

## OBSTETRICS

# Induction of labor versus expectant management for women with a prior cesarean delivery

Anna Palatnik, MD; William A. Grobman, MD, MBA



**OBJECTIVE:** Previous studies of induction of labor in the setting of trial of labor after cesarean have compared women undergoing trial of labor after cesarean to those undergoing spontaneous labor. However, the clinically relevant comparison is to those undergoing expectant management. The objective of this study was to compare obstetric outcomes between women undergoing induction of labor and those undergoing expectant management  $\geq 39$  weeks of gestation.

**STUDY DESIGN:** This was a secondary analysis of data from the *Eunice Kennedy Shriver* National Institute of Child Health and Human Development Maternal-Fetal Medicine Units Network Cesarean Registry that included women with singleton gestations at a gestational age of  $\geq 39$  weeks and a history of 1 low transverse cesarean delivery. Outcomes of induction at 39, 40, and 41 weeks were compared to expectant management beyond each gestational age period using univariable and multivariable analyses. Women with scheduled repeat cesarean deliveries done for the indication of prior cesarean delivery were excluded from the analysis.

**RESULTS:** In all, 12,676 women were eligible for analysis. The rate of vaginal birth after cesarean (VBAC) was higher among women undergoing induction of labor at 39 weeks compared to expectant management (73.8% vs 61.3%,  $P < .001$ ). The risk of uterine rupture also was higher among women undergoing induction of labor at 39 weeks compared to expectant management (1.4% vs 0.5%,  $P = .006$ , respectively). In multivariable analysis, induction of labor at 39 weeks remained associated with a significantly higher chance of VBAC and uterine rupture (odds ratio, 1.31; 95% confidence interval, 1.03–1.67; and odds ratio, 2.73; 95% confidence interval, 1.22–6.12, respectively).

**CONCLUSION:** Induction of labor at 39 weeks, when compared to expectant management, was associated with a higher chance of VBAC but also of uterine rupture.

**Key words:** induction of labor, uterine rupture, vaginal birth after cesarean delivery

Cite this article as: Palatnik A, Grobman WA. Induction of labor versus expectant management for women with a prior cesarean delivery. *Am J Obstet Gynecol* 2015;212:358.e1-6.

It is commonly believed that women with a prior cesarean delivery who undergo induction of labor are less likely to have vaginal birth after cesarean (VBAC).<sup>1</sup> Indeed, observational studies have consistently shown that women who are induced after a prior cesarean have a 15-20% higher chance of cesarean delivery.<sup>2-7</sup> In addition, several studies have shown that induction of labor is associated with an approximately 2-fold increased risk of uterine rupture.<sup>8-11</sup>

## EDITORS' ★ CHOICE

However, these conclusions are from comparisons with women who were in spontaneous labor. Caughey et al<sup>12</sup> and others<sup>13,14</sup> have demonstrated how this comparison group is not clinically relevant, because the actual alternative to induction is not spontaneous labor but expectant management. In fact, among women without a prior cesarean delivery, when labor induction has been

compared to expectant management instead of spontaneous labor, meta-analysis of observational studies has revealed a lower chance of cesarean delivery among those who were induced.<sup>15</sup>

The consequences of labor induction compared to expectant management among women with a prior cesarean remain uncertain. We hypothesized that induction of labor  $\geq 39$ <sup>0/7</sup> weeks of gestation would not be associated with an increased chance of cesarean when compared to expectant management among women planning trial of labor after cesarean. We also investigated whether labor induction is associated with an increase in the risk of uterine rupture or other obstetric morbidities.

## MATERIALS AND METHODS

This was a secondary analysis of data from the Cesarean Registry of the *Eunice*

From the Department of Obstetrics and Gynecology, Feinberg School of Medicine, Northwestern University, Chicago, IL.

Received Oct. 18, 2014; revised Dec. 17, 2014; accepted Jan. 19, 2015.

The authors report no conflict of interest.

Presented in oral format at the 35th annual meeting of the Society for Maternal-Fetal Medicine, San Diego, CA, Feb. 2-7, 2015. The racing flag logo above indicates that this article was rushed to press for the benefit of the scientific community.

Corresponding author: Anna Palatnik, MD. [anna.palatnik@northwestern.edu](mailto:anna.palatnik@northwestern.edu)

0002-9378/free • © 2015 Elsevier Inc. All rights reserved. • <http://dx.doi.org/10.1016/j.ajog.2015.01.026>

TABLE 1

**Characteristics of women undergoing induction of labor with 1 prior cesarean delivery compared to expectant management**

Characteristic	IOL	EM	IOL	EM	IOL	EM
	39 <sup>0/7</sup> –39 <sup>3/7</sup> wk (n = 638)	>39 <sup>3/7</sup> wk (n = 7565)	40 <sup>0/7</sup> –40 <sup>3/7</sup> wk (n = 522)	>40 <sup>3/7</sup> wk (n = 2933)	41 <sup>0/7</sup> –41 <sup>3/7</sup> wk (n = 471)	>41 <sup>3/7</sup> wk (n = 547)
Age, y	30.2 ± 5.4 <sup>b</sup>	28.1 ± 5.7	29.7 ± 5.4 <sup>b</sup>	27.7 ± 5.7	28.7 ± 5.5 <sup>b</sup>	27.4 ± 5.6
Prepregnancy BMI	27.0 ± 6.6	26.7 ± 6.3	27.3 ± 6.7	27.0 ± 6.4	27.6 ± 7.3	27.3 ± 6.1
Race						
African American	157 (24.6) <sup>b</sup>	2556 (33.8)	159 (30.4) <sup>b</sup>	1066 (36.3)	157 (33.3) <sup>b</sup>	220 (40.2)
Caucasian	391 (61.3) <sup>b</sup>	2116 (27.9)	263 (50.4) <sup>b</sup>	733 (25.0)	188 (39.9) <sup>b</sup>	104 (19.0)
Hispanic	55 (8.6) <sup>b</sup>	2473 (32.7)	69 (13.2) <sup>b</sup>	973 (33.2)	94 (20.0) <sup>b</sup>	191 (34.9)
Other	35 (5.5) <sup>b</sup>	421 (5.6)	30 (5.7) <sup>b</sup>	160 (5.4)	32 (6.8) <sup>b</sup>	32 (5.8)
Cigarette use during pregnancy	75 (11.7)	971 (12.8)	69 (13.2)	395 (13.5)	67 (14.2)	96 (17.6)
Pregnancy						
Prior vaginal delivery	362 (56.8) <sup>b</sup>	3228 (42.9)	238 (46.1)	1270 (43.6)	188 (39.9) <sup>b</sup>	255 (47.0)
Prior VBAC	254 (39.8) <sup>b</sup>	2010 (26.5)	169 (32.4) <sup>b</sup>	777 (26.5)	117 (24.8)	153 (28.0)
Recurrent indication for prior CD	173 (27.1) <sup>b</sup>	2475 (39.8)	169 (32.4)	937 (38.5)	145 (30.8)	193 (40.2)
CD						
Chronic medical illness <sup>a</sup>	9 (1.4)	63 (0.8)	6 (1.1)	17 (0.6)	4 (0.8)	5 (0.9)

All data presented as mean ± SD or N (%).

BMI, body mass index; CD, cesarean delivery; EM, expectant management; IOL, induction of labor; VBAC, vaginal birth after cesarean.

<sup>a</sup> Includes chronic hypertension, pregestational diabetes, asthma, seizure disorder, thyroid disease, or renal insufficiency; <sup>b</sup>  $P < .05$  for comparison of labor induction vs EM at given gestational age.

Palatnik. Induction of labor after prior cesarean delivery. *Am J Obstet Gynecol* 2015.

Kennedy Shriver National Institute of Child Health and Human Development Maternal-Fetal Medicine Units Network. That registry was the result of a 4-year multicenter observational study, designed to address clinical issues related to cesarean childbirth.<sup>8</sup> In the present analysis, we included all women from the registry who had a history of 1 cesarean delivery via a low transverse or unknown uterine incision and were at a gestational age of at least 39<sup>0/7</sup> weeks. Women with scheduled repeat cesarean deliveries done for the indication of prior cesarean delivery were excluded from the analysis.

Women who underwent labor induction were divided into 3 comparison groups based on the timing of their induction of labor: 39<sup>0/7</sup>–39<sup>3/7</sup>, 40<sup>0/7</sup>–40<sup>3/7</sup>, and 41<sup>0/7</sup>–41<sup>3/7</sup> weeks. Gestational age was based on the best obstetric estimate (last menstrual period compared with ultrasonography), determined by health care providers and used for clinical

decision-making.<sup>8</sup> Women who underwent induction during each gestational age window were compared with women who were managed expectantly after the same gestational age window. This design was used to mimic the prospective choice of undertaking a labor induction during a given period of time at the start of a given week of gestation or undergoing expectant management from that time forward. In an effort to evaluate women who were not in need of immediate delivery due to the onset of an acute obstetric complication, women were excluded from the induction group when they had an acute obstetric medical indication for induction (ie, preeclampsia, gestational hypertension, nonreassuring antenatal surveillance, oligohydramnios, fetal growth restriction, and antenatal intrauterine fetal demise). However, if women developed these conditions while they were being expectantly managed, they were not

excluded from the expectant management group, as 1 consequence of expectant management is that these conditions may develop and require delivery.

A recurrent indication for cesarean delivery was defined as a cesarean due to any type of arrest disorder. Uterine rupture was defined as a disruption or tear of the uterine muscle and visceral peritoneum or a separation of the uterine muscle with extension to the bladder or broad ligament.

To ensure that our results were not solely dependent upon our primary analytic approach and group composition, we performed additional analyses in which the inclusion criteria for the group of women expectantly managed was altered slightly. In 1 analysis, we included women who underwent labor from the first day at which women also may have undergone labor induction (ie, laboring women were included in the

Download English Version:

<https://daneshyari.com/en/article/6144357>

Download Persian Version:

<https://daneshyari.com/article/6144357>

[Daneshyari.com](https://daneshyari.com)