



Case Report

A Novel Use of Cyclobenzaprine and Hyoscyamine (BLAVACARE™) Impregnated Vaginal Suppositories for the Symptomatic Treatment of Interstitial Cystitis, Bladder Spasms, and Painful Bladder Syndrome

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Abstract: Interstitial Cystitis and Painful Bladder Syndrome are chronic conditions that are associated with urinary frequency, urgency, pain, and nocturia. The etiology of IC/PBS is not clearly understood, therefore diagnosis and treatment can be challenging. IC/PBS greatly affects the quality of life in several ways. In this report, we present the case of a patient with longstanding interstitial cystitis symptoms who was successfully treated with a novel approach after failing treatment established by the current guidelines in the management of IC/PBS. This case illustrates the complex nature of this syndrome and offers a new treatment approach that can potentially change the way IC/PBS are medically managed.

Keywords: interstitial cystitis; painful bladder syndrome; bladder pain; dyspareunia; vaginismus; urethral spasms; bladder spasms

1. Introduction

Interstitial cystitis (IC) also known as painful bladder syndrome (PBS) is a chronic debilitating condition that can significantly diminish a patient's quality of life. IC/PBS affects woman at a greater rate than males with a prevalence of 52–500/100,000 in females compared to 8–41/100,000 in males [1]. Treatment options range from behavioral to pharmacological to surgical but still the majority of patients remains with unsatisfactory treatment results. Current guidelines start with conservative therapies including behavioral modifications, education on normal bladder function, and what is known about IC. If behavioral modifications fail, pelvic floor therapy is usually then recommended. The next step is adding on medications such as amitriptyline, cimetidine, hydroxyzine, or pentosan polysulfate. Intravesical treatment options include dimethylsulfoxide, heparin, or lidocaine administration. If the intravesical treatment options fail, low-pressure hydrodistension can be trialed if the patient is still not adequately controlled. If hydrodistension fails, one can try intradetrusor botulinum toxin A. Failure of the intravesical botox injections leads to a trial of oral cyclosporine A. The last line of treatment listed on the guidelines is major surgery (substitution cystoplasty and urinary diversion with or without cystectomy). Treatment should be individualized for each patient and multiple, simultaneous treatments may be necessary. As physician and patients become more aware of this condition, there will likely be increasing diagnoses of IC/PBS which will hopefully lead to a better understanding of the pathophysiology and more effective treatments.

2. Case Report

KG is a 43-year-old female with a longstanding history of interstitial cystitis and painful bladder syndrome. This has been ongoing for a number of years and is worsening. We have taken care of the patient for approximately 4 years with no significant improvement in her symptoms. She has tried several medications to relieve her painful urinary symptoms, dyspareunia, vaginismus, urinary frequency, and urgency. These medications include antimuscarinics, beta-3 agonists, antispasmodics, pyridium, benzodiazepines, antidepressants, gabapentin, pregabalin, and pentosan polysulfate.

In addition to the trial of medications the patient has had numerous office procedures performed including cystoscopy with hydrodistention, pelvic floor physical therapy, trial of sacral neuromodulation with bladder installations of dimethylsulfoxide (DMSO), lidocaine, kenalog, and pyridium. Despite the amalgam of procedures and medications the patient has had in the past, she has not achieved her desired analgesic goal.

Realizing traditional methods have not been working for this patient, the decision was made to attempt a different approach to the treatment of interstitial cystitis, dyspareunia, and painful bladder symptoms. We combined 10 mg of Flexeril and 0.125 mg of hyoscyamine into a vaginal suppository with glycerin for use every 12 h as needed. Flexeril acts to reduce tonic somatic motor activity leading to reduction in muscle spasms in the urethral external sphincter. Hyoscyamine, an antimuscarinic, blocks the action of acetylcholine at parasympathetic sites preventing spasming of the bladder and internal urethral sphincter. When the combination of these two medications is applied locally, as a vaginal suppository, they complement one another by relaxing the detrusor muscle of the bladder and the urethral sphincters providing symptomatic relief of IC.

KG returned to the office 4 weeks after initiation of the suppository. This follow-up was unlike her other follow ups in the past, she was pleasantly surprised to have achieved the level of analgesia she desired. She self-reported a remarkable improvement in her quality of life and her ability to function. She also had a notable increase in her job productivity as she is no longer taking time off secondary to her discomfort. At her 8-week and 12-week follow-up visits she remained pleased with the medication and reported benefit from one suppository up to 12 h and she continues on a twice daily regimen as prescribed.

3. Discussion

Interstitial Cystitis/Painful Bladder Syndrome (IC/PBS) affect up to 5% of females in the U.S. and incur, on average, twice the health care costs as compared to women without IC/BPS. Interstitial Cystitis and Painful Bladder Syndrome are chronic conditions that are associated with urinary frequency, urgency, pain, and nocturia [2]. While the underlying etiology is poorly understood, IC/PBS differ significantly in the following aspect: interstitial cystitis is a chronic inflammatory disorder while bladder pain syndrome lacks the inflammatory component [3]. Several theories have attempted to explain the condition, indicating as causal factors inflammation and mast cell activation, urothelial dysfunction/GAG layer defects, increased levels of nitric oxide in the urine, depletion of Tamm-Horsfall Protein (THP) in the urine, and genetic/autoimmune causes. The lack of clear understanding of IC/PBS makes diagnosis challenging. Therefore, many patients go undiagnosed which subsequently has a negative impact on their quality of life [1].

With the current limited understanding of the potential etiology of IC/PBS, treatments have been selected in attempts to alleviate symptoms. Treatment regimens can include oral medications, intravesical therapies, pelvic floor therapy, anti-inflammatory and neural agents, in addition to sacral neuromodulation. Traditionally the treatment of IC/PBS follows a six-stage ladder. First line treatment usually consists of patient education and lifestyle changes. The stages slowly progress through use of medications, and ultimately surgical intervention—of which sacral neuromodulation has shown great efficacy. The majority of IC/PBS cases [4] are controlled with lifestyle modifications and oral medications, as shown in Table 1. Of the oral medications, the most commonly used are amitriptyline, pentosan polysulfate sodium (PPS), and NSAIDs [5].

Table 1. Practice trends in the management of IC/PBS. This table illustrates the therapeutic approaches available and the percentage they are utilized, with dietary restrictions and oral agents as the leading treatments.

Practice Trends in the Management of IC/PBS (5)	
Therapeutic Approach	% of Use
Dietary Restrictions	93%
Oral Agents *	93%
Behavioral Modification	83%
Intravesical Therapy	83%
Biofeedback (relaxation phase)	63%
Physical Therapy	57%

* Oral agents include amitriptyline: 59%, PPS: 54%, NSAID 54%.

4. Conclusions

Interstitial Cystitis and Painful Bladder Syndrome can be debilitating if not effectively treated. There are numerous theories on the underlying mechanism with a wide variety of therapies available. These methods in various combinations can be successful, however there may be other women like KG who have not benefitted from the above-mentioned therapies. In this subset of patients, it is our hope that Blavacare (vaginal suppository with Flexeril 10 mg and hyoscyamine 0.125 mg) offers an alternative to traditional regimens giving these patient's their life back and greatly increasing their quality of life. In addition to medication, patients could still engage in behavioral modifications that have been helpful such as avoiding any dietary triggers or bladder irritants, continuing pelvic floor relaxation exercises and bladder training to amplify symptomatic control.

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