of Interstitial Cystitis (ESSIC) proposed a new nomenclature, i.e., bladder pain syndrome (BPS) and a classification system for IC. The classification system was based on findings at cystoscopy with hydrodistention and morphologic findings in bladder biopsies [3]. This comprehensive criteria to define IC/BPS has been increasingly used by researchers to enroll homogeneous patient populations for clinical and laboratory studies [4].

IC/BPS mainly affects premenopausal, middle-aged women. An estimation of the prevalence at this time appears to be about 300 per 100,000 women and a male prevalence of 10–20% of the female estimate [4]. The average age of disease onset was around 32–49 years old [5,6]. Sexual well-being should be a main therapeutic concern for this patient group. A great proportion of women with IC/BPS experience dyspareunia, often in conjunction with other forms of chronic pelvic pain [7,8]. Sexual dysfunction has been shown to negatively affect the quality of life in this patient group and may progress with age [9–11]. There is no doubt that sexual functioning should be a salient therapeutic target in the multidisciplinary treatment of patients with IC/BPS. A study by Nickel et al. suggested that effective treatment of IC/BPS by oral pentosan polysulfate also improved sexual function [12].

Despite decades of basic and clinical research, the etiology of IC/BPS remains obscure. Multiple treatment modalities are therefore available to treat one or more pathological processes identified in this patient population [4,13]. Bladder instillation of hyaluronic acid (HA) for glycosaminoglycan substitution in bladder urothelial defects is predominant in IC/BPS therapy. Other agents also include chondroitin sulfate, heparin, and pentosan polysulfate [13,14]. In a recent review of intravesi-

cal therapy, bladder instillation with HA seems to be one of the best-performing treatment, with a weighted response rate of up to 76% (n = 351, range 30–86%) [14]. Because of its invasiveness, intravesical therapy is usually used as a second-line treatment. However, intravesical administration of HA has been associated with a very good safety profile [15–20]. Intravesical HA has demonstrated both immediate efficacy [15,16] and a maintenance effect [17] in the treatment of IC/BPS. HA has been used as either a mono-therapy [15–17] or in combination with other treatment modalities [18–20] to treat IC/BPS effectively. However, till now, its impact on sexual function of patients with IC/BPS has not yet been evaluated.

Aims

In this study, we hypothesized that a second-line intravesical therapy using an HA solution may reduce bladder-related symptoms and bother in women with refractory IC/BPS and, therefore, improve their sexual function. In order to test our hypothesis, we aimed to (i) enroll a homogeneous patient group for research by using the strict criteria given by the ESSIC; (ii) treat all patients with a standard protocol of intravesical therapy with an HA solution and evaluate the outcome by a standardized composite questionnaire; and (iii) analyze treatment results and associated factors.

Methods

This was a prospective, multicenter study conducted from January 2011 through December 2012 at six tertiary referral hospitals in Taiwan. Approval for this clinical trial was obtained from an institutional review board and ethics committee (10MMHIS183). The diagnosis of IC/BPS was based on symptoms, cystoscopic findings, and the exclusion of other diseases according to ESSIC criteria [3]. Bladder biopsy was not routinely performed but only done for ruling out suspicious bladder pathology. All patients included were previously treated with oral medications, with or without bladder hydrodistention, and were refractory to treatment that necessitated referral. These oral medications included pentosan polysulfate, nonsteroid anti-inflammatory drugs, tri-cyclic antidepressants, and anticholinergics, etc.

All patients gave informed consent before participating in this study and underwent treatment with a standard protocol of HA bladder instillation. Pretreatment evaluation included an inter-

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