

THE INCIDENCE AND RISK FACTORS OF PELVIC ORGAN PROLAPSE SURGERY IN A CROSS SECTIONAL STUDY IN THE NETHERLANDS.

Hypothesis / aims of study

Pelvic organ prolapse (POP) is a considerable problem that affects 50% of parous women.⁽¹⁾ Described risk factors for a prolapse include advancing age, white race, obesity, vaginal delivery, increased intra-abdominal pressure, smoking, connective tissue disorders and previous hysterectomy.

One often quoted study looked at the epidemiology of surgery for POP and incontinence. This study found that eleven percent of the women will have undergone an operation for prolapse or urinary incontinence by the age of 80.⁽²⁾ We wanted to study the prevalence and risk factors of women who had undergone prolapse surgery in a cross sectional study in a small homogenic city in the Netherlands.

Study design, materials and methods

All women aged 45 to 85 years registered on the patients in eight out of nine general practices were invited to enrol in the study. They filled out questionnaires containing questions on age, parity, BMI as well as questions on comorbidity and previous medical history. Also validated pelvic floor symptoms questionnaires were filled out (UDI,IIQ, DDI).

Chi-square test was used to compare the difference between women with and without previous prolapse surgery. Logistic regression was used for univariate and multivariate analysis. For logistic regression the backward elimination procedure was used. Variables with a $P < 0.05$ in univariate analysis were included in the multivariate analysis.

Results

Of the 2979 women eligible for this study 1397 women filled out the questionnaire. In total 103 women had undergone previous prolapse surgery. Table 1 shows that the prevalence of prolapse surgery increases with age, with a prevalence of 19.7% in the age group 76-85 years (OR 6.3). Women with previous prolapse surgery had more frequency, urgency, urge incontinence, stress incontinence, bladder retention and vaginal bulging than women without prolapse surgery.

In Table 2 the various possible risk factors for prolapse surgery are presented in a univariate and multivariate regression analysis. An OR > 1 indicates that the factor is positively correlated with the outcome variable; a OR < 1 that the factor indicates a negative correlation.

Table 1 Prevalence of prolapse surgery per age category

Age category	%	OR (95% CI)
45-55	24 (3.7%)	ref
56-65	28 (6.4%)	1.8 (1.0;3.1)
66-75	35 (15.6%)	4.8 (2.8;8.3)
76-85	13 (19.7%)	6.3 (3.1;13.2)

Interpretation of results

The incidence of prolapse surgery increases with age with a incidence by the age of 76-85 of 19.7%. This is a higher incidence than found in a often quoted study, who found that women by the age of 80 had 11% chance to have prolapse or incontinence surgery.⁽²⁾ Possibly the difference can be explained by differences in the patient population such as differences in race, comorbidity, BMI or smoking habits.

In our study only previous hysterectomy, age and previous hernia surgery were significant positive correlated with the risk of undergoing surgery for POP.

Concluding message

We found a incidence of prolapse surgery by the age of 76-85 of 19.7%. Risk factors for prolapse surgery were previous hysterectomy, age and previous hernia surgery.

Table 2 Risk factors for prolapse surgery in the studied population..

		Previous prolapse surgery	
		Univariate analysis OR (95% CI)	Multivariate analysis OR (95% CI)
Age (years)	45-55	ref	ref
	56-65	1.8 (1.0;3.1)	1.7 (0.9;3.1)
	66-75	4.8 (2.8;8.3)	3.5 (1.9;6.7)
	76-85	6.3 (3.1;13.2)	6.2 (2.4;16.0)
Parity	≤ 2	ref	
	> 2	1.5 (1.0;2.3)	
Body Mass Index (kg/m ²)	< 20	2.4 (1.0;6.2)	
	20-25	ref	
	25-30	1.9 (1.2;3.0)	

	>=30	1.7 (0.9;3.2)	
Postmenopausal status	Yes	6.5 (2.8;14.9)	
	No	Ref	
Comorbidity			
Pulmonary disease	Yes	0.7 (0.3;1.6)	
	No	ref	
Connective tissue disease	Yes	4.3 (1.1;16.1)	
	No	ref	
Previous hernia surgery	Yes	2.1 (1.2;4.0)	2.0 (0.9;4.3)
	No	ref	ref
Varicoses	Yes	1.6 (1.1;2.5)	
	No	ref	
Smoking	Yes	1.0 (0.6;1.7)	
	No	ref	
Previous hysterectomy	Yes	12.2 (7.8;18.9)	13.4 (8.1;22.2)
	No	ref	ref
Variance explained by the model (R ²)		-	28.2%

References

1. Digesu GA, Chaliha, C, Salvatore, S, Hutchings, A, Khullar, V (2005) The relationship of vaginal prolapse severity to symptoms and quality of life. BJOG 112(7):971-976
2. Olsen AL, Smith, VJ, Bergstrom, JO, Colling, JC, Clark, AL (1997) Epidemiology of surgically managed pelvic organ prolapse and urinary incontinence. Obstet Gynecol 89(4):501-506

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<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>	Yes
<i>Specify Name of Ethics Committee</i>	The Medical Ethics Research Committee (METC) of the Erasmus MC in Rotterdam, the Netherlands.
<i>Was the Declaration of Helsinki followed?</i>	Yes
<i>Was informed consent obtained from the patients?</i>	Yes