

## Prevalence and predictors of vestibulodynia in reproductive-aged women with recurrent uncomplicated E. Coli-associated urinary tract infections

<sup>a</sup>Andrea Salonia, <sup>b</sup>Alessandra Graziottin, <sup>c</sup>Rossella E. Nappi, <sup>a</sup>Antonino Saccà, <sup>a</sup>Massimo Ghezzi, <sup>a</sup>Lorenzo Rocchini, <sup>a</sup>Matteo Ferrari, <sup>a</sup>Fabio Castiglione, Patrizio Rigatti, Francesco Montorsi

<sup>a</sup> Dept. of Urology, University Vita-Salute San Raffaele, Milan, Italy

<sup>b</sup> Centre of Gynecology and Medical Sexology, H. San Raffaele Resnati, Milan, Italy

<sup>c</sup> Research Center for Reproductive Medicine, Dept. of Morphological, Eidological & Clinical Sciences, University of Pavia, Pavia, Italy

**OBJECTIVES.** Uncomplicated recurrent bacterial cystitis (rUTIs) are very common infections in otherwise healthy, reproductive-aged women, with Escherichia coli (E. coli) as the most frequent uropathogen. Provoked vestibulodynia is the most common cause of sexual pain in premenopausal women. The aim of this study was to determine the prevalence and predictors of vestibulodynia in women with E. coli-associated rUTIs presenting for an urological evaluation.

**METHODS.** We evaluated 60 consecutive European Caucasian, heterosexual, sexually-active women (mean age 34 yrs; age range 21-42) seeking medical treatment for rUTIs (defined as  $\geq 4$  episodes throughout the last 12 consecutive mo). Patients underwent a comprehensive medical and sexual history [including a number of GAQs, the FSFI, the AUA symptom score addressing urinary symptoms] and a complete physical examination, including a detailed gentle palpation of the vestibule, along with a Visual Analogue Scale (VAS; min 0 – max 10), scoring the real-time intensity of any vestibular pain. As a proxy of general health status, we scored health-significant comorbidities by means of the Charlson Comorbidity Index (CCI). Patients were also investigated with urinalysis and self-collected urine culture. Descriptive statistics and logistic regression models tested rate and predictors of secondary vestibulodynia in women with E. Coli-associated rUTIs.

**RESULTS.** E. Coli-associated rUTIS were diagnosed in 46 out of 60 patients (76.7%). Of these, 32 (69.6%) had a diagnosis of provoked vestibulodynia [mean (SD) VAS: 7.3 (1.4); FSFI-pain: 1.8 (0.4)]. In contrast, provoked vestibulodynia was significantly less frequent in patients with uropathogens other than E. Coli [4 out of 14 (28.6%) (Chi-square: 5.908;  $p = 0.015$ )]. In comparison with women reporting non-E. Coli associated rUTIS, the multivariate OR of vestibulodynia was 2.8 (95% CI, 1.3-4.6), for women reporting  $>6$  episodes of E. Coli-associated UTIs during the last 24 mo; 2.1 (95% CI, 1.4-4.7) for women who received more than 3 different antibiotics across the same period; and, in comparison with women reporting their first intercourse at  $\leq 17$  years of age, the multivariate OR was 0.5 (95% CI 0.3-0.9) in women aged  $\geq 23$  years at first intercourse. No clear association emerged between education, CCI, oral contraceptive use, recreational habits, and risk vestibulodynia.

**CONCLUSIONS.** A high rate of women with E. Coli associated rUTIs also complain of provoked vestibulodynia. In this context, the higher the prevalence of rUTIs the greater the risk of vestibulodynia. Investigation of sexuality is suggested for these women also in the general urological office.