

VU Research Portal

To give and to assist birth after cesarean

Rietveld, A.L.

2019

document version

Publisher's PDF, also known as Version of record

[Link to publication in VU Research Portal](#)

citation for published version (APA)

Rietveld, A. L. (2019). *To give and to assist birth after cesarean*.

General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal ?

Take down policy

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

E-mail address:

vuresearchportal.ub@vu.nl

English summary

Chapter 1 provides a general introduction and the outline of the thesis.

Because cesarean rates are rising worldwide, an increasing number of women and obstetricians are confronted with the question how to deliver in a subsequent pregnancy. For both trial of labor and elective repeat cesarean have risks and benefits, there is no unequivocal answer to the question what the best way is. Trial of labor has relatively good maternal and neonatal outcomes if it succeeds, but has increased risks for mother and child when it fails and an emergency cesarean is needed, as compared to planned repeat cesarean. Thus, key in the trial of labor versus elective repeat cesarean debate is the prediction of who will be successful in achieving vaginal birth. To predict vaginal birth success chance in individual women, studies and guidelines focused on clinical risk factors for unsuccessful trial of labor. Quantitative information on what the influence of patient characteristics is on trial of labor success chance provides an estimation of success chance of vaginal delivery. Qualitative information on how women choose the preferred mode of delivery and how gynecologists confronted with women in trial of labor clinically manage these patients should complement these quantitative prediction models and is topic of recent studies.

The aim of this thesis is to gain more insight in the prediction of trial of labor success chance by integrating clinical risk factors with human decision-making. Therefore, in part 1 of this thesis, factors that possibly influence trial of labor success chance as well as factors that influence women's decision-making are explored. When women choose for trial of labor, gynecologists are responsible for their deliveries. Therefore in part 2, we explore how gynecologists reach decisions regarding whether to advise continuing labor or to perform repeat cesarean. In order to assist them in this decision-making process, data on outcomes of different management options are reported.

Part 1 To give birth after cesarean

Chapter 2 describes the association between interpregnancy interval and success of vaginal birth after cesarean in a retrospective 10-year cohort study of pregnant women with one prior cesarean, who opted for trial of labor (n = 36 653). Interpregnancy interval is the time between cesarean and conception of a subsequent pregnancy. Vaginal birth success rates were compared between six interval groups. Success rate in the reference group (12 to 24 months) was 72%. Success rates were similar among those with an interval of less than 24 months. Intervals of 24 months or more showed a significant decrease in success rate; 70% in 24- to 35-month intervals, 67% in 36- to 59-month intervals and 62% in intervals of more than 60 months. An interpregnancy interval of less than 24 months is not associated with a decreased success of vaginal birth after cesarean. Success rates decrease when interval increases. Therefore, we propose that the success chance based on interpregnancy interval should not be taken into account when counseling women who are pregnant after a cesarean and need to decide on the intended mode of their delivery.

Chapter 3 describes the effect of a preterm first cesarean on success of subsequent term trial of labor in a Dutch nationwide cohort from January 2000 through December 2009 of women with one previous cesarean and a subsequent term trial of labor. Subgroups were made based on gestational age at first cesarean delivery (25-28, 28-30, 30-32 and 32-34 weeks) and

stratified based on induction or spontaneous start of second delivery. Rates of vaginal deliveries, maternal and neonatal outcomes were compared with women who had a term first cesarean (37-43 weeks). Compared to women with a previous term cesarean, women with a previous preterm cesarean had higher rates of successful trial of labor, both in the spontaneous onset group (86.2 to 96.2% versus 74.2%, significant for all gestational age groups) as in the induction group (72.8 to 75.4% versus 67.6%, significant for 32-34 weeks and 34-37 weeks). Rates of adverse outcomes were low and similar compared to women with a previous term cesarean. The reference group of women with a term first cesarean contained relatively more women with a first cesarean that was performed during labor, for instance for lack of progress. This may explain why they have a lower chance of delivering vaginally as compared to women who did not (got the chance to) try to deliver vaginally. Unfortunately, in our database, the indication for the first cesarean was not registered on a level any further than whether the cesarean was performed before or during labor. However, besides considering the relative success chances, it is also informative to know the absolute success chances of women with a previous premature cesarean. They have fairly high success chances, with roughly four in every five women succeeding in vaginal birth.

Chapter 4 presents a Q methodological study, which aims to support the decision-making process of women and their physicians in planning birth after cesarean, by understanding the priorities that exist among women facing this decision. Participants were presented a set of 31 statements that might be important to them regarding their upcoming delivery, based on the health belief model. Participants ranked the statements according to the degree of importance they assigned to each statements. They were also asked to explain why they sorted the statements as they did. Individual statement rankings were subject to by-person factor analysis. Identified factors were interpreted as preferences regarding the upcoming delivery. The analysis revealed three perspectives. A: *“Minimize the risks for me and my child”*, giving priority to doctors’ advice and chances of adverse events. B: *“Seek the benefits of normal delivery”*, having a desire for a delivery as normal as possible for both emotional and practical reasons. C: *“Opt for repeat cesarean”*, expressing the belief a planned cesarean brings comfort. The results of our study suggest that health care providers could consider discussing the mode of delivery after a cesarean well before the third trimester of a new pregnancy and should be aware of the fact that not every woman might be receptive for the balance of risks and benefits, since her decision and the values on which her decision is based might already be formed before the counselling conversation.

Part 2 To assist birth after cesarean

Chapter 5 presents a qualitative study that aims to increase the understanding of gynecologists’ decision-making during trial of labor as a window of opportunity to intervene in the unexplained practice variation in successful trial of labor after cesarean. Because there is a large variation in the success rates amongst women with comparable medical risk factors, we require better insight in how assessments during trial of labor are made. Following constructivist grounded theory, nine Dutch gynecologists were interviewed. Data indicated they continuously weighed the chance of a successful outcome of trial of labor against the likelihood of adversities. In the decision-making process, patients’ opinions, aspects of progress of labor and gynecologists’ personal stances regarding trial of labor, influenced by organizational affordances and culture played a role. Variation in the assessment of individuals’ chance of

Addendum

success and variable thresholds for a repeat cesarean added to the complexity of decision-making. This qualitative study pieced together patient-, delivery-, physician- and society-related factors that result in vitally important decisions, revealing the complexity as well as the repetitive patterns involved in this process. Exposing these factors offers opportunities to incorporate the decision-making process in targeted educational interventions, aiming to adjust the underlying assumptions and concepts in order to reduce unexplained practice variation.

Chapter 6 describes maternal and neonatal outcomes of attempted operative vaginal delivery, compared with emergency repeat cesarean in trial of labor after cesarean in an 8-year cohort analysis using the Netherlands Perinatal Registry, including women with one prior cesarean giving birth through operative vaginal delivery or emergency repeat cesarean. The results show a highly increased risk of neonatal birth trauma (aOR 15.0 (5.94 to 38.0)) and an increased risk of postpartum hemorrhage (aOR 2.59 (2.17 to 3.09)), but slightly lower risks of wet lung syndrome (aOR 0.53 (0.35 to 0.80)) and neonatal convulsions (aOR 0.47 (0.24 to 0.91)) after attempted operative vaginal delivery compared with emergency repeat cesarean. We suggest that attempted operative vaginal delivery in trial of labor after cesarean should be considered as a difficult operative vaginal delivery.

In **Chapter 7** this thesis is discussed and directions for current guideline and future research are suggested. Key in the trial of labor versus elective repeat cesarean debate is the prediction of who will be successful in achieving vaginal birth. Not only medical risk factors, but also sociocultural processes influence trial of labor success chance. These factors should receive more attention in daily practice, clinical guidelines and future research.