FREQUENCY OF SUCCESSFUL VAGINAL DELIVERY AFTER INDUCTION OF LABOR IN OBESE AND NON OBESE PRIMIGRAVIDAS

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Abstract
Introduction
Obesity has emerged as a major public health problem around the globe over the past two decades. as the overall prevalence of obesity increases so does the number of women of reproductive age who are overweight or obese. The association between maternal obesity, pregnancy and labour outcomes are complex. Emerging evidence suggests obesity is associated with increased complications during pregnancy Local data on frequency of successful vaginal delivery after induction of labour in post-date Obese and Non-Obese Primigravida is very scarce and may be different due to different Geographic, Social, Economic and Environmental factors in our local population.

Objective:
To determine the frequency of successful vaginal delivery after induction of labour in post-date Obese and none Obese primigravida.

Setting: Gynecology and Obstetrics Department, Lady Reading Hospital, Peshawar.

Study design: Descriptive cross-sectional study

Duration of study: Six months 03 April, 2019 to 03 October, 2019

Material And Methods: 170 Patients fulfilling the inclusion criteria from Inpatient Gynecology and Obstetrics Department, Lady Reading Hospital, Peshawar were included in the study after permission from ethical committee and research department. Basic demographics was noted and Informed consent were taken. Inclusion and Exclusion criteria were strictly followed to control the confounding variables. All patients were induced by intracervical PGE2 gel 0.5mg . Reinduction was done 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 maximum 24 hours. Cesarean delivery were performed 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.

Results: In this study mean age was 28 years with SD ± 8.55. All the 170 patients were primigravida. Eighty eight percent patients had POG 41 weeks while 12% patients had 42 weeks. Sixty six percent patients were non obese and 34% patients were obese. More over seventy five percent patients had successful vaginal delivery while 25% patients didn't had successful vaginal delivery.

Conclusion: Our study concludes that the frequency of successful vaginal delivery was 75% after induction of labour in post-date primigravida.

Key words: successful vaginal delivery, induction of labour, post-date, primigravida

INTRODUCTION

Obesity has emerged as a major public health problem around the globe over the past two decades.[1] As the overall prevalence of obesity increases, so does the number of women of reproductive age who are overweight or obese. The association between maternal obesity and pregnancy and labour outcomes are complex. Emerging evidence suggests obesity is associated with increased complications during pregnancy,[2] labour and delivery, and into the postpartum period, as well as adverse neonatal outcomes which include fetal growth abnormalities such as macrosomia,[3] neural tube defects,[4] and stillbirth.[5]

These have implications for obstetrical management, maternal and neonatal care. In addition to the deleterious impact on the overall health of pregnancy, obesity may also affect clinical decisions for the management of labour and delivery, which ultimately may have repercussions on health care costs and maternity services. Accumulating evidence suggests that obesity contributes to the increased rates of labour induction[6] and obstetrical interventions. Labour progression is significantly slower in obese women,[7] whereas duration of labour, oxytocin requirements and caesarean delivery rates increase with increasing maternal body mass index (BMI).[8]

Management of pregnancies in obese women, however, is difficult because IOL is associated with a high risk of caesarean section and its attendant complications of infection, hemorrhage and thrombosis whereas conservative management is associated with an increased risk of perinatal mortality. The clinician managing an obese woman with a prolonged pregnancy therefore faces the dilemma of whether to; induce her and risk caesarean section delivery and its complications, which can include Maternal death, to book an elective caesarean section and thereby reduce the increased risks associated with emergency caesarean section, or to wait so as to maximize the chance of spontaneous labour, thereby reducing the risk of caesarean section but increasing the risk of fetal death, even with outpatient monitoring. Arrowsmith S, et al has found in a study that frequency of vaginal delivery was 55% and Caesarean section delivery was 28.5% after induction of labour in obese women.[9] Lee VR, et al has found in another study that frequency of vaginal delivery was 4.7% and Caesarean section delivery was 20% after induction of labour in obese women.[10] Much of our information on outcomes after induction of labour in obese women is from foreign literature. Moreover due to contradictions of results of these studies, their results cannot be generalized on all populations, i.e one study[9] showed more frequency of vaginal delivery while other showed more frequency of Caesarean section delivery after induction of labour in obese women.[10] Local data on frequency of successful vaginal delivery after induction of labour in post-date Obese and Non-Obese Primigravida is very scarce and may be different due to different Geographic, Social, Economic and Environmental factors in our local population. Therefore I have planned to determine the frequency of successful vaginal delivery after induction of labour in post-date Primigravida and also to compare successful vaginal delivery after induction of labour in post-date Obese and Non-obese Primigravida

in our general population. My study will pave the way for further research on this topic in our general population and help for proper management of obese pregnant women.

MATERIAL AND METHODS

Setting: Gynecology and Obstetrics Department, Lady Reading Hospital, Peshawar.

Study design: Descriptive cross-sectional study

Duration of study: Six months 3/4/2019 to 3/10/2019

Sample size: Sample size was calculated by following formula: n= z^2 pq/ d^2 Where expected least proportion (Vaginal Delivery) p= 55%.[9] q= 1-p and d= 7.5% and   Confidence level = 95% Sample Size was n= 170

Sampling technique: Non-Probability Consecutive Sampling

Inclusion Criteria:
➢ All pregnant women (Obese and Non-Obese), with Gestational age 40+ weeks
➢ Women Age 20-35 years
➢ Primigravida

Exclusion Criteria:
➢ Multigravida
➢ Complicated pregnancy with preeclampsia, Diabetes Mellitus Hypertension and Premature rupture of membranes which will be confirmed through properhistory   taking,   examination, routine laboratory investigations and Obstetrical ultrasound.
➢ Primigravida with malpresentation and multiple pregnancy confirmed by ultrasound scan
➢ Refusal for consent

DATA COLLECTION PROCEDURE: 170 Patients fulfilling the inclusion criteria from Inpatient Gynecology and Obstetrics Department, Lady Reading Hospital, Peshawar were included in the study after permission from ethical committee and research department. Basic demographics was noted and Informed consent were taken. Inclusion and Exclusion criteria was strictly followed to control the confounding variables. **A**ll patients were induced by intracervical PGE2 gel 0.5mg . Reinduction was done 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. Patient as followed for maximum 24 hours. Cesarean delivery were performed 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 was done under the supervision of consultant gynecologist having 3 years post fellowship experience. Data was recorded by the researcher herself on a especially design proforma.(Annexure-I).

Data Analysis: Data was analyzed with statistical analysis program SPSS version 22 (SPSS, IBM). Mean ±SD was computed for quantitative variables like age, gestational age, parity, weight, height, BMI and number of induction. Frequency and percentage were computed for obesity, successful vaginal delivery.

RESULTS
In this study age distribution among was analyzed as 80(47%) patients were in age 20-25 years, 63(37%) patients were in age range 26-30 years, 27(16%) patients were in age range 31-35 years. Mean age was 28 years with SD ±8.55. (table no 1) Parity distribution was analyzed as all the 170

patients were primi para (table no 2) Period of gestation was analyzed as 150(88%) patients had POG 41 weeks while 20(12%) patients had 42 weeks.(table no 4) Status of obesity was analyzed as 122(66%) patients were non obese while 58(34%) patients were obese.(table no 4) Number of induction was analyzed as 51(30%) patients had induction for 1 time, 99(58%) patients had induction for 2 times, 20(12%) patients had induction for 3 times. (table no 5) Status of successful vaginal delivery was analyzed as 128(75%) patients had successful vaginal delivery while 42(25%) patients didn't had successful vaginal delivery.(table no 6)

TABLE NO 1. AGE DISTRIBUTION

AGE	FREQUENCY	PERCENTAGE
20-25 years	80	47%
26-30 years	63	37%
31-35 years	27	16%
Total	**170**	**100%**

TABLE NO 2. PARITY

PARITY	FREQUENCY	PERCENTAGE
Primi para	**170**	**100%**
Total	**170**	**100%**

TABLE NO 3. PEROID OF GESTATION

PERIOD OFGESTATION	FREQUENCY	PERCENTAGE
41 weeks	150	88%
42 weeks	20	12%
Total	**170**	**100%**

TABLE NO 4. OBESITY DISTRIBUTION

OBESITY	FREQUENCY	PERCENTAGE
Non Obese (< 30 Kg/m2)	112	66%
Obese (> 30 Kg/m2)	58	34%
Total	**170**	**100%**

TABLE NO 5. NUMBER OF INDUCTION

NUMBER OFINDUCTION	FREQUENCY	PERCENTAGE
1 time	51	30%
2 times	99	58%
3 times	20	12%
Total	**170**	**100%**

TABLE NO 6. SUCCESSFUL VAGINAL DELIVERY

SUCCESSFUL VAGINAL DELIVERY	FREQUENCY	PERCENTAGE
Yes	128	75%
No	42	25%
Total	**170**	**100%**

DISCUSSION

Obesity has emerged as a major public health problem around the globe over the past two decades.[1] as the overall prevalence of obesity increases so does the number of women of reproductive age who are overweight or obese. The association between maternal obesity and pregnancy and labour outcomes are complex. Emerging evidence suggests obesity is associated with increased complications during pregnancy,[2] labour and delivery, and into the postpartum period, as well as adverse neonatal outcomes which include fetal growth abnormalities such as macrosomia,[3] neural tube defects,[4] and stillbirth.[5]

Our study shows that mean age was 28 years with SD ± 8.55. All the 170 patients were primi para. Eighty eight percent patients had POG 41 weeks while 12% patients had 42 weeks. Sixty six percent

patients were non obese and 34% patients were obese. More over seventy five percent patients had successful vaginal delivery while 25% patients didn't had successful vaginal delivery.

Similar results were observed in another study conducted by Arrowsmith S et al[11] in which had a significantly higher rate of IOL ending in caesarean section compared with women of normal weight following IOL (38.7% versus 23.8% primiparous; 9.9% versus 7.9% multiparous women, respectively); however, length of labour, incidence of postpartum haemorrhage and third-degree tear, rate of low cord blood pH, low Apgar scores and shoulder dystocia were similar in all body mass index categories. Complications included a higher incidence of fetal macrosomia and second- degree, but not third-degree, tear in primiparous women. Similar results were observed in another study conducted by Lee VR et al[12] in which has found in another study that frequency of vaginal delivery was 4.7% and Caesarean section delivery was 20% after induction of labour in obese women. In another study Maged AM et al[13] had reported that CS rate was significantly higher in obese group [26.4 vs 15.9%; difference in proportion (95% CI) 0.1 (0.01, 0.19); P value 0.02]. 106 (73.6%) obese women and 121 (84.1%) non-obese women delivered vaginally. In addition, the duration till VD was significantly higher in obese group (22 vs 19 h, P value 0.01). After adjustment for possible confounding factors, the CS was still higher in the obese group in comparison to non-obese group (OR 2.02; 95% CI 1.1, 3.7; P value 0.02). This finding suggested that obesity was an independent factor for failure of IOL. In addition, after adjustment for these confounders, obesity had the risk of increasing labor duration by 2.3 h (95% CI 0.1, 4.5) in cases that ended in VD.

CONCLUSION
Our study concludes that the frequency of successful vaginal delivery was 75% after induction of labour in post-date primigravida.

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