ORIGINAL RESEARCH—EJACULATORY DISORDERS

Quantitative Sensory Testing of Peripheral Thresholds in Patients with Lifelong Premature Ejaculation: A Case-Controlled Study

Andrea Salonia, MD,*[1] Antonino Saccà, MD,*[1] Alberto Briganti, MD,* Ubaldo Del Carro, MD,† Federico Dehò, MD,* Giuseppe Zanni, MD,* Lorenzo Rocchini, MD,* Marco Raber, MD,* Giorgio Guazzoni, MD,* Patrizio Rigatti, MD,* and Francesco Montorsi, MD*

*University Vita-Salute San Raffaele—Department of Urology, Milan, Italy; †University Vita-Salute San Raffaele—Department of Neurology, Milan, Italy

DOI: 10.1111/j.1743-6109.2009.01276.x

ABSTRACT

Introduction. The main functional factors related to lifelong premature ejaculation (PE) etiology have been suggested to be penile hypersensitivity, greater cortical penile representation, and disturbance of central serotoninergic neurotransmission.

Aims. To quantitatively assess penile sensory thresholds in European Caucasian patients with lifelong PE using the Genito-Sensory Analyzer (GSA, Medoc, Ramat Yishai, Israel) as compared with those of an age-comparable sample of volunteers without any ejaculatory compliant.

Methods. Forty-two consecutive right-handed, fully potent patients with lifelong PE and 41 right-handed, fully potent, age-comparable volunteers with normal ejaculatory function were enrolled. Each man was assessed via comprehensive medical and sexual history; detailed physical examination; subjective scoring of sexual symptoms with the International Index of Erectile Function; and four consecutive measurements of intravaginal ejaculatory latency time with the stopwatch method. All men completed a detailed genital sensory evaluation using the GSA; thermal and vibratory sensation thresholds were computed at the pulp of the right index finger, and lateral aspect of penile shaft and glans, bilaterally.

Main Outcome Measures. Comparing quantitatively assessed penile thermal and vibratory sensory thresholds between men with lifelong PE and controls without any ejaculatory compliant.

Results. Patients showed significantly higher ($P < 0.001$) thresholds at the right index finger but similar penile and glans thresholds for warm sensation as compared with controls. Cold sensation thresholds were not significantly different between groups at the right index finger or penile shaft, but glans thresholds for cold sensation were bilaterally significantly lower ($P = 0.01$) in patients. Patients showed significantly higher (all $P \leq 0.04$) vibratory sensation thresholds for right index finger, penile shaft, and glans, bilaterally, as compared with controls.

Conclusions. Quantitative sensory testing analysis suggests that patients with lifelong PE might have a hypo- rather than hypersensitivity profile in terms of peripheral sensory thresholds. The peripheral neuropathophysiology of lifelong PE remains to be clarified. **Salonia A, Saccà A, Briganti A, Carro UD, Dehò F, Zanni G, Rocchini L, Raber M, Guazzoni G, Rigatti P, and Montorsi F. Quantitative sensory testing of peripheral thresholds in patients with lifelong premature ejaculation: A case-controlled study. J Sex Med 2009;6:1755–1762.**

Key Words. Premature Ejaculation; Peripheral Sensory Thresholds; Quantitative Sensory Testing; Trials in Premature Ejaculation

[1]These authors contributed equally.

Introduction

Premature ejaculation (PE) has been reported as the most common sexual complaint among young men [1]. Overall, PE prevalence is even higher than erectile dysfunction prevalence, ranging from 9% to 31% of the general male population [1,2]. However, the prevalence of lifelong PE, as recently defined by the International Society of Sexual Medicine (ISSM) [2], is unknown, but presumably much less than the prevalence of complaints of PE in the general population [3].

Historically, lifelong PE was believed to be primarily psychological in etiology [2]. Although psychological and cognitive-behavioral aspects are still considered to contribute to the pathophysiology of PE, these parameters are difficult to characterize [2]. Anxiety, mood deflection, and depression have been associated with lifelong PE, although this might be a consequence of the condition rather than a cause [2,4]. Among others, the main functional factors related to the etiology of lifelong PE have been suggested to be penile hypersensitivity [5–7], greater cortical penile representation [8–10], and a disturbance of central serotoninergic neurotransmission [11–14]. In this context, recent research has clearly showed that abnormalities of the serotonin (5-HT), dopamine, and epinephrine pathways may represent rational biological bases for lifelong PE [11–14]. A number of more consistent functional factors have been found for acquired PE [15].

Disorders of penile sensitivity as responsible for PE have been highlighted over the years [5–7,11,16–18]. Indeed, patients with lifelong PE were reported to have objectively verified penile hypersensitivity as compared with healthy controls [16]. Likewise, a causal role for penile hypersensitivity in the development of PE has been suggested by the reported effectiveness rates of topical suppositories as PE treatment (i.e., cream, gel, anesthetics spray) [19,20]. However, several studies reported findings contrary to a primary role for penile sensitivity in ejaculation latency, as thresholds to vibrotactile stimulation in premature ejaculators were either commensurate with controls or lower [11,16–18,21–23].

The aims of the present study were to quantitatively assess penile sensory thresholds for the modalities of vibration, warm, and cold in European Caucasian patients complaining of lifelong PE by means of the Genito-Sensory Analyzer (GSA, Medoc, Ramat Yishai, Israel), a feasible, reproducible system specifically developed to collect information on peripheral sensitivity in both men and women. These findings were compared with those of an age-comparable population of volunteers without any ejaculatory compliant.

Materials and Methods

Forty-two consecutive right-handed, fully potent European Caucasian men complaining of lifelong PE (group 1) and 41 age-comparable right-handed, potent volunteers without ejaculatory disorders (group 2) were enrolled in this prospective, case-control study. Both patients and controls underwent a comprehensive medical and sexual history and a detailed physical examination, including a complete neurological assessment. Both groups completed a baseline, pre-assessment International Index of Erectile Function (IIEF) [24]. For study purposes, men in both groups were eligible if they: (i) were ≥18 years old; (ii) were healthy, thus excluding any known neurological, metabolic, or endocrine disorders, and any other organic disorder; (iii) had a negative neurological physical examination; (iv) were not suffering from any Diagnostic and Statistical Manual of Mental Disorders-IV axis I disorder; (v) had a negative Meares–Stamey test, thus excluding infection of the genital tract; (vi) did not complain of any organic cause of PE, including anatomical abnormalities; (vii) had a normal IIEF-erectile function domain score (IIEF-EF ≥ 26) [25]; (viii) were in a stable heterosexual relationship with a sexually active partner for at least the previous 6 months; and (ix) did not have a history or were not currently abusing alcohol or using illicit drugs. The study was approved by our institution's ethics committee and all patients signed an informed consent.

Pre-assessment intravaginal ejaculatory latency time (IELT) was measured for the 4-week baseline period during which both patients and healthy men were asked to have sexual intercourse at least four times. Definite PE was defined as ejaculation occurring within 1 minute of vaginal intromission [26]. In this context, the ISSM definition of lifelong PE [2] would have even improved the characterization of the study's participants; however, the conceptualization of the study along with the local ethics committee approval started before the publication of such a novel definition of lifelong PE and we actually preferred to maintain the previous definition [26–28].