

## URINARY INCONTINENCE 12 YEARS AFTER FIRST CHILDBIRTH IN A COHORT OF 235 WOMEN.

### Hypothesis / aims of study

The relationship between urinary incontinence (UI) and delivery mode show, for the postpartum period, less UI in case of delivery by Caesarean section. With pelvic floor recovery, spontaneous or facilitated by the muscles exercise, the prevalence of urinary incontinence decreases rapidly during the first year postpartum. The relationship between UI and mode of delivery long time after delivery is much more uncertain. We continue to ignore what are the factors that influence the development of UI novo during aging in women and their relationship to obstetric factors (in particular the mode of delivery). In an earlier analysis carried out on a cohort primipara interviewed 4 years after their first delivery, we have demonstrated a protective effect of caesarean delivery on the risk of stress urinary incontinence (SUI) 4 years after delivery. The objective of this survey was, in the same population of women, examine whether the relationship between mode of delivery and UI remains after 12 years and evaluating the impact of pregnancy and delivery on the prevalence of UI 12 years after childbirth.

### Study design, materials and methods

The population is composed of primipara who delivered at term (37–41 weeks) a live born singleton in cephalic presentation in 2 university maternities in 1996, had given their agreement in 2000, when they answer to the first postal questionnaire, to receive a second one later. Five hundred and seventy-two women met these criteria, for 251 women the postal address was no more valid and they were not included. Among those, 321 women, who received the questionnaire, we had 235 responses (73.2%). 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 the 2000 and 2008 questionnaires. UI was defined by answering "Yes" to the question "Do you have involuntary leakage of urine?" "SUI" was defined by the response "sometimes", "often", or "all the time" to the question "Do you leak urine with physical exertion, coughing or sneezing?". Two reports about the same population have been previously published [1, 2].

### Results

The prevalence of UI 4 and 12 years after the first delivery were similar (33.6 and 34.5% respectively) as the severity of UI measured by the score of Sandvik or the prevalence of SUI (21.7 and 23.0%). Among the 79 women who reported UI in 2000 they were 49 (60.4%) to report UI in 2008. Among the 156 women continent in 2000, UI occurred de novo in 2008 for 32 women (20.5%).

UI 12 years after first delivery	Total 235 women	Yes 81 women	No 154 women	p
Age at 2008 questionnaire, years	41.3	41.4	41.3	0.86
2008 Body Mass Index, kg/m <sup>2</sup>	22.7	24.1	22.0	<0.0001
Parity	2.1	2.1	2.1	0.83
Caesarean only	11 (4.7%)	3 (3.7%)	8 (5.2%)	0.52
UI during first pregnancy	58 (25%)	33 (41%)	25 (16%)	0.0002
Sportive activity	161 (69%)	48 (59%)	113 (73%)	0.028

We have found no association between the prevalence of UI 12 years after first childbirth and woman's age, parity or mode of delivery, however there is an association with body mass index (BMI), and sportive activity (Table). In multivariate analysis, the only significant factors were BMI in 2008 (OR = 1.17, IC95% 1.07-1.28) and UI during the 1st pregnancy (3.09; 1.61-5.96). The severity of UI measured by the Sandvik score [3] was associated with BMI and lack of sportive activity.

In the 79 incontinent women in 2000, 20 (25%) received treatment. Remission of UI between 2000 and 2008 is associated with weight loss (-0.5 versus 4.4 kg), but is not associated with treatment undertaken, parity or mode of delivery. Among the 156 women continent in 2000 we have not identified risk factors associated with UI appeared between 2000 and 2008.

### Interpretation of results

Twelve years after first delivery, prevalence of UI is associated with lifestyle (obesity, sportive activity) and not with obstetrical factors (parity, mode of delivery). Weight reduction is associated with remission of urinary incontinence.

### Concluding message

We still do not know which factors promote the onset of UI years after delivery.

### References

1. 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
2. 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
3. Sandvik H, Hunskar S, Seim A, Hermstad R, Vanvik A, Bratt H. Validation of a severity index in female urinary incontinence and its implementation in an epidemiological survey. J Epidemiol Community Health 1993;47:497-9

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**NONE**

**Is this a clinical trial?**

**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