

FOUR YEARS AFTER FIRST DELIVERY, DO URINARY INCONTINENCE AND ANAL INCONTINENCE SHARE SAME OBSTETRICAL RISK FACTORS?

Hypothesis / aims of study

First delivery can be complicated by urinary or anal incontinence (UI or AI). Main suspected mechanisms are a lack of side urethral support and urethral sphincter incompetence for UI and anal sphincter rupture for AI. While injuries are different, both diseases share some common risk factors such as age and obesity. Obstetrical risk factors are specific to the disease as spontaneous vaginal delivery for UI and third perineal tear or instrumental delivery for AI. To our knowledge there is no analysis of these obstetrical risk factors on a single population of women after delivery. Our goal is to clarify which are the risk factors common to the urinary and anal incontinence and those specific to each incontinence. Our hypothesis is that if mechanisms of injury during vaginal childbirth differ for UI an AI then obstetrical risk factors would be specific to each incontinence, UI and AI, while common factors are the result of a congenital or acquired individual susceptibility (aging, neurological, etc.).

Study design, materials and methods

The study included nulliparous women who gave birth in 1996 in 2 university maternities at a term of 37–41 weeks to a live born singleton child in cephalic presentation and who had an up-to-date mail address in 2000. Data on the mother (age, height, weight) and delivery (epidural, second active phase, mode of delivery, child weight) were collected at delivery. Data on incontinence come from a questionnaire mailed in 2000. From the register of birth, 1323 primiparous met the inclusion criteria, for 548 (41%) the address was no longer valid and 1 had died so that only 774 (59%) have actually received the postal questionnaire. Of these, 627 (81%) responded and constitute our population. One maternity had a systematic policy of episiotomy, the other a restrictive policy. Women who answered “yes” to “Do you have involuntary loss of urine?” were considered to have UI. Women who answered “yes” to “Do you have involuntary loss of flatus or stool?” were considered to have AI. A multinomial logistic regression analysis was conducted to identify common and specific risk factors for each incontinence. Two reports about the same population have been previously published [1, 2].

Results

The prevalence of UI was 28.9% (181) and the prevalence of AI was 13.1% (82), 22.3% (140) had only UI, 6.5% (41) only AI, and 6.5% (41) both incontinences.

Characteristics at first delivery	UI only 141 women OR (CI 95%)	AI only 41 women OR (CI 95%)	UI+AI 41 women OR (CI 95%)
Maternity with a systematic episiotomy policy	0.79 (0.48-1.33)	1.45 (0.61-3.50)	<u>7.38 (2.07-26.3)</u>
Age at delivery > 30 years	<u>2.17 (1.40-3.37)</u>	1.38 (0.67-2.86)	<u>2.66 (1.26-5.59)</u>
Body Mass Index > 25 kg/m ²	1.83 (0.91-3.68)	2.43 (0.90-6.59)	1.26 (0.37-4.35)
Epidural	1.07 (0.57-2.02)	0.71 (0.27-1.84)	<u>0.27 (0.10-0.71)</u>
Second active phase > 20 min	1.24 (0.60-2.59)	<u>3.40 (1.32-8.73)</u>	2.70 (0.85-8.58)
Caesarean	0.74 (0.26-2.09)	0.59 (0.13-2.77)	0.28 (0.05-1.70)
Instrumental delivery	1.03 (0.65-1.64)	1.11 (0.52-2.37)	1.04 (0.46-2.35)
Episiotomy	1.50 (0.79-2.84)	0.68 (0.24-1.91)	0.26 (0.06-1.04)
Third perineal tear	3.49 (0.21-59.4)	<u>24.2 (1.97-297)</u>	<u>21.2 (1.28-350)</u>
UI before first pregnancy	<u>6.37 (2.11-19.3)</u>	1.86 (0.19-17.7)	<u>27.1 (7.28-101)</u>
UI during first pregnancy	<u>3.67 (2.24-5.99)</u>	1.53 (0.61-3.84)	1.92 (0.78-4.73)

Variables “weight of the first new-born more than 4kg”, “new birth since 1996” and “pregnant at the time of the questionnaire” were not significant and were excluded from the final model.

Interpretation of results

We found specific and distinct associations between obstetric risk factors and UI and/or AI. Risk factors significantly associated with UI four years after first childbirth were age at first childbirth, pre-existing UI and UI during pregnancy. On the other hand, risk factors significantly associated with AI were length of the second active phase (> 20 min) and occurrence of a third perineal tear. Significant predictors of UI+AI (i.e., for women who had both UI and AI) were maternity policy, Epidural, third perineal tear, and UI before first pregnancy. After adjustment for the variables included in the model as noted above, mode of delivery was not significantly associated with UI, AI, or UI+AI; although for all three outcomes, the adjusted odds ratios were less than one.

Concluding message

In our population, four years after first delivery, UI and AI do not share same obstetrical risk factors. The results of our study are consistent with the hypothesis that the mechanism of injury during delivery is different for UI and AI.

References

1. Fritel X, Fauconnier A, Levet C, Bénifla JL. Stress urinary incontinence four years after the first delivery: a retrospective cohort study. *Acta Obstet Gynecol Scand* 2004;83:941-5

2. Fritel X, Schaal JP, Fauconnier A, Bertrand V, Levet C, Pigné A. Pelvic floor disorders 4 years after first delivery, a comparative study of restrictive versus systematic episiotomy. BJOG 2008;115:247-52

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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>	No
<i>This study did not require ethics committee approval because</i>	Our work complied with French statutes and regulations, which authorise epidemiological surveys without approval of an ethics committee. Our survey involved no intervention and is thus excluded from the French statute on biomedical research (Loi Huriet-Sérusclat, dated 20 December 1998). We complied with all French statutes concerning data about the subjects, confidentiality and restrictions (e.g., no religious or racial data). Informed consent was obtained from each responding woman.
<i>Was the Declaration of Helsinki followed?</i>	Yes
<i>Was informed consent obtained from the patients?</i>	Yes