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COITAL INCONTINENCE: PREVALENCE AND RISK FACTORS IN INCONTINENT WOMEN

Hypothesis / aims of study

Coital incontinence (CI) is a not well known and inadequately investigated symptom in sexually active women with pelvic floor dysfunction. The incidence of CI in incontinent women has been reported between 10 and 27% and few studies are designed to evaluate it. CI is traditionally classified in three types on the basis of the timing of occurrence during intercourse: (i) incontinence at penetration, (ii) incontinence during intercourse and (iii) incontinence during orgasm. The Primary objective of this study was to evaluate the prevalence of coital incontinence in a large population of women presenting to urogynecological services with the complaint of urinary incontinence (UI) and to assess associated clinical risk factors. Secondary objective was to measure the impact of CI on female sexuality and quality of life (QoL).

Study design, materials and methods

This is an international, multicentre, cross-sectional study, performed in Italy, Greece, USA and Egypt. It was registered on ClinicalTrials.gov. Inclusion criteria were: sexually active adult women with UI. Exclusion criteria were: sexually active adult women without UI, or sexually inactive adult women with UI. UI was classified as in stress (SUI), urgency (UUI) and mixed incontinence (MUI) on the basis of the ICS standardization. Women were asked about CI during penetration, intercourse and orgasm and its impact on the quality and frequency of their sexual life. The International Consultation on Incontinence Questionnaire (ICIQ-UI) and the Patient Perception of Bladder Condition (PPBC) were administered. Statistical analysis was performed by using univariate and multiple logistic regression analysis at significance level of $p < 0.05$

Results

In this study 750 incontinent women (mean \pm SD age of 52.1 \pm 11.1 years) were included. Overall 40% of women had CI, of which: 12% at penetration, 39% during intercourse, 14.3% at orgasm, 26.3% both at penetration and during intercourse, and, 8.4% other combinations. Results of univariate and multivariate analyses are presented in Tables 1 and 2.

In univariate analysis women with CI had a higher prevalence of SUI (77.7% vs 60.2%, $p=0.001$), MUI (94.7% vs 50.7%, $p=0.001$) and POP (46.5% vs. 35.4%, $p=0.004$) compared to women without CI. As far as CI subtypes are concerned, CI during penetration was associated with SUI (88.9% in women with CI vs 66.1%, in women without CI, $p=0.008$), CI during intercourse was associated with MUI (predominant SUI) (45.9% in women with CI versus 27.9%, in women without CI $p=0.001$), CI during orgasm with UUI (83.7% in women with CI vs 64.5% in women without CI, $p=0.016$) and MUI (97.7% in women with CI vs 69.1%, in women without CI $p=0.001$) (independently of the predominant type of UI). On the multivariate analysis (Table 2) SUI appeared to be a strong, independent risk factor for CI during penetration (OR: 4.102), while MUI with predominant SUI, POP and previous POP surgery were risk factors for CI during intercourse (OR: 2.195, OR: 1.968, OR: 2.736 respectively); UUI and MUI seem to predict CI during orgasm (OR: 2.831 and OR: 18.763)

Data shows age and caesarean delivery are a protective factors for the development of CI (OR: 0.966 and OR: 0.542 respectively). According to ICIQ-UI scores, increased severity of UI positively correlated with CI ($p=0.001$) and had a negative impact on the quality ($p=0.001$) and frequency ($p=0.001$) of sexual activity.

Interpretation of results

In our sample 40% of incontinent women had CI, with CI during intercourse being the most frequent. Our data suggest that among incontinent women those with SUI have a higher risk for CI, and, in particular, at penetration. A possible pathophysiologic explanation for this observation is that in women with SUI due to urethral hypermobility penetration by the erect penis alters the anatomical position of the bladder neck and, in combination with increased intra-abdominal pressure, induces the leakage. UUI and MUI were shown to be risk factors for CI during orgasm confirming the hypothesis that orgasm acts as a trigger for involuntary detrusor contractions and this is sometimes associated with a concomitant relaxation of the urethral sphincter. POP was also a risk factor for CI: in women with prolapse the insertion of the penis can reduce prolapse and unmask incontinence. Why previous POP surgery is also a risk factor for CI is not clear to us. Caesarean delivery and age appeared to have a "protective" role against CI and this is in line with data in the literature suggesting a protective role of caesarean delivery for incontinence in general. CI impacts on female sexual life and this is demonstrated by a lower frequency of sexual intercourse and low quality of sexual activity

Concluding message

CI is common in women with UI. The pathophysiology of this symptom is probably multifactorial. Further investigation on the associations between CI and incontinence in general is needed. This symptom, although poorly studied, can affect sexual life and female quality of life and should be investigated during counselling in all the patients referred to urogynecological centres.

Table 1: Univariate analysis

	CI	WITHOUT CI	p	CI DURING PENETRATION	WITHOUT CI DURING PENETRATION	p	CI DURING INTERCOURSE	WITHOUT CI DURING INTERCOURSE	p	CI DURING ORGASM	WITHOUT CI DURING ORGASM	p
SUI	77.7%	60.2%	0.001	88.9%	66.1%	0.008	67.0%	67.1%	1.000	74.4%	66.8%	0.384
UUI	65.7%	65.6%	1.000	61.1%	65.8%	0.688	65.0%	65.7%	0.957	83.7%	64.5%	0.016
MUI (>stress)	31.3%	29.8%	0.738	32.4%	30.3%	0.950	45.9%	27.9%	0.001	27.9%	30.6%	0.845
MUI (>urgency)	27.1%	25.3%	0.662	14.3%	26.6%	0.972	33.0%	24.8%	0.092	25.6%	26.1%	1.000
POP	46.5%	35.4%	0.004	42.9%	39.8%	0.857	54.1%	37.4%	0.001	27.9%	40.7%	0.132
Previous Anti-UI surgery	16.3%	17.6%	0.736	19.4%	16.9%	0.872	17.1%	17.2%	1.000	14.0%	17.3%	0.726
Previous POP surgery	19.7%	18.2%	0.689	30.6%	18.2%	0.103	34.2%	16.0%	0.001	11.6%	19.2%	0.299

CI: Coital incontinence, POP: Pelvic organ prolapse, SUI: Stress urinary incontinence, UUI: urgency urinary incontinence, MUI: Mixed urinary incontinence

Table 2: Multivariate analysis

	CI	CI DURING PENETRATION	CI DURING INTERCOURSE	CI DURING ORGASM
Age	OR= 0.966	OR=0.974	OR=0.96	OR=0.963
Previous POP surgery			OR=2.736	
SUI	OR=2.297	OR=4.102		
UUI				OR=2.831
MUI	OR=17.368			OR=18.753
MUI(>stress)			OR=2.195	
MUI (>urgency)				
POP	OR=1.569		OR=1.968	
Caesarean delivery	OR=0.542		OR= 0.636	OR=0.647

Blank cells: not significant correlations

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