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COMPARISON BETWEEN PRIMIPARITY AND MULTIPARITY AS AN INTRAPARTUM OBSTETRIC RISK FACTOR

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Abstract:

Objective: *To access that primiparity is an intrapartum obstetric risk factor for maternal and perinatal results.*

Methods: *The comparative case-controlled study was conducted at the Lahore General Hospital, from June 2017 to May 2018. A self-developed questionnaire was used to obtain relevant information 70 women who were included as part of the study: 35 primigravida and 35 multigravida. The questionnaire covered detailed record of management of labor. Inclusion criteria were singleton pregnancy with cephalic presentation at term. Exclusion criteria included serious medical illness, recurrent abortions, poor obstetrical history, IUD, congenital anomalies, previous CS, twin pregnancy, malpresentation, significant antepartum bleeding and Rhesus (Rh) incompatibility.*

Results: *Primigravidas were at notably higher risk for prolonged duration first and second stage of labor, more chances of fetal distress during labor and need for close monitoring in contrast to the multigravidas. Primigravida were also at convincing higher risk for operative vaginal delivery and emergency caesarean section. The ratio of primary postpartum haemorrhage in primigravidas was found to be increased, and perinatal morbidity was also hiked in the group.*

Conclusion: *Results highlighted that primiparity is a risk factor for maternal and perintal outcome as compared to multigravida.*

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INTRODUCTION:

Intrapartum duration has higher risk of mortality for mother and baby. An approximated 42% of the world's 535,900 annual maternal expiries are intrapartum-related.[1] These mortalities are closely associated to the demise of 1.02 million babies during labor and 904,000 intrapartum-related (birth asphyxia) neonatal expiries.[1] In many underdeveloped countries, most women deliver at home or in clinics where even they lack basic facilities. Even among women without pregnancy complications, women in labor and their babies can rapidly develop complications where in time access to health services may be life-saving.[2] Identification before labour of women at risk of dystocia and timely referral to a hospital for delivery is one of the approach to reduce maternal and perinatal morbidity and mortality.[3] Intrapartum complication risk is based mainly on the previous obstetric history which is lacking in all primigravida patients. There are fundamental differences in what constitutes normal labor in a primigravida and that which is normal in a multigravida. Indeed the statement that 'primigravidae and multigravidae is considered as different species' in labor and is undoubtedly accurate.[4] The most discrete feature of a first labor is its duration, being quite longer than any subsequent labors. A primary obstetric care objective outlined by the Healthy People 2010 is to reduce births with cesarean section among healthy low-risk women giving birth for the first time.[5] The WHO examined national caesarean section (CS) rates and maternal and perinatal mortality rates from various countries and concluded that there is no additional health benefits associated with a CS rate above 10-15%.[6] International obstetric CS practice confirms wide variation in CS rates in mothers with cephalic presentation and spontaneous labor at term, a low-risk cohort amenable to effective intrapartum corrective intervention.[7] In a Lahore-based research, dystocia was the main indication for C-Section, which accounts for 28.2% of births.[8] Other researches in different tertiary care hospitals in Pakistan reported CS rate as high as 67.7% and 45.1% in the year 2007.[9,10] In a study conducted in Nawabshah, Sindh, the CS rate was observed to have increased from 29.70% in 2003 to 36.98% in 2010.[11] In order to cut down the rising CS rate among obstetric low-risk pregnant women, careful thought should be given to the outcome of future pregnancies while making a decision to perform a primary CS.[12] The objective of this study was to determine whether primiparity is an intrapartum obstetric risk factor for maternal and perinatal outcome.

Patients and Methods

The prospective comparative, case-controlled study was conducted at Lahore General Hospital Lahore The study lasted from June 2017 to May 2018. The sampling technique was convenient, non-probability sampling. The study comprised 70 pregnant women; 35 primigravidae and multigravidae each. A self-developed structured questionnaire was used to obtain relevant information. The inclusion criteria involved age range to be 18-30 years, parity as primigravida in comparison with multigravida where parity ranged between 1-3. Gestational age taken was between 38-40 weeks. Females included with singleton fetus with cephalic presentation at term and spontaneous onset of labor. There had to be no maternal disease, no antenatal complications and no history of hospitalization for more than 24 hours during pregnancy. Exclusion criteria was high-risk pregnancies like significant medical illness, recurrent miscarriages, Bad Obstetrical History (BOH), intrauterine death, congenital anomalies, previous uterine scar, multiple pregnancy, mal presentation, significant antepartum haemorrhage and Rh incompatibility. Separate questionnaire were filled for primigravida and multigravida. Maternal characteristics were similar in primigravida and multigravida. The questionnaire included detailed record of management of labor. Record of Bishop's score on admission and need for cervical ripening with prostaglandins when Bishop's score was 08 (22.8%) primigravidas compared to 2 (5.7%) multigravidas. Emergency C-Section was done in 6 (17.1%) primigravidas compared to 3 (8.5%) multigravidas. Indications for CS were foetal malposition in 3 (8.5%) primigravidas compared to 1 (2.8%) multigravidae. CS done due to non-reassuring CTG were seen in 2 (5.7%) primigravidas compared to 1 (2.8%) multigravida. CS done due to non-progress of labor was seen in 1 (2.8%) primigravidas compared to none among the multigravidas. Primary Postpartum Haemorrhage (PPH) occurred in 5 (14.2%) primigravidas compared to 2 (5.7%) multigravidas. PPH was not associated with any maternal mortality. However, 8 (22.8%) primigravidas required blood transfusion compared to 5 (14.2%) multigravidas. Uterine atony was the leading cause of PPH, seen in 3 (8.5%) primigravidas and 2 (5.7%) multigravidas. Cervical/vaginal tears were observed in equal frequency in both the classes. There was no case of retained placenta in primigravida, but there was 1 (2.8%) multigravidae for whom manual removal of placenta was conducted under general anaesthesia. Puerperial pyrexia for >24 hours was seen in 10 (28.5%) primigravidas as compared to 4 (11.4%) multigravidas. Neonatal record showed 5-minute Apgar score 3.5kg was seen in 4 (11.4%) neonates of primigravidae compared to

8 (22.8%) of multigravidae. There was no fresh stillbirth (FSB) or early neonatal death (NND) case in either group.

DISCUSSION:

The traditional obstetric theory that the first delivery is 'the true test of the pelvis' has taught many generations of doctors. The effect of the first delivery on further pregnancies and delivery decisions by both the patient and the obstetrician is unparalleled.[13] Recent results suggest that there is poor association between radiologic pelvimetry and the clinical results of labour.[14] Only active labor is itself the most beneficial determinant of normal vaginal delivery. The main objective of interventions in dysfunctional labor should be to decrease the C-Section rate without adverse effects on either the mother or baby.[4] The results clearly exhibit that primiparity is associated with intrapartum risks. In this study the CS rate was 17.4% in primigravida, and 11.4% in multigravida which represents good clinical practice. Primparous women had the longest and most gradual labour curve when compared with multiparous women. Primiparas may start the active phase after 5cm of cervical dilation[15] and there is no upper limit for the length of latent phase.[2] A research done in a tertiary hospital in Nigeria shown that primigravida is at an increased risk of dystocia compared with the multipara[16] Amongst females selected for decresed obstetric risk, approximately 25% will develop peripartum complications necessitating transfer to an obstetrician's clinic.[2] A study found that primiparity was less likely to deliver at home and had higher rates of ambulance transport from home to hospital than multiparas planning home-births.[17] Low-risk primiparous women were twice as likely to have a CS and one-and-a half times more likely to have an instrumental birth following induction or augmentation during labour.[18] A study found high frequency of second-stage intervention in the form of instrumental vaginal delivery and C-Section in primigravida which may be because of lack of experience of previous labor in this category of females.[19] Another study found that nulliparas had higher prepartum and intrapartum C-Section rates and their increased prevalence inflates the overall CS rate.[20] In our study the incidence of postpartum haemorrhage was 14.2% in primigravida and 5.7% in multigravida. In this study, PPH was not associated with any maternal mortality. A study had found Nulliparity as a risk factor for primary post partum haemorrhage.[22] Another study had reported a prolonged active, but not passive, second stage of labour to be associated with the risk of severe PPH in nulliparas.[23] Yet another study had reported higher risk (55%) of postpartum hemorrhage for emergency CS and lower for vaginal deliveries (27%) compared with planned CS.[24] Others had found maternal infection and postpartum hemorrhage as related to the duration of the second stage.[25] Women who experience an operative vaginal delivery have a very high probability of achieving a spontaneous vaginal delivery in a subsequent pregnancy as compared to primary CS, although the obstetrician faces a challenge for arresting the second stage of labor. In order to reduce the CS rate for failure to progress, adequate uterine contractions should be achieved during active phase of labor and careful thought should be given while making a decision for primary CS.

CONCLUSION:

Though the sampling technique was a limitation of the study, the results underscore the fact that primigravida is a risk factor for prolonged first and second stages of labor, increased chances of fetal distress during labor and may need intensive monitoring. Delivery of a primigravida outside hospital premises should be discouraged and women should be counseled for supervised antenatal care and delivery.

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