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THE ASSOCIATION BETWEEN THE AGE AT THE FIRST AND LAST DELIVERY AND URINARY INCONTINENCE

Hypothesis / aims of study

Deliveries, and especially the first one, have been documented as a strong risk factor for urinary incontinence in women (1). However, there is uncertainty whether the mother's age at the first and last delivery are of importance as risk factors for urinary incontinence.

Study design, materials and methods

The EPINCONT study is part of the HUNT 2 survey, which was conducted in the county of Nord-Trøndelag in Norway between 1995 and 1997. All women of 20 years of age and older (n=47,313) received a mailed invitation to visit a screening station. The source population for the EPINCONT study consisted of the 34,755 community-dwelling women who attended the screening. These women were asked to complete a questionnaire at home, and 27,936 women (80 percent) answered questions related to incontinence. The resulting data set was linked to the Medical Birth Registry of Norway, in which it has been compulsory to register all births in Norway since 1967. Women who had given birth one or more times before 1967 (n=10,509), or who were nulliparous (n=4,077) were excluded. Women with any multifetal gestation (n=332), and women with any cesarean section (n=1,568) were also excluded. Women with more than five deliveries (n=33) were excluded. Women 65 years and older (n=20) were excluded, since an earlier EPINCONT substudy had found no effects of delivery in this age group. The study group then comprised 11,397 women. Women who confirmed any involuntary loss of urine, were asked about the frequency of leakage (four answer levels), the amount of leakage each time (three answer levels), the circumstance of leakage (e.g. coughing, sneezing, laughing, lifting heavy items), and whether leakage was accompanied by a sudden and strong urge to urinate. On the basis of answers about the urge to urinate and the circumstances of leakage, the incontinence was classified as stress, urge or mixed incontinence. A severity index developed and validated against a 48-hour pad weighing test by Sandvik et al. was used to characterize the degree of incontinence. Chi squared tests were performed to test statistical significance.

Results

Age at the first delivery was of importance for later urinary incontinence in the mother (table 1). When dichotomising age at the first delivery, we found that 23.2% were incontinent among women who delivered their first baby at the age of 25 years and under, whereas 27.7% of those 26 years and over at their first delivery were incontinent. The difference was statistically significant ($P < .05$). When stratifying by actual age, we found that this difference was significant in both age group 20-34 years and in age group 35-49 years. In the age group 50-64 years, however, there was no significant difference between the women who were young (25 years and under) at the first delivery as compared with the women who were older (26 years and over) at the first delivery.

Table 1. Distribution of age at the first delivery and prevalence of any incontinence in each category.

Age at the first delivery (years)	Number of women	Prevalence of any incontinence (%)
15 years and less	20	20.0
16-20	3390	22.5
21-25	5367	23.6
26-30	2101	27.2
31-35	430	27.4
36-40	83	41.0
41 years and over	6	50.0
In total	11397	24.2

Increasing age at the last delivery was associated with increasing prevalences of urinary incontinence. When stratifying by actual age, there seemed to be no association between age at the last delivery and incontinence in the age group 20-34 years (Table 2). In the age group 35-49 years, the prevalence was increasing by increasing age at the last delivery, whereas this factor was not associated with incontinence in the age group 50-64 years.

Table 2. Distribution of age at the last delivery and prevalence of any incontinence in each category according to actual age.

Actual age (years)	Age at the last delivery (years)	Number of women	Prevalence of any incontinence (%)
20-34			
	20 years and less	42	21.4
	21-25	744	17.5
	26-30	1146	21.5
	31-34	275	19.6
35-49			
	20 years and less	115	15.7
	21-25	1414	23.6
	26-30	2294	24.1
	31-35	1705	28.2
	36-40	453	30.5
	41 years and over	26	34.6
50-64			
	20 years and less	0	-
	21-25	127	29.9
	26-30	534	31.6
	31-35	390	30.0
	36-40	176	29.0
	41 years and over	26	34.6

Interpretation of results

The mother's age at the first delivery has implications for the risk of incontinence. Mothers 25 years and under had lower prevalence than those who were 26 years and older at the first delivery. However, such a difference was not the case for women in the age group 50-64 years. This finding probably reflects that the association between deliveries and incontinence is attenuated in this age group and totally disappears in the age group 65 years and over (1,2). The mother's age at the last delivery is not a risk factor in the age group under 35 years and in the age group 50-64 years. In the age group 35-49 years there is an association which partly may reflect the effect of the time since the last delivery, as recovering may have occurred to a larger extent the longer it is since the last delivery. This argument does, however, not seem to be of importance for the youngest age group.

Concluding message

Women younger than 25 years at their first delivery has a lower risk of incontinence than women who are older at their first delivery. However, this effect disappears after the age of 50.

References

1. Age- and type-dependent effects of parity on urinary incontinence. The Norwegian EPINCONT study. Obstet Gynecol 2001;98:1004-10

2. Urinary incontinence after vaginal delivery or cesarean section. N Engl J Med 2003;348:900-7

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