

# Induction of labor in patients with a previous caesarean section: a descriptive study.

Toledo Mesa L, Costa Pueyo J, Marti Malgosa L, Burgaya Guiu N, Alberch Camprubí E, Maya Pérez C, Canet Estévez Y.

Maternal- Fetal Medicine Unit. Department of Obstetrics and Gynecology. Parc Taulí Hospital Universitari. Institut d'Investigació i Innovació Parc Taulí (I3PT-CERCA). Universitat Autònoma de Barcelona. Sabadell, Barcelona. Spain

## Objectives

To describe the **caesarean section rate** among patients with **one previous C-section** that go through an induction of labor in the next pregnancy. Secondary objectives: to evaluate of the obstetrical, maternal and fetal factors associated with the success in vaginal birth after caesarean section and evaluate the complications depending on the type of labor induction.

## Methods

This was a **retrospective observational and descriptive study** collecting data from the electronic medical records at Parc Taulí University Hospital **between 2016 and 2020**.

Inclusion criteria was pregnant women with a previous caesarean section and the indication of an induction of labor in the actual pregnancy. We did not include women with a contraindication for the vaginal delivery, history of 2 or more caesarean sections and women who refused a trial of labor after caesarean.

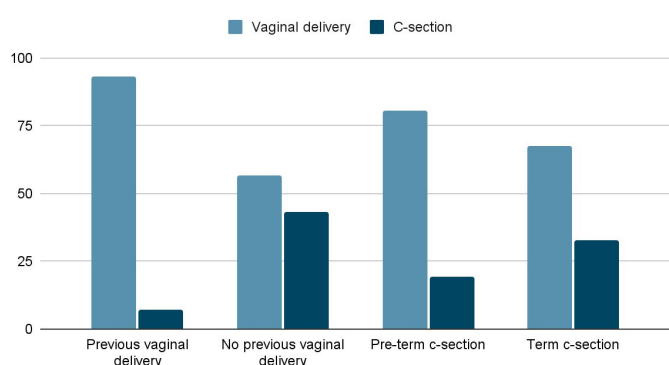
## Results

We have assisted 1222 pregnant women with a previous caesarean section between 2016 and 2020, 753 of whom chose a trial of labor after c-section. **314 (41.7%)** of them underwent a labor induction. The main **indications** of the induction of labour were **premature rupture of membranes** (29.6%), **gestational diabetes** (16.6%), **chronologically prolonged gestation** (13.7%) and **hypertensive disorders of pregnancy** (7.3%). Cervical ripening was evaluated with a Bishop scale to differentiate those using a prostaglandin E2 induction to prepare the cervix (68.2%) to those using just oxytocin (31.8%).

	C-section	Vaginal
Oxytocin	15%	85%
Prostaglandin E2	36,9%	69,1%

**Table 1.** Labor outcomes depending on the type of induction of labor

The **global vaginal delivery rate** after caesarean section was **70.1%**. 85% of patients that were induced with oxytocin achieved a vaginal delivery. The vaginal delivery rate was significantly lower in those induced previously with prostaglandins ( $p < 0.01$ ).



**Table 2.** Labor outcomes in patients with/without previous vaginal delivery and pre-term/term c-section

We had 4 cases of uterine rupture (1.27% of total), all of them in patients undergoing a prostaglandin induction.

One of the most important predictors of vaginal delivery was having a **previous vaginal delivery** ( $p < 0.001$ ), these women had a successful vaginal birth in 93% of the cases. Those who had a **preterm caesarean delivery** were more likely to have a successful vaginal birth afterwards (80.5% of the cases,  $p < 0.05$ ), comparing to those who had a term caesarean birth (67.4% of cases).

There was no statistically significant difference observed when we compared the vaginal birth outcome with variables such as previous baby weight at delivery, years since caesarean section, maternal age and actual estimated fetal weight.

## Conclusions

**Vaginal delivery rate after caesarean section is high in our hospital** (global rate 70.1%) and comparable to the outcome described in the literature. The variables that showed a statistically significant difference for the success in the trial of labor after caesarean were: **vaginal delivery prior to caesarean section, oxytocin labor induction** (due to better cervical conditions) and **preterm caesarean in the previous pregnancy**.

Induction of labor is a safe procedure in women with a previous caesarean section and benefits outweigh the risks. Nevertheless, it is important to individualise each case and offer the best option possible for our patients depending on their particularities.