

EPIDEMIOLOGY OF INCONTINENCE AND PELVIC ORGAN PROLAPSE: A SYSTEMATIC REVIEW OF THE PREVALENCE OF STRESS URINARY INCONTINENCE AND OCCULT URINARY INCONTINENCE IN WOMEN WITH PELVIC ORGAN PROLAPSE.

Hypothesis / aims of study

In a recent systematic review of the epidemiology of incontinence and pelvic organ prolapse, it was estimated that 25% to 45% of adult women suffer from urinary incontinence, while the prevalence of pelvic organ prolapse was 5% to 10% based on a symptom of 'bulge.' However, there was no information regarding the proportion of women who have both conditions.(1)

Pelvic organ prolapse (POP) describes the downwards descent of the female pelvic organs resulting in the protrusion of the vaginal walls, uterus, bladder, rectum or vaginal vault. Distressing symptoms of urinary tract dysfunction can occur concomitantly with pelvic organ prolapse including stress urinary incontinence (SUI).

The anterior vaginal wall in combination with pubocervical (endopelvic) fascia supports the bladder neck and proximal urethra. In POP the loss of support can lead to urethral hypermobility and cystocele formation, which can contribute to the development of SUI. Conversely women with severe POP often do not report SUI. Several mechanisms may explain this including: urethral kinking/compression; pressure dissipation; and bladder outlet obstruction. In these women there may be a risk that incontinence will develop following successful prolapse correction. In attempting to identify these women, evaluation of SUI (for example with a stress test or urodynamic investigation) may be undertaken preoperatively with and without POP reduction to detect occult SUI.

Currently it is not routine practice to conduct urodynamic studies on all women undergoing POP repair in the UK unless they also have symptoms or signs of SUI. It may therefore be important to identify women with occult SUI since this knowledge might alter the surgical treatment offered. Crucial to introducing such a diagnostic service would be an estimation of the number of women who might benefit from assessment of occult SUI.

The aims of this study are:

- (1) to identify the prevalence of clinical symptoms or signs of stress urinary incontinence in women with pelvic organ prolapse and
- (2) to identify the prevalence of occult urinary incontinence in women with pelvic organ prolapse.

Study design, materials and methods

In January 2011 a Medline search was performed using subject specific MeSH terms including; urinary incontinence; pelvic organ prolapse; cystocele; vault prolapse; enterocele and uterine prolapse. An epidemiological filter was applied to this search. 294 articles were identified and screened for inclusion by one author and checked by a second author

Inclusion criteria: studies which included women with pelvic organ prolapse, pelvic organ prolapse stage 2 or greater; and reported the prevalence and type of incontinence; both community and secondary care (hospital) based studies were included. Exclusion criteria: studies whose aim was to identify the prevalence of POP in women with SUI.

Data relating to the presence or absence of clinically evident SUI and occult SUI were abstracted, using the definitions according to those used by the authors of the studies. The data were analysed by calculation of the percentage of women with each condition of interest in each study, and presented as the median, range and interquartile range of those percentages.

Results

Of 294 studies, 264 were excluded because they did not provide the outcome data of interest. A further 11 studies reported on clinically evident SUI either diagnosed as a symptom (woman-reported) or a sign (diagnosed by observer, positive stress test or at urodynamics) (Table 1), and 23 studies provided an estimate of the presence of occult SUI in women with POP (after the reduction of co-existent prolapse)(Table 2). All the studies identified were hospital-based observational studies and no studies evaluated the coexistence of SUI in women with POP in the general population.

Table 1 Summary of prevalence of stress urinary incontinence in women with pelvic organ prolapse

Number of studies	Number of women	Number of SUI (median %)	SUI (range)	SUI (IQR)
11	861	33%	9% to 80%	19% to 74%

Table 2 Summary of prevalence of occult stress urinary incontinence in women with pelvic organ prolapse

Number of studies	Number of women	Number of Occult SUI (median %)	Occult SUI (range)	Occult SUI (IQR)
-------------------	-----------------	---------------------------------	--------------------	------------------

Interpretation of results

There was a wide variation in the prevalence of both concomitant SUI (9 to 80%) and occult SUI (5 to 83%) in women with POP. All the studies were conducted amongst women who had been referred for management of their POP, thus we were unable to examine the prevalence of co-existing POP and SUI in the general population.

The studies reported different populations, used different inclusion criteria (some referred for management of pelvic floor symptoms and some pre-operative) and used a number of methods of POP reduction. Another limitation was that the studies varied in the stage of POP which they regarded as defining POP. Some used a loose clinical definition such as 'moderate or severe', and others used objective staging (such as POP-Q or Baden-Walker). In some cases women with Stage 2 POP were regarded as having POP but it was unclear whether this also included women whose prolapse did not extend outside the hymen. Finally the method of diagnosis of incontinence also varied: from women's report of symptoms, to urodynamic assessment.

Concluding message

It was not possible to provide an estimate of the proportion of women who have concomitant POP and SUI, or occult UI.

One study of different methods of prolapse reduction found that it was not possible to identify an effective means of prolapse reduction which could predict which women would develop SUI after prolapse surgery.(2)

A well designed study should be mounted to identify the scale of the problem of concomitant SUI and occult SUI in women with POP in the general community and secondary care environment. It should also determine which (if any) is the most effective and cost-effective method of detecting women at risk of urinary incontinence following prolapse surgery.

References

1. Milsom I, Altman D, Lapitan MC, Nelson R, Sillen U, and Thom D. Epidemiology of urinary (UI) and faecal (FI) incontinence and pelvic organ prolapse (POP). In: Incontinence: 4th International Consultation on Incontinence, Anonymous Paris, France: Health Publication Ltd, 2009, p. 35-112
2. Visco AG, Brubaker L, Nygaard I, et al. The role of preoperative urodynamic testing in stress-continent women undergoing sacrocolpopexy: the Colpopexy and Urinary Reduction Efforts (CARE) randomized surgical trial. International Urogynecology Journal. 2008;19(5):607-14

<i>Specify source of funding or grant</i>	None
<i>Is this a clinical trial?</i>	No
<i>What were the subjects in the study?</i>	HUMAN
<i>Was this study approved by an ethics committee?</i>	No
<i>This study did not require ethics committee approval because</i>	It was a literature review
<i>Was the Declaration of Helsinki followed?</i>	No
<i>This study did not follow the Declaration of Helsinki in the sense that</i>	The study did not involve relevant participants
<i>Was informed consent obtained from the patients?</i>	No