

THE DISTRIBUTION, DEFINITION AND ETIOLOGY OF PELVIC SUPPORT DEFECTS

Hypothesis / aims of study

To document the distribution of pelvic organ support, develop a definition of pelvic organ prolapse and evaluate various etiologies of pelvic organ prolapse from a U.S gynecologic clinic population.

Study design, materials and methods

Prospective observational multicenter study of 1004 women presenting to gyn clinics in the U.S. for routine care. Subjects underwent a POPQ exam, had general demographic and medical information recorded and completed a 17 question questionnaire regarding symptoms of prolapse, constipation, smoking history, race, occupation and job status. Receiver operator curves (ROC) were developed to evaluate the relationship between pelvic organ support and symptom questions to develop a cut-off for pelvic organ prolapse. Various proposed etiologic factors were evaluated by standard univariate analysis employing a definition of pelvic organ prolapse of leading edge of the vaginal wall 0.5 cm beyond hymenal remnants.

Results

The mean age was 42.7+/-13.9 (+/-SD) yrs. Racial distribution was 43% Caucasian, 24% African-American, 29% Hispanic, 2% Asian, 2% other. The distribution of POPQ stage was stage 0 = 24%, Stage 1 = 38%, stage 2 = 35%, stage 3 = 3%. No subjects had stage 4 prolapse. ROCs revealed that the specificity of any individual symptom for predicting pelvic organ prolapse increased to >94% when the leading edge of the prolapse extended 0.5cms beyond the hymen. Therefore, a definition of pelvic organ prolapse being the leading edge of the vagina 0.5 cm beyond the hymenal remnants was used for evaluation of various etiologies.

Risk Factor	OR	(95% CI)	Risk Factor	OR	(95% CI)
Age 10-yr	2.37	(1.84 – 3.05)	Hysterectomy	3.52	(2.00 – 6.21)
G	1.34	(1.23 – 1.45)	Chronic Illness	2.42	(1.40 – 4.20)
P	1.44	(1.30 – 1.59)	Employment	8.94	(3.53 – 22.64)
#Vaginal Delivery	1.42	(1.28 – 1.56)	Race		
Infant WT			Black vs. White	7.28	(1.53 -34.56)
10-oz	1.10	(1.03 – 1.17)	Hispanic vs. White	37.94	(9.12-157.8)
20-oz	1.20	(1.06 – 1.36)	Constipation	0.36	(0.15 – 0.90)
30-oz	1.32	(1.10 – 1.58)	Menopausal Status	0.05	(0.02 – 0.15)
Smoking History			Prolapse Surgery	2.58	(0.87 – 7.63)
Ever vs. Never	0.55	(0.24 – 1.25)			
Currently vs. Never	0.41	(0.15 – 1.16)			

Interpretation of results

The distribution of pelvic organ support demonstrates that most subjects have POPQ stage 1 or 2 support. Defining the disease state of pelvic organ prolapse is complex but it appears that based on symptoms it occurs when the leading edge of the vagina passes beyond the hymen. Previously noted risk factors for pelvic organ prolapse are confirmed by this study with the exception of post-menopausal status and the presence of constipation symptoms.

Concluding message

There are a number of patients with mild pelvic relaxation (stage 1 and some stage 2) that should be considered as a variant of normal. Once the leading edge of the vagina passes beyond the hymen subjects tend to become more symptomatic and this should be used as a definition of pelvic organ prolapse. There are many varied risk factors that predispose to pelvic organ prolapse.