

## NON-OBSTETRIC RISK FACTORS FOR SYMPTOMATIC PELVIC ORGAN PROLAPSE- A POPULATION-BASED CROSS-SECTIONAL STUDY IN SWEDEN

### Hypothesis / aims of study

To identify possible non-obstetric risk factors for symptomatic pelvic organ prolapse in the general female population.

### Study design, materials and methods

Population-based cross-sectional study derived from a sample of 5489 Stockholm women, 30 to 79 years old, who answered a validated questionnaire for the identification of symptomatic prolapse. The 454 women whose answers indicated the presence of such prolapse and the 405 randomly selected controls with answers that gave no indication of prolapse received a 72-item questionnaire, which probed into à priori suspected risk factors. Only women with an intact uterus and no prior surgery for incontinence or prolapse were included. Multivariable logistic regression models estimated prevalence odds ratios (POR) with 95% confidence intervals (CI).

### Results

Two hundred seventy-three women with symptomatic prolapse and 285 controls were included in the analysis. In addition to age and parity, overweight (POR for BMI 26-30 versus 19-25 was 1.9; 95% CI 1.2-3.1), a history of conditions suggestive of deficient connective tissue (varicose veins/hernia/hemorrhoids) (POR for positive history versus no history 1.8; 95% CI 1.2-2.8), a family history of prolapse (POR for positive history versus no history 3.3; 95% CI 1.7-6.4), heavy lifts at work (POR for ≥10 kg versus no heavy lifts 2.0; 95% CI 1.1-3.6), and presence of constipation, hard stools and/or difficult evacuation (POR relative to normal bowel habits 2.1; 95% CI 1.4-3.3), were all independently, significantly and positively linked to the presence of symptomatic prolapse.

### Interpretation of results

### Concluding message

In this non-consulting population, age and parity were the dominating risk factors, but significant independent associations with markers suggestive of congenital susceptibility (family history and conditions signaling weak connective tissue) and non-obstetric strain on the pelvic floor (overweight/obesity, heavy lifts, and constipation) imply that individual predisposition and lifestyle/environment may also play an important role. The causal direction of the association with bowel habits remains uncertain and the link to family history could partly be due to information bias.

<b><i>Specify source of funding or grant</i></b>	<b>None</b>
<b><i>Is this a clinical trial?</i></b>	<b>No</b>
<b><i>What were the subjects in the study?</i></b>	<b>HUMAN</b>
<b><i>Was this study approved by an ethics committee?</i></b>	<b>Yes</b>
<b><i>Specify Name of Ethics Committee</i></b>	<b>Ethics Committee of Karolinska Institutet</b>
<b><i>Was the Declaration of Helsinki followed?</i></b>	<b>Yes</b>
<b><i>Was informed consent obtained from the patients?</i></b>	<b>Yes</b>