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**INDO AMERICAN JOURNAL OF
PHARMACEUTICAL SCIENCES**<http://doi.org/10.5281/zenodo.2392584>Available online at: <http://www.iajps.com>**Research Article****VAGINAL BIRTH AFTER CESAREAN SECTION (VBAC)****Nasir Ahmad Alsubai*, Tayy Nasser Al Juhani, Mishal Ibrahim Aljikhidib**
Umm Al-Qura University**Abstract:**

Introduction: The rates of performing cesarean deliveries have been dramatically increasing over the last years, as high as 35%, encouraging women with previous cesarean section to get pregnant again. Evidence suggests that subsequent pregnancies will not be significantly affected but can carry risks of failure to deliver vaginally and scar rupture.

Aim of the study: In this study we aim to study the statistic of successful VBAC, factors associated with success, as well as the accompanying risks.

Methodology: We conducted this review using a comprehensive search of MEDLINE, PubMed, and EMBASE, January 1985, through February 2017. The following search terms were used: vaginal birth after cesarean section, uterine scar rupture, emergency cesarean section, TOLAC, VBAC

Conclusion: When managing pregnant women with a history of a prior cesarean section, trying vaginal delivery can be associated with a relatively low risk of developing fetal and maternal complications. However, this risk increases proportionally as the number of prior cesarean sections increase. The most concerning complication in these cases is the possible development of a uterine rupture, that is associated with poor outcomes on both the mother and the baby.

Keywords: VBAC, TOLAC, vaginal birth, emergency cesarean section

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INTRODUCTION:

The rates of performing cesarean deliveries have been dramatically increasing over the last years. In fact, some reports estimate that about 35% of females around the world have had a cesarean delivery. This can mean the number of females who have had a prior cesarean delivery and becoming pregnant is continuously increasing. These women are always put in a difficult situation where they must choose between trying normal birth despite having a prior cesarean delivery or undergoing another cesarean delivery [1].

Recently, reports of successful vaginal deliveries following a cesarean section have been increasing, with minimal mortality and morbidity in both the child and the mother. This encouraged the National Institute of Health and the Society for Maternal-Fetal Medicine to recommend attempting a normal vaginal delivery in pregnant females with a history of one prior cesarean delivery. On the other hand, some suggest that a failed attempt of vaginal delivery following a cesarean section will lead to poor outcomes in both the children and the mother, when compared to immediately undergoing a second cesarean delivery [2].

However, stronger evidence is becoming present to support that having prior cesarean deliveries will not significantly impact the outcomes of a new pregnancy. This is thought to be a result of new advanced techniques that prevented the scar of the previous cesarean section from rupturing during the subsequent pregnancy. Currently, there is no established method to accurately assess the ability of the uterine cesarean scar to bear delivery stress and guarantee its stability. Therefore, the first step before deciding whether to attempt vaginal delivery, or to immediately perform a cesarean section, will depend mainly on proper assessment of the rates of success, safety, and harms associated with normal vaginal delivery in each pregnant woman [2].

METHODOLOGY:

• Data Sources and Search terms

We conducted this review using a comprehensive search of MEDLINE, PubMed, and EMBASE, January 1985, through February 2017. The following search terms were used: vaginal birth after cesarean section, uterine scar rupture, emergency cesarean section, TOLAC, VBAC

• Data Extraction

Two reviewers have independently reviewed the studies, abstracted data, and disagreements were resolved by consensus. Studies were evaluated for quality and a review protocol was followed

throughout.

Statistical Measurements

VBAC Attempt Rate

This term is used to describe the percentage of females with prior cesarean section who try a vaginal delivery, from all females with prior cesarean section. Recent epidemiological studies in the United States have found that the VBAC attempt rates have been declining over the recent years, from 51.8% in the year 1995, to 15.9% in the year 2006. However, studies in the UK found different results, with rates up to 52.2% in the year 2014 [3].

VBAC Success Rate

Vaginal delivery in females with a prior cesarean section could be either successful or failed and resulting of undergoing a second cesarean section. The term 'VBAC' success rate describes the percentage of successful vaginal deliveries in women with a prior cesarean section, from all women with cesarean section who tried a vaginal delivery. This rate has been shown to vary among different populations and regions; it can range from 50% to up to 75% in some areas. However, it was noted to be highest in those who also have a prior successful vaginal delivery. Studies from the United States have shown, however, a steady decline in this rate from 70% in the year 2000 to 39% in the year 2008. In the UK, on the other hand, the rates can be as high as 75% [3].

VBAC Rate

This term describes the percentage of females with prior cesarean section who underwent a successful subsequent vaginal delivery, out of all females who has a history of a prior cesarean delivery. This definition is based on guidelines published by the National Center for Health Statistics [4].

Similar to previous rates, this rate can also vary among different populations and different regions of the world. In the United States, for example, VBAC rates can be as low as 11.9%. Previously, this rate used to be higher in the US. For example, the rate in 1996 was 28.3%. However, since then significant declines have been observed, and rates reached 8.3% in the year 2007. This significant decline made the National Institute of Health release their statement regarding this issue in 2010, where they recommended physicians to perform vaginal deliveries even if the patient had a prior cesarean delivery. Since the release of this statement, rates began to increase again, and reached about 12% in the year 2015. On the other hand, this rate can reach up to 36% in Germany, Italy, and Ireland, and up to

55% in the Netherlands, Finland, and Sweden [5].

VBAC Attempt Outcomes

A vaginal delivery in a female with a prior cesarean section is considered successful when complications are minimal and unsuccessful when it results in severe complications, or it fails and necessitates the performance of an emergency cesarean delivery. Therefore, each pregnant woman should be studied individually to assess her chance of success in vaginal delivery and make the decision according to this assessment [2].

Factors of increased VBAC success rates

The single most important and most accurate factor in the prediction of a successful vaginal delivery in a pregnant woman with a prior cesarean section is having a history of a prior vaginal delivery. Pregnant women, who have a history of a successful vaginal delivery, have a success rate of another vaginal delivery that can be as high as 90%, despite having a history of another cesarean section. Moreover, these women have a significantly low risk of developing uterine rupture. A previous meta-analysis has concluded that having a prior successful vaginal delivery in a pregnant woman with a prior cesarean section led to up to 4 folds increase in the success rate of a current vaginal delivery. In addition, another study that used data from the National Institute of Child Health and Human Development has concluded that having more successful previous vaginal deliveries was associated with even higher chances of having another successful vaginal delivery [6].

Another important risk factor is the presentation in spontaneous labor, which was also shown to be associated with double success rates of having a successful vaginal delivery in pregnant women with prior cesarean sections [6].

Factors of VBAC failure rates

Some factors have been found to be associated with higher rates of vaginal delivery failure in women with a prior cesarean section. These factors include originating from a non-white race, having a baby with high weight, failure to have spontaneous labor, the absence of a prior successful vaginal delivery, having a body mass index that is higher than 30, and having a prior cesarean section that was performed as a result of dystocia presence. The presence of one or more of these factors in a patient can make the success rate of a vaginal delivery less than 40%. Some other factors have been attributed with less success rates of vaginal delivery but with less evidence. These include older maternal age (more

than forty years) and the presence of other co-morbidities in the mother [7].

VBAC versus ERCS

Risks of VBAC

When attempting a vaginal delivery in a pregnant woman who had had a cesarean section before, the most feared complication is the rupture of the uterus. Uterine rupture is considered serious due to its associated high rates of morbidity and mortality for both the mother and the baby. Previous reports have suggested that uterine rupture can occur in up to 0.7% of pregnant women with a prior cesarean section when they attempt a vaginal delivery. Moreover, the presence of prior two cesarean deliveries was shown to be increase the risk of uterine rupture to up to 1.8%. Unfortunately, it is very difficult to prevent the rupture of the uterus, and when this occurs, the outcome is usually poor with severe morbidity and mortality for both the baby and the mother. Therefore, it is essential that clinicians become aware of the prevention, recognition and management of uterine rupture [8].

Risks of ERCS

Undergoing another cesarean section in pregnant women who have already undergone a cesarean section could also be associated with adverse events. Several complications have been reported including surgical injuries, placenta previa and accrete bleedings, the need for blood transfusions, or even hysterectomy. The risk of developing these complications increases significantly as the number of previous cesarean sections increases. More significantly, the risk of undergoing a hysterectomy will significantly increase as the number of previous cesarean sections increases. The morbid adherence of placenta can also have a higher risk in females with multiple previous cesarean sections [9].

Cesarean delivery is also associated with more baby-related complications including breathing problems like respiratory distress syndrome. This can result in more admissions to the intensive care units. These risks are even higher in preterm infants who are born through cesarean section. Asthma, atopy, and obesity, along with other health issues, have been observed in children who were born with cesarean delivery. However, more research is needed to establish more solid evidence of these risks [9].

Evidence for VBAC and ERCS

Based on what we have already mentioned, the choice between vaginal delivery and cesarean delivery in pregnant women with a history of prior cesarean sections remains to be a controversial issue

on which many debates are still made. The main problem relies in the absence of clear evidence on which a solid recommendation can be made. Two clinical trials have been conducted to study this issue with a total of 320 participants. The first trial has concluded that both vaginal delivery and cesarean delivery were associated with similar outcomes regarding maternal outcomes. However, the second trial found that cesarean section led to improved outcomes regarding fetal mortality and maternal hemorrhage. In summary, we still need larger trials that will study this issue more thoroughly to reach more solid results [10].

CONCLUSION:

When managing pregnant women with a history of a prior cesarean section, trying vaginal delivery can be associated with a relatively low risk of developing fetal and maternal complications. However, this risk increases proportionally as the number of prior cesarean sections increase. The most concerning complication in these cases is the possible development of a uterine rupture, that is associated with poor outcomes on both the mother and the baby.

REFERENCES:

1. Betran AP *et al*. Rates of caesarean section: analysis of global, regional and national estimates. *Paediatr Perinat Epidemiol*. 2007; 21: 98-113.
2. American College of O, Gynecologists. ACOG Practice bulletin no. 115: Vaginal birth after previous cesarean delivery. *Obstet Gynecol*. 2010; 116: 450-463.
3. Srinivas SK, Stamilio DM, Stevens EJ, Peipert JF, Odibo AO, Macones GA. Safety and success of vaginal birth after cesarean delivery in patients with preeclampsia. *Am J Perinatol*. 2006; 23: 145-152.
4. Martin JA, Hamilton BE, Osterman MJK. Births in the United States, 2016. *NCHS Data Brief*. 2017; 1-8.
5. Ryan GA, Nicholson SM, Morrison JJ. Vaginal birth after caesarean section: Current status and where to from here? *Eur J Obstet Gynecol Reprod Biol*. 2018; 224: 52-57.
6. Grobman WA *et al*. Development of a nomogram for prediction of vaginal birth after cesarean delivery. *Obstet Gynecol*. 2007; 109: 806-812.
7. Srinivas SK, Stamilio DM, Stevens EJ, Odibo AO, Peipert JF, Macones GA. Predicting failure of a vaginal birth attempt after cesarean delivery. *Obstet Gynecol*. 2007; 109: 800-805.
8. Rozen G, Ugoni AM, Sheehan PM. A new perspective on VBAC: a retrospective cohort study. *Women Birth*. 2011; 24: 3-9.
9. Keag OE, Norman JE, Stock SJ. Long-term risks and benefits associated with cesarean delivery for mother, baby, and subsequent pregnancies: Systematic review and meta-analysis. *PLoS Med*. 2018; 15: e1002494.
10. He L, Chen M, He GL, Liu XX. Clinical study on vaginal birth after cesarean. *Zhonghua Fu Chan Ke Za Zhi*. 2016; 51: 586-591.