

Frequency of Successful Vaginal Delivery after Induction of Labour in Obese Pregnant Women Presenting at Tertiary Care Hospital Peshawar

AQSA LATIF¹, MAIMOONA AZAM², HINA KHAN³, MADIHA IQBAL⁴, IMRAN KHAN⁵, ZAKIA KHAN⁶, SHAGUFTA NAZ⁷, MUHAMMAD SABTAIN ABID⁸

¹Consultant Gynae & Obstetric, Afridi medical complex and teaching hospital, Peshawar

²Assistant professor of Gynae, Bannu Medical College, Bannu

³Assistant professor Gynae & Obstetric, MTI, Bannu

⁴Women medical officer, Civil dispensary Gulbhar-2

⁵Department of Microbiology and molecular genetics, University of Okara

⁶Professor Gynaecology, women and children hospital Medical teaching institution Bannu

⁷Department of Microbiology and molecular genetics, University of Okara

⁸Department of Zoology, Faculty of Life Sciences, University of Okara, Okara 56130

Corresponding author: Madiha iqbal, Email: madihaahsan8@gmail.com

ABSTRACT

Introduction: The incidence of induction of labour is 20% of all deliveries and is considered as the most common techniques in modern obstetrics. But both medically indicated and elective inductions are thought to increase the risk of instrumental and cesarean deliveries.

Objective: Aim of this study was to determine the frequency of successful vaginal delivery after induction of labour in obese women.

Methodology: This study was descriptive study carried out at Gynecology and Obstetrics Department, Hayatabad Medical Complex, Peshawar. The duration of study was Six months (from 1/2/2021 to 1/8/2021). Detail history, clinical examination, routine investigation were performed for the confirmation of obese pregnant women. All the data i.e. age, gestational age, parity, gravidity, number of induction, duration of labour, previous history of C section was recorded in pre design performa. All the recorded information on performa was entered in statistical software SPSS ver 23.

Results: Our study shows that among 149 patients mean maternal age was 29 years with standard deviation ± 5.91 . Among 149 patients successful vaginal delivery was observed in 86(58%) patients while 63(42%) patients were observed with unsuccessful vaginal delivery.

Conclusion: Our study concludes that the frequency of successful vaginal delivery was 58% after induction of labour in obese pregnant women presenting at tertiary care hospital Peshawar.

Keywords: Successful vaginal delivery, Induction of labour, obese pregnant women

INTRODUCTION

The incidence of induction of labour is 20% of all deliveries and is considered as the most common techniques in modern obstetrics¹. It is indicated for prolonged labour, chronic hypertension, gestational diabetes mellitus, suspected fetal growth restriction and larger for gestational age fetus. But both medically indicated and elective inductions are thought to increase the risk of instrumental and cesarean deliveries². In spite of the fact that caesarean delivery is a relatively risk-free surgical operation, an unplanned emergency caesarean delivery during labour has a higher risk of maternal morbidity and death as well as mother psychological stress in contrast to planned elective caesarean delivery³. Therefore several techniques have been studied and proposed in an attempt to decrease complications associated with induction of labour. Regrettably, obesity is also connected with a greater likelihood of unsuccessful inductions necessitating a caesarean birth, particularly in nulliparous obese women. The risk of induction failure raises steadily with rising obesity classes, much as the incidence of labour induction⁴. The probability of caesarean birth after labour induction is increased by a number of other maternal and foetal variables in addition to nulliparity^{5, 6}. A decreased cervical dilation at admission, no previous vaginal births, and a foetal weight of 44,000g are all statistically linked to an increased risk of a failed labour induction and subsequent caesarean delivery. There was no difference in the rate of caesarean delivery for obese women following induction based on maternal age, race, or the gestational age of the baby; however there was a lower incidence of caesarean delivery for women who were multiparous and had a lower Bishop's score at admission^{7, 8}. In another study conducted by Arrowsmith S et al.⁹ had reported that the frequency of vaginal delivery was 55% after induction of labour in obese women. Aim of this study was to determine the frequency of successful vaginal delivery after induction of labour in obese women. Although many studies had been conducted on this topic in other population However, no similar research has been done in our population over the last five years. This study will give

us the most recent data on the frequency of vaginal deliveries that are successful in our obese population after labour induction. More over the results of this study will be shared with other health professionals for better treatment and future recommendation and also the results will used for future research.

MATERIAL AND METHODS

This study was descriptive study carried out at Gynecology and Obstetrics Department, Hayatabad Medical Complex, Peshawar. The duration of study was Six months (from 1/2/2021 to 1/8/2021). The total sample size was 149, keeping 55%¹⁰ prevalence of successful vaginal delivery after induction of labour in obese pregnant women, 95% confidence interval 8% margin of error according to WHO formula for sample size calculation. Consecutive (non-probability) sampling was employed in our study. The inclusion criteria of our study was all the obese pregnant women presenting at term with any parity and gravidity, age range 18-35 years, booked and un-booked patients and period of gestation >37 weeks. All the women presenting with complicated pregnancy with preeclampsia, premature rupture of membranes, mal presentation and multiple pregnancy, Refusal for consent were excluded from the study because they act and confounders and had create bias in study results if included in the study. The current study was carried out after taking approval from hospital ethical committee. All the women fulfilling the inclusion criteria i.e. all the obese pregnant women presenting at term with any parity and gravidity were enrolled in the study through Gynecology and Obstetrics Department. Written informed consent was taken at the time of admission.

Detail history, clinical examination, routine investigation were performed for the confirmation of obese pregnant women. All included patients were induced by intracervical PGE2 gel 0.5mg. Re induction was performed after 8 hour of initial induction, in cases of induction failure (inability to achieve cervical dilatation >4 cm) and it was repeated with third gel if required. Patients were followed for 24 hours. the patients were subjected for cesarean

delivery in case of fetal distress, non progress of labour and failure of induction with/without chorioamnionitis (Intrapartum temperature >100.4°F or >37.8°C (by thermometer), tachycardia (>120 beats/min), Fetal tachycardia (>160-180 beats/min), Purulent or foul-smelling vaginal discharge and maternal leukocytosis (total blood leukocyte count >15,000-18,000 cells/μL) on laboratory test) for both maternal and fetal well being. All the procedures were conducted under the supervision of Consultant Gynecologist (FCPS) having 5 years of experience. All the data i.e. age, gestational age, parity, gravidity, number of induction, duration of labour, smoking, socioeconomic status, mother education, previous history of C section was recorded in pre design performa (attached). All the recorded information on performa was entered in statistical software SPSS ver 23 and descriptive analysis was performed. Mean and standard deviation were computed for quantitative variables i.e. age, gestational age, number of induction, duration of labour. Frequency and percentage were calculated for categorical variable i.e. parity, gravidity, smoking, socioeconomic status, mother education, previous history of C section, successful vaginal delivery.

RESULTS

In our study, distribution of age among 149 patients was analysis as 107(72%) patients were 18-30 years old and 42(28%) patients were in age range 31-35 years. The mean (SD) maternal age was 29 (±5.91) years. Based on status of parity, 48(32%) patients were primipara while 101(68%) patients were multi para. Based on status of gravidity, among 149 patients, 46(31%) patients were primi gravid whereas 103(69%) patients were multi gravida.

The period of gestation in 91(61%) patients had POG 37-39 weeks and 58(39%) patients had POG 40-42 weeks. Status of number of inductions among 149 patients was analysis as 97(65%) patients had number of induction ≤2 and 52(35%) patients had number of induction >2. Based on duration of labour, 97(65%) patients had duration of labor ≤12 hours and 52(35%) patients had duration of labor >12 hours. Previous history of C/S was observed in 3(2%) patients and 146(98%) patients were observed with no previous history of C/S. (Table 1)

Table 1: Socio-demographic and clinical parameters of the enrolled patients

Parameter	Sub-category	Frequency (Percentage)
Age	18-30 years	107 (72%)
	31-35 years	42 (28%)
Parity	Primi Para	48 (32%)
	Multi Para	101 (68%)
Gravidity	Primi gravida	46(31%)
	Multi gravida	103 (69%)
Gestation period	37-39 weeks	91 (61%)
	40-42 weeks	58 (39%)
Number of inductions	≤2	97 (65%)
	>2	52(35%)
Duration of labour	≤12 hours	97 (65%)
	>12 hours	52(35%)
Previous history of cesarean section	Yes	3 (2%)
	No	146 (98%)

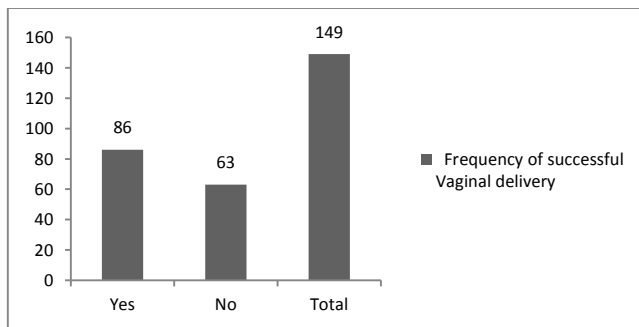


Figure 1: Frequency of successful vaginal delivery after induction of labour in obese pregnant women

Among 149 patients successful vaginal delivery was observed in 86(58%) patients while 63(42%) patients were observed with un-successful vaginal delivery. (Figure 1)

DISCUSSION

Obese pregnant women are more likely to have difficulties during pregnancy and delivery, which might be harmful to both the mother and the child¹¹. Obese women are more likely to have postpartum haemorrhage, thromboembolism, gestational diabetes, miscarriage, and pre-eclampsia^{12, 13}. Maternal obesity may be an independent risk factor for assisted birth, caesarean section, and poor newborn outcomes, according to an increasing body of research¹³⁻¹⁷.

Due to the increased risk of problems, pregnant women who are overweight seem to be more likely to have their labours induced¹³. Induction rates in the general obstetric population in the United Kingdom increased from 22.1% in 2011–2012 to 25% in 2013–2014¹⁸. Additionally, research suggests that induced labour rates are rising globally¹⁹.

Our study shows that among 149 patients mean maternal age was 29 years with standard deviation ± 5.91. 48(32%) patients were primipara, 101(68%) patients were multi para. 46(31%) patients were primi gravida, 103(69%) patients were multi gravida. 91(61%) patients had POG 37-39 weeks and 58(39%) patients had POG 40-42 weeks. 97(65%) patients had number of induction ≤2 and 52(35%) patients had number of induction >2. 97(65%) patients had duration of labor ≤12 hours and 52(35%) patients had duration of labor >12 hours. Previous history of C/S was observed in 3(2%) patients and 146(98%) patients were observed with no previous history of C/S. Among 149 patients successful vaginal delivery was observed in 86(58%) patients while 63(42%) patients were observed with un-successful vaginal delivery. In accordance with our study, a study carried out by Arrowsmith S et al. reported that the frequency of vaginal delivery was 55% after induction of labour in obese women⁹. Another study carried out by Raja JF et al also reported similar results. In their observations, 67 (67%) of the women delivered vaginally, whereas 33 (33%) had a repeat caesarean section. A total of 55 (55%) of the participants had never given birth vaginally before or after a prior caesarean section; 15 (15%) had done so; 30 (30%) had given birth vaginally only after a previous caesarean section. After a caesarean section, the success rate for vaginal births improved from 38% for women with a score of 0 to 3 to 58% for patients with a score of 4-6. Efficiency scores were correspondingly 71% and 86% for those with scores of 7-9 and 10-12²⁰. Another research by Antonakou A et al. found comparable outcomes after observing 1274 women with a mean (SD) age of 26.3 (5.9) years. At the time of booking, the average BMI was 26.5 kg/m², with 24.3% of the population being obese and 28.8% being overweight. A caesarean section (CS), an instrumental birth, and a normal vaginal delivery made up the sample's 70.4%, 15.4%, and 14.2%, respectively. Overweight and obese women had a 1.58- and 2.75-fold increased risk for a CS, respectively, compared to women with a normal body mass index. The incidence of CS was 10.2% among women of normal body mass index, 15.8% among those who were overweight, and 24.9% among those who were obese (p0.001)²¹.

CONCLUSION

Our study concludes that the frequency of successful vaginal delivery was 58% after induction of labour in obese pregnant women presenting at tertiary care hospital Peshawar.

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