Chronic Prostatitis Is A Risk Factor For Erectile Dysfunction

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Citation

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Abstract

Objectives. Chronic prostatitis (CP) is associated with a variety of irritative and obstructive voiding symptoms. A significant number of patients also complain of sexual dysfunction. Ejaculatory dysfunction has been reported in more than half of patients with CP. Our goal was to determine whether CP is a risk factor for erectile dysfunction (ED).Methods. The Sexual Health Inventory for Men (SHIM) was administered in our clinic and online at the Interstitial Cystitis Network. 305 men completed the SHIM questionnaire, which included 47 controls (healthy volunteers), 150 men for evaluation of other urologic complaints (urology group), and 108 men being treated for CP. The total SHIM score and response to each SHIM question were analyzed using ANOVA.Results: In the control group, the mean SHIM score was 22.7 of a possible 25 points, and mean SHIM Q1 score was 4.0 of a possible 5 points. In the general urology group, the mean SHIM score was 21 and mean SHIM Q1 score was 3.3. In the CP group, the mean SHIM score was 17 and mean SHIM Q1 was 2.91. The results had statistical significance (p=0.05). Patients with CP have significantly lower total SHIM and SHIM Q1 scores when compared with controls and patients seen for urologic complaints. Patients with prostatitis are younger than those typically seen for general urologic complaints. Conclusion: CP is a risk factor for ED. Patients with CP should be questioned about ED as part of their routine urologic care and offered treatment options.

INTRODUCTION

Prostatitis is the most common urologic diagnosis in men under 50 years of age and the third most common urologic diagnosis in men more than 50 years of age, which accounted for 8% of urology office visits.[1] Prostatitis is defined pathologically as an increased number of inflammatory cells within the prostatic parenchyma;[2] however, prostatic inflammation does not need to be present to make the diagnosis of prostatitis.[3] In December 1995, the National Institutes of Health consensus meeting on prostatitis was held and a new classification system for the prostatitis syndromes was developed,[4] which reflects the infectious, inflammatory, and noninflammatory variants of prostatitis. The predominant symptoms of prostatitis include, but are not limited to, pain during or after ejaculation, pain in the perineum, penis, groin, testicle, low back or suprapubic region, frequent and urgent need to urinate, burning during urination, excessive urination at night, difficulty starting urinary stream, diminished urinary flow, and blood in urine or semen. In addition, a significant number of men with prostatitis complain of sexual dysfunction. Ejaculatory dysfunction has been reported in more than half of chronic prostatitis patients. Keltikangas-Jarvinen and colleagues demonstrated sexual dysfunction, in the form of decreased libido and erectile dysfunction (ED), in 52% of chronic prostatitis patients.[5] In a study by Mehik et al., ED was present in 43% of men with symptomatic prostatitis.[6]

Sexual health has an important role in a person's overall physical and emotional well-being.The authors administered the Sexual Health Inventory for Men (SHIM) questionnaire to determine whether chronic prostatitis is a risk factor for ED.

MATERIAL AND METHODS

The authors conducted a prospective, voluntary study using the SHIM questionnaire to assess for ED in chronic prostatitis. The SHIM questionnaire was administered in our clinic and online at the Interstitial Cystitis Network (www.ic-network.com). The questionnaire is composed of five questions regarding sexual health for men. Of the 305 men who completed the SHIM questionnaire, 47 were healthy volunteers (controls), 150 were seen in the urology

clinic for evaluation of another urologic complaint (urology group), and 108 were being treated for chronic prostatitis (Table I). Patients in the urology group included 70 with hematuria, 60 with nephrolithiasis, and 20 desiring elective sterilization.

Figure 1

Table 1: Demographics and patient groups

Parameter	Controls	Chronic Prostatitis	Urology Group	P Value (ANOVA)
Patients (#)	47	108	150	
Mean Age (years)	39	41.5	43	
Total SHIM	22.7	16.5	21	<0.05
Mean SHIM Q1	4.0	2.9	3.3	<0.05

ANOVA = analysis of variance

SHIM = Sexual Health Inventory for Men

STATISTICAL ANALYSIS

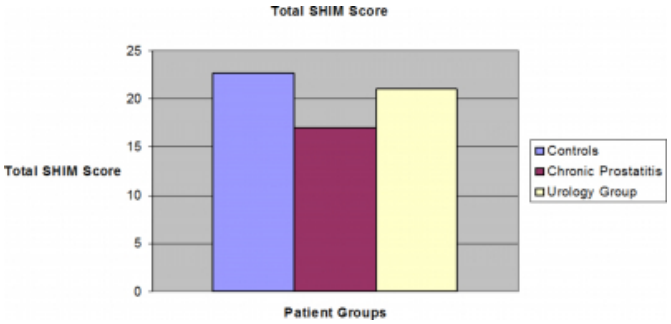
Determination of statistical significance was performed by analysis of variance (ANOVA).[7] Post hoc comparison of individual concentration means with the control was completed using the Tukey-Kramer Multiple Comparison test.[8] All data are reported in means and standard errors.

RESULTS

In the control group, the mean SHIM score was 22.7 of a possible 25 points, and the mean SHIM Q1 score was 4.0 of a possible 5 points. In the general urology group, the mean SHIM score was 21 and mean SHIM Q1 score was 3.3. In the chronic prostatitis group, the mean SHIM score was 16.5 and mean SHIM Q1 was 2.91 (Fig. 1). The results had statistical significance, with a p-value of < 0.05.

Figure 2

Figure 1: Total SHIM Score.

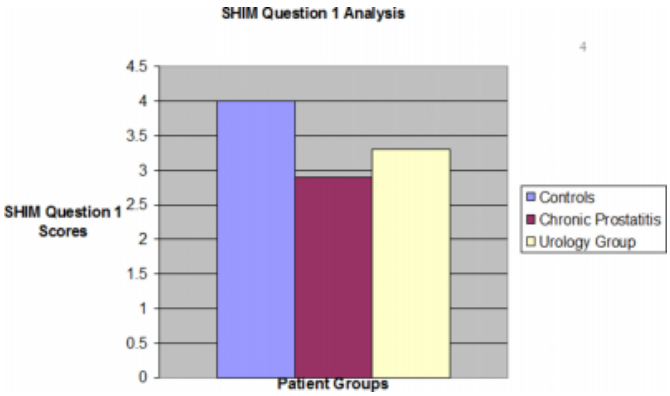


Patients with chronic prostatitis have lower SHIM scores than controls or general urology patients.

Patients with chronic prostatitis have significantly lower total SHIM and SHIM Q1 scores (confidence to keep an erection) (Fig. 2) when compared with controls and patients seen for general urologic complaints.

Figure 3

Figure 2: SHIM Questions 1 Analysis.



Patients with chronic prostatitis have lower scores on the SHIM question 1 than controls or general urology patients.

COMMENT

Some of the many well-established risk factors for ED are: atherosclerosis, hypertension, diabetes, low testosterone, hyperthyroidism, hypothyroidism, etc. In spinal cord injury, the degree of ED depends on the location and extent of the spinal lesion. Reflexogenic erection is preserved in 95% of patients with complete upper cord lesions, and only 25% of patients with complete lower spinal cord lesions.[9] Men with testosterone levels below 200 ng/dL have abnormal nocturnal erections.[10] Hyperprolactinemic patients have ED and associated low circulating levels of testosterone.[11] Diffuse atherosclerosis of the internal pudendal, common penile, and cavernous arteries has been reported in patients with a known history of atherosclerotic disease and leads to impotence secondary to the decreased cavernosal perfusion.[12] Patients with Peyronie's disease have plaque formation that may prevent the inelastic tunica albuginea from compressing the emissary veins and allow venous outflow from the cavernosal sinusoids.[13] In addition to these established risk factors for ED, this study demonstrates that chronic prostatitis is a risk factor for ED.

ED is more prevalent in chronic prostatitis patients. Brahler demonstrated a 34% ED rate in his population of chronic prostatitis patients.[14] Mehik et al. noted a 43% incidence of

ED in patients with chronic prostatitis.[6] In a population of 1768 chronic prostatitis patients, Liang and colleagues had 402 patients (23%) with ED.[15]

The mechanism by which chronic prostatitis results in ED is currently unknown. According to the classification system developed by the International Society of Impotence Research, the five main reasons for ED are: vascular insult, neurogenic lesions, anatomic abnormalities, endocrine causes, and psychogenic disturbance.[16] Using this classification system, few hypotheses may be drawn. Increased blood flow to the prostatic capsule, along with diffuse flow through the prostatic parenchyma, have been shown to occur in chronic prostatitis.[17] Although the prostate receives the majority of its blood supply from the prostatic artery—a branch off the inferior vesical artery—some blood supply is present from the middle hemorrhoidal and pudendal arteries. It may be possible that the increased blood flow to the prostate in chronic prostatitis is a result of shunting of blood toward the prostate and away from the corpora cavernosa.

Numerous studies have demonstrated inflammation associated with chronic prostatitis. Mehik et al. demonstrated a higher intraprostatic tissue pressure in category 3A patients (chronic inflammatory prostatitis) compared to category 3B patients (chronic noninflammatory prostatitis).[15] Krieger et al. demonstrated a higher prevalence of ED in patients with inflammatory chronic prostatitis compared to those with noninflammatory chronic prostatitis.[19] Does the inflammation and edema impinge on the surrounding neurovascular bundle leading to ED?

Depression and other psychological manifestations have been shown to be fairly common among chronic prostatitis patients.[20] Can we attribute ED in the subset of depressed chronic prostatitis patients to depression, or is ED directly related to pathologic changes seen in the prostate?

Finally, treatments for chronic prostatitis must be assessed. Whereas the most common medical treatments for prostatitis include antibiotics, -blockers, and/or anti-inflammatory agents, some urologists prescribe finasteride to prostatitis patients. Leskinen et al. demonstrated a decrease in prostatitis symptom scores in patients treated with finasteride.[21] However, the use of finasteride alone can result in ED. Some urologists have prescribed gabapentin and amitriptyline for relief of chronic pelvic pain. These two agents can contribute to ED, as well.

CONCLUSION

Chronic prostatitis is a risk factor for ED. Chronic prostatitis patients have lower SHIM scores than general urology patients. Whereas the mechanism of ED in chronic prostatitis is poorly understood, patients with chronic prostatitis should be questioned about ED as part of their routine urologic care, and offered treatment options for ED. Also, patients with ED should be evaluated for signs and symptoms of chronic prostatitis as an underlying cause of their ED.

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