



STUDY OF FETO-MATERNAL OUTCOME IN WOMEN WITH ELECTIVE REPEAT CAESAREAN SECTION AND VAGINAL BIRTH AFTER ONE PREVIOUS CAESAREAN SECTION AT A TERTIARY CARE HOSPITAL.

Dr. Shazia Yousuf	Senior Resident, Department of obstetrics and gynaecology, GMC Baramulla.
Dr. Rehana Rashid*	Senior Resident, Department of obstetrics and gynaecology, GMC Srinagar. *Corresponding Author
Dr. Muddasser Nazir	Lecturer, Department of obstetrics and gynaecology, GMC Srinagar.

ABSTRACT **Introduction:** Caesarean section is one of the most common performed procedure on childbearing women, with rates continuing to rise worldwide. In an attempt to reduce the rate of caesarean section, obstetricians now offer a trial of labor to pregnant women who have had a previous caesarean section. This study was performed to assess and compare the feto-maternal outcome in patients undergoing VBAC and ERC. **Methods:** This observational study was carried out in the Department of Obstetrics and Gynaecology, Government Lal Ded Hospital, Srinagar, from May 2015 to April 2017. **Results:** A total of 70 cases of patients who underwent VBAC and 140 cases of patients who underwent ERC were taken and feto-maternal outcome was obtained between these two groups. Out of 70 patients in VBAC group 53(75.51%) delivered vaginally, 17 underwent emergency caesarean section. In failed VBAC most common indication of caesarean section was NPOL (29.42%).AFD (23.53%), scar tenderness (23.53%). Maternal complications rate was similar in both groups (ERC and VBAC). **Conclusion:** A trial of labor after prior caesarean delivery is associated with a greater perinatal risk than is elective repeated caesarean delivery without labor, although absolute risks are low. However elective repeat caesarean is associated with many comorbidities.

KEYWORDS : Caesarean section, Vaginal delivery, VBAC

INTRODUCTION:

Caesarean delivery defines the birth of a fetus via laparotomy and then hysterotomy. Cragin's dictum of "once a Caesarean always a Caesarean" contributed to a 30–50% rise in Caesarean rates in the United States, till 1980s.^{1,2} In India, the Caesarean section rate has increased to 10.6%; an increase of 7.7% during last 10 years³. Concerns about the increasing Caesarean section rate resulted in a consensus statement by the American College of Obstetricians and Gynaecologists in 2010, that "most women with one previous Caesarean delivery with a low-transverse incision are candidates for and should be counselled about VBAC" but maintained it should still be undertaken at facilities capable of emergency care, though patient autonomy in assuming increased levels of risk should be respected^{4,5}. For women who have had a previous Caesarean, choices for mode of birth in their next pregnancy are either a vaginal birth after Caesarean (VBAC) or an elective repeat Caesarean (ERC).The proportion of women attempting a VBAC has been declining in many countries, fuelled by negative reports of an increase in the risk of maternal operations performed on childbearing women, with rates continuing to rise worldwide⁶. For women who attempt a VBAC, the chance of achieving vaginal birth has been variably reported between 56% and 80%⁷.

Both VBAC and ERC have benefits and harms. When vaginal birth after Caesarean section is successful, it is associated with less morbidity than repeat Caesarean section. The advantages include avoidance of repeat Caesarean section, fewer blood transfusions, fever, postpartum infections and shorter hospital stay.⁸

AIMS & OBJECTIVES

1) To assess and compare the maternal and fetal outcome in Vaginal Delivery after Caesarean Delivery and Elective Repeat Caesarean delivery.

MATERIALS & METHODS

This observational study was carried out in Government Lal Ded Hospital, Srinagar, an associated hospital of Government Medical College, Srinagar. This is a 650 bedded tertiary care hospital for Obstetrics & Gynaecology and caters to whole population of Kashmir valley. Women who previously underwent one Caesarean section, after considering inclusion and exclusion criteria, were included in this study. Sample size was calculated using openepi.com to detect an effect size of 10% with 80% power at 95% confidence level and 2:1 enrolment ratio. Accordingly 70 cases of VBAC and 140 cases of ERC were taken. A written informed consent was obtained from all the eligible patients for VBAC /ERC. In all cases, a detailed history was taken with special emphasis on past obstetric history, indication of

previous LSCS, any intra operative or post-operative complication. Maternal outcome in the present pregnancy in the form of mode of vaginal delivery whether spontaneous or induced were noted. Those patients, who required repeat caesarean section in present pregnancy, their indications for caesarean section were noted.

Antepartum, intrapartum and postpartum complications and neonatal outcome in present pregnancy were noted in all patients.

Inclusion Criteria:

- Women with only one previous lower segment Caesarean section
- Singleton pregnancy
- Cephalic presentation
- Term gestation

Exclusion Criteria:

- \geq two Caesarean sections
- Previous uterine surgery like myomectomy
- Estimated fetal weight >4 kg- Classical section
- Interdelivery interval less than 2 yrs

Statistical Analysis:

Data was entered in a Microsoft Excel spreadsheet and analyzed using Epi-Info 7.0. Categorical variables were summarized as frequency and percentage.

RESULTS:

A total of 70 cases of patients who underwent VBAC and 140 cases of patients who underwent ERC were taken. Out of 70 patients in VBAC group 53(75.51%) delivered vaginally, 17 underwent emergency caesarean section. In failed VBAC most common indication of caesarean section was NPOL (29.42%).AFD (23.53%), scar tenderness (23.53%).Mean maternal age was 28.17 \pm 3.19 (yrs) in VBAC group and 30.43 \pm 3.22 (yrs) in ERC group. Maternal complications rate was similar in both groups (ERC and VBAC). However major complications/comorbidities like scar rupture (1.43%), bladder injury (2.86%), cervical tear(2.86%), and death(1.43%) occurred in VBAC group. PPH (2.14% in ERC and 1.43% in VBAC) and other complications like puerperal pyrexia (2.86% in ERC and 1.43% in VBAC), wound infections (2.14% in ERC and none in VBAC), paralytic ileus (2.14%), LRTI (3.57%) were comparatively more common in ERC. There were few fetal complications in both groups. Total complications in VBAC was 9 (12.86%) and 12 (8.5%). In VBAC there were 3(4.29%) babies born with low APGAR SCORE as compared to 2 (1.43%) in ERC.

Table 1: Age Distribution Of Patients In Vbac And Erc Groups

Age (Yrs)	VBAC		ERC	
	Number	%	Number	%
18-25	8	11.43	11	7.86
26-30	36	51.43	71	50.71
>30	26	37.14	58	41.43
Total	70	100	140	100
MEAN±SD	28.17±3.19		30.43±3.22	
P value=	0.001			

Table 2: Maternal Complications

Complications	VBAC		ERC	
	No.	%	No.	%
Cervical Tear	2	2.86	0	0
Bladder repair	2	2.86	0	0
PPH	1	1.43	3	2.14
Puerperal pyrexia	1	1.43	4	2.86
Rupture Uterus	1	1.43	0	0
Paralytic Ileus	0	0	3	2.14
LRTI	0	0	5	3.57
Wound Infections	0	0	3	2.14
Parietal Wall hematoma	0	0	1	0.71
Death	1	1.43	0	0
Total complications	8	11.43	19	13.57
Total cases	70	-	140	-
p=	0.827 (For total complications)			

Table 3: Fetal Complications

Fetal Complication	VBAC		ERC	
	No.	%	No.	%
Low APGAR	3	4.29	2	1.43
Still Birth	1	1.43	0	0
MAS	1	1.43	1	0.71
Birth Asphyxia	2	2.86	0	0
RDS	0	0	4	2.86
TTN	1	1.43	4	2.86
IUGR	1	1.43	1	0.71
Total complications	9	12.86	12	8.5
Total	70	-	140	-
p =	0.464 (For total complications)			

DISCUSSION

Most of the patients were below 30 yrs of age (63% in VBAC group and 60% in ERC group). **Shah Jitesh Mafatlal et al (2009)** and **Doshi Haresh et al (2010)** observed results similar to our study.^{9,10} In our study mean maternal age was 28.17±3.19 (yrs) in VBAC group and 30.43±3.22 (yrs) in ERC group, which was found to be statistically significant. Similar results were found by **landon et al.**¹¹

Women with a prior vaginal delivery were more likely to undergo a trial of labor (17% in VBAC and 13% in ERC), but this was not statistically significant.

Among 13 patients who had previous vaginal deliveries in VBAC group, 11(84.6%) delivered vaginally and 2(15.4%) underwent emergency caesarean for non recurrent indication. Among 57 patients who had no previous history of vaginal delivery in VBAC group, 42(73.68%) delivered vaginally and 15(26.32%) underwent caesarean section. VBAC was found to be more successful in women with prior vaginal delivery. Similar results were found by **Goel ss et al.**⁸

Most of the patients had gestational age between 37-39 weeks (91.43% in VBAC and 83.57% in ERC group). Similar findings were seen in a study conducted by **Shah Jitesh Mafatlal et al (2009)**.⁹

Among the patients in VBAC group most common indication for previous caesarean was AFD (30%) and in ERC group most common indication for previous caesarean was AFD (25.71%). **Crowther et al** found most common indication in VBAC group was AFD (38%), similar to our study. And in ERC most common indication was NPOL (42.4), AFD and other indications¹².

As far as the mode of delivery is concerned, 47(67.14%) had spontaneous vaginal delivery, 5(7.14%) had vacuum delivery, 1(1.43%) had forceps delivery and 17(24.29%) had caesarean delivery (failed VBAC). Successful VBAC was seen in 53(75.71%) patients

out of 70 patients in VBAC group. **Vardhan Shakti et al (2006)**, studied 237 women of which 171 (72.1%) delivered vaginally and 66 (27.9%) had to be taken up for emergency LSCS.¹³

In failed VBAC, most common indication of caesarean section was NPOL (29.42%).AFD (23.53%), scar tenderness (23.53%), followed by FOI, NDOH were other common indications. Similar results were found in a study by **Puri P et al (2011)**, wherein the most common indication of repeat caesarean section was failure to progress in 50% followed by fetal distress in 24.44%.¹⁴

Regarding maternal complications in both groups (ERC and VBAC), rate was similar. However major complications/comorbidities like scar rupture (1.43%), bladder injury (2.86%), cervical tear(2.86%), and death(1.43%) occurred in VBAC group. Cause of death was atonic severe PPH. **Landon MB,Hauth JC and Leveno KJ et al (2004)** found the frequency of hysterectomy and of maternal death did not differ significantly between groups, VBAC and ERC (0.2 percent vs. 0.3 percent, and 0.02 percent vs. 0.04 percent, respectively).¹¹

Scar rupture was found in 1.43% in our study in VBAC group. Increased incidence of scar rupture in our study may be because of small sample size. **Latika et al** found Scar dehiscence was seen in 2 patients (4%) and one patient (2%) had scar rupture. No Maternal or fetal mortality was observed.¹⁵

It was observed there were few fetal complications in both groups. Our results were consistent/comparable with study done by **Vardhan Shakti et al (2006)**.¹³

CONCLUSION:

The decision to undergo TOLAC is an individual one that should be based on careful and thorough counselling about risk benefits about TOLAC. Potential major maternal complications like scar rupture were slightly more in VBAC than ERC. Both VBAC and ERC has its own limitations. The significance of vaginal delivery is emphasized because of its minimum post partum morbidity, anesthetic and operative risks, financial liabilities, emotional and psychological satisfaction to the mother.VBAC is a safe practice as long as it is offered with proper selection of candidates, appropriate timing and suitable methods of induction with close supervision by trained staff in a hospital capable to provide comprehensive emergency obstetric care. Carefully supervised vaginal delivery after caesarean section needs to be enthusiastically encouraged by promoting trial of labor after caesarean section (TOLAC) so that alarming increasing rate of caesarean section and associated complications are decreased.

Funding: No funding sources.

Ethical approval: The study was approved by the Institutional ethics committee

REFERENCES

1. Cragin EB. Conservatism in obstetrics. NY Med J 1916; 104(1): 1-3
2. Menacker F, Curtin SC. Trends in Caesarean birth and vaginal birth after previous Caesarean. 1991-99. Natl Vital Stat Rep 2001; 49:1-16.
3. National Family Health Survey, Rounds II & III. Ministry of Health and Family Welfare, Government of India. Available at <http://www.rchips.org/nfhs/nfhs3.shtml>. Accessed on 24th October 2014
4. American College of Obstetricians and Gynecologists (ACOG). ACOG Practice bulletin no.115: Vaginal birth after previous Caesarean delivery. Obstet and Gynecol. 116, 2010, 450-63.
5. ACOG Practice Bulletin, Vaginal birth after previous caesarean delivery. Clinical Management Guidelines For Obstetrician-Gynaecologists, 2010; 115
6. Hamilton BE, Martin JA, J. VS (2009) Births: preliminary data for 2007. Natl Vital Stat Rep 57: 1-23.
7. Maledo B and Yirgu G. Factors associated with success of vaginal birth after one Caesarean section (VBAC) at three teaching hospitals in Addis Ababa, Ethiopia: a case control study. BMC Pregnancy and Childbirth 2013; 13:31-8
8. Goel SS et al. Outcome of post Caesarean pregnancy and comparison of maternal and foetal outcome following vaginal birth versus repeat Caesarean section in a rural hospital. Int J Reprod Contracept Obstet Gynecol. 2013 Mar;2(1):16-22.
9. Shah Jitesh Mafatlal, Mehta MeghanaNarendrabhai. Analysis of mode of delivery in women with previous one caesarean section. J Obstet Gynecol India March/April 2009; Vol. 59, No. 2: pg 136-139.
10. Doshi Haresh U, Jain Rohit K, Vazirani Aarti A. Prognostic factors for successful vaginal birth after caesarean section - Analysis of 162 cases. J Obstet Gynecol India Nov/Dec. 2010; Vol. 60, No. 6: pg 498- 502.
11. Landon MB,Hauth JC , Leveno KJ et al. Maternal and Perinatal Outcomes Associated with a Trial of Labor after Prior Caesarean Delivery. N Engl J Med 2004;351:2581-9.
12. Crowther CA, Dodd JM, Hiller JE, Haslam RR, Robinson JS, et al. (2012) Planned Vaginal Birth or Elective Repeat Caesarean: Preference Restricted Cohort with Nested Randomised Trial. PLoS Med 9(3): e1001192.
13. Vardhan Shakti, Behera RC, Sandhu GS, Singh Anita, Bandhu HC. Vaginal birth after caesarean delivery. J Obstet Gynecol India July/Aug. 2006; Vol. 56, No. 4: Pg 320-323
14. Pujja Puri, Mary Abraham, Seema Grover. Vaginal Birth After One Previous Lower Segment Caesarean Section. JK Science 2011; 13(4): 179-181.

15. Latika et al .Study of comparison of maternal and fetal outcome of elective repeat Caesarean versus vaginal birth in women after one prior lower segment Caesarean section. *Int J Reprod Contracept Obstet Gynecol.* 2015 Jun;4(3):664-668