

IS CESAREAN SECTION A PROTECTIVE FACTOR FOR URINARY INCONTINENCE?

Hypothesis / aims of study

Many physiologic studies have focused on factors in the method of delivery that might predispose women to pelvic floor injury such as damages to the pelvic organ support, levator ani muscle and pudendal nerve function. These factors can lead to postpartum urinary incontinence (UI) (1).

Parity is an established risk factor for UI among women and there is strong evidence that vaginal delivery may cause direct injury to the pelvic floor in consequence of the passage of the newborn through the birth canal. Evidences suggest that caesarean section can protect pregnant women against UI, but data are scarce and controversial (1,2).

Considering the large number of women requesting caesarean section, motivating by the desire to prevent UI, the identification of risk or protective factors for UI during delivery seems to be general health interest. So, the aim of the present study is to verify if caesarean section is a protective factor for UI in the puerperium.

Study design, materials and methods

This case-controlled study was carried out from May to December of 2010. The study population included women in up 90 days of postpartum who attended the Obstetric Clinic of a public university hospital of the State of São Paulo, Brazil.

The sample size was calculated to detect and odds ratio of 3.0 in a ratio of 1 case to 3 controls, assuming a significance level of 5% and a power of 80%, with the prevalence of exposure among cases estimated at 20%. The sample size calculation was estimated at 74 cases and 222 controls. To prevent casual losings and to provide greater power for analysis, 20% of patients were added to the original estimate, resulting in 89 cases and 267 controls.

The cases studied were mothers who reported the frequency and/or amount of urinary leakage according to the categories of the "International Consultation on Incontinence Questionnaire – Short Form" (ICIQ-SF – questions 3 and 4).

Exclusion were due to: twin pregnancy, presence of hypertension, diabetes mellitus, chronic obstructive pulmonary disease, neurological disease, urinary tract infection, urolithiasis, history of pelvic surgery (excluding caesarean section), current treatment for urinary incontinence and / or medications that interfere in lower urinary tract function.

For data collection a questionnaire was designed, subjected to analysis of content validity made by three judges with experience in obstetrics and/or urogynecology. Some changes in format and questions were suggested, resulting in the final instrument. This was pre-tested with ten mothers, showing no further changes were necessary.

The questionnaire contained questions related to socio-demographic features, and some risk factors for UI, including the type of delivery.

Women who met the inclusion criteria were invited to enroll the study and answered the questionnaire.

Results

A total of 356 women were included (89 incontinent and 267 continent) with a mean age of 26 years (\pm SD 7.8, ranging from 13 to 45). Regarding the parity, 53.4% (190) were primiparous, 40.7% (145) were multiparous with 2-3 births and 5.9% (21) had four or more previous deliveries. UI before pregnancy was reported by 3.4% (12) women and 30.6% (109) reported UI during pregnancy.

Most mothers underwent caesarean sections (55.1% or 196), 39.6% (141) delivered vaginally and 5.3% (19) forceps delivery. Among the incontinent, 55.1% (49) underwent caesarean section, 37.1% (33) delivered vaginally and 7.9% (7) forceps delivery. In the group of continent mothers, the caesarean section rate was 55.1% (147), vaginal delivery 40.4% (108) and forceps delivery 4.5% (12). According to the Chi-square test, UI postpartum was not associated with type of delivery ($p = 0.4465$).

Interpretation of results

Although childbirth is generally related to a major risk factor for UI, the role of caesarean section in the prevention of this condition is controversial.

Results of our study suggest that UI is not preventable by caesarean section. Some studies implicate that vaginal delivery itself is an important risk factor for UI, others suggest that there are additional risk factors for the development of UI than mode of delivery such as heredity, instrumental delivery, prolonged second stage of labor, birth weight, collagen abnormalities and parity (2,3).

Due to particular features of the hospital service, which attends high-risk pregnancies, the number of caesarean sections is high, but vaginal delivery is encouraged. One of the limitations of the study is the lack of investigating of separately caesarean sections that occurred after the beginning of second stage of labor and those performed before the beginning of second stage of labor.

Concluding message

In this study caesarean section was not a protective factor for the development of UI.

References

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<i>Is this a clinical trial?</i>	Yes
<i>Is this study registered in a public clinical trials registry?</i>	No
<i>Is this a Randomised Controlled Trial (RCT)?</i>	No
<i>What were the subjects in the study?</i>	HUMAN
<i>Was this study approved by an ethics committee?</i>	Yes
<i>Specify Name of Ethics Committee</i>	Comitê de Ética em Pesquisa da Faculdade de Ciências Médicas - Unicamp
<i>Was the Declaration of Helsinki followed?</i>	Yes
<i>Was informed consent obtained from the patients?</i>	Yes