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Indications and rate of cesarean section after induction of labor.

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Abstract:

Introduction: Frequency of cesarean delivery has exceeded 10 to 15 percent which is optional by World Health Organization. Not necessarily required cesarean deliveries might be related to augmented danger of neonatal as well as maternal mortality.

Objectives: To assess indications and rate of cesarean section after induction of labor at Liaquat University Hospital, Jamshoro.

Methodology: This descriptive study was carried at Liaquat University of Medical and Health Sciences (LUMHS), Jamshoro at Department of Obstetrics and Gynecology. All pregnant ladies aged between 18 to 35 years who were undergoing induction either at term or after term were included.

Results: Labor induced by prostaglandin in 41.7%, by Foley's in 23.5% while in 34.8% women, both aforementioned procedures used for augmenting labor. Subsequent to induction of labor, cesarean section was needed in 28.3%. Bishop score was from 0 to 5 in 43% & ≥ 6 in 57%. Cesarean section performed in 29.5% labor induced women. In 40% of labor induced women, the ground behind performing cesarean section was fetal distress while in 34% was extended labor.

Conclusion: C-section needed in 28.3% labor induced ladies. Fetal distress and prolong labor are most common indications for C-section.

Keywords: Cesarean section, Indications, Induction, Labor.

Introduction:

Covid- 19 In a lady's married life, pregnancy is an important stage that is known as salutation occasion for flourishing womanhood; whilst the most essential era of pregnancy is delivery that culminate in newborn's birth. Delivery mode may be either vaginal or by way of cesarean section. Frequency of cesarean delivery is constantly expanding in numerous countries globally and even the rate has exceeded from optional rate of 10-15% which is proposed by World Health Organization. Not necessarily required cesarean deliveries might be related to augmented danger of neonatal as well as

maternal mortality, including risk for un healthy future pregnancies. ¹ Caesarean section is a lifesaving obstetrical practice that lessens the maternal mortality as well as improves mother's reproductive health. Though, the normal vaginal delivery is still the safe method of delivery with minimum cost; C-section is occasionally performed at what time it is not much required and that might produce health challenge for the mother as well as for her newborn. ² Its frequency has been swiftly greater than before in the last ten years among the developing and also the developed countries. Frequencies of cesarean delivery determined by

the WHO have inclined in various countries i.e., China, Brazil, USA, India, Australia and many others. Correspondingly, this frequency has also augmented in Pakistan.³ A variety of medical related issues and also certain non-medical issues, i.e., maternal socio-demographics, has been observed as accountable for the increases in cesarean rate. The rate of performing deliveries via cesarean section has been increased globally, including Pakistan. Therefore, there is a need to investigate the factors behind this increase.^{4,5}

Induction of labor is the stimulation of uterine contractions artificially to endorse the commencement of labor. Several mechanical, pharmacological and also the surgical techniques are there that might be practiced for induction of labor. Membrane sweeping is one of the mechanical methods for inducing labor, whereby an obstetrician inserts one or two fingers into the cervix and using a continuous circular sweeping motion detaches the inferior pole of the membranes from the lower uterine segment. This leads to release of certain hormones that might promote effacement as well as dilatation effectively for augmentation of labor.⁶ There is extensive unexplained dissimilarity in induction of labor rates in various maternity units. This might be attributed to inconsistency in clinical guidelines. The clinical guidelines consistently indicate for labor induction in case of preterm premature rupture of membranes (PPROM), prolonged pregnancy (induction from forty-one to forty-two weeks), decreased fetal movements, oligohydramnios and preeclampsia at term. General indications wherever there was slight harmony on validity and/or timing of induction included fetal macrosomia, gestational diabetes, increased body mass index of mother maternal and twin pregnancy.⁷ Risks of stillbirth or neonatal death increase as gestation continues beyond term (around 40 weeks' gestation). It is unclear whether a policy of labor induction can reduce these risks.⁸ In the year 1985, world health organization anticipated about the optimal rate of cesarean deliveries to be from 10 to 15 percent but the rate of sections has been observed to be mounting at global level in recent years. This increase in cesarean section rates is allied with increased transfusions of blood, rupture of uterus scar risk of placenta previa, placenta accreta as well as the chances of hysterectomies.⁹

In order to better understand the reasons behind prevailing rates of cesarean section in Pakistan, this study

was intended to assess the indications and also the rate of cesarean section subsequent to inducing of labor in Gynae Obs units at Liaquat University Hospital Jamshoro.

Methodology:

This descriptive study was performed in Department of Gynecology & Obstetrics, Liaquat University of Medical & Health Sciences, Jamshoro/Hyderabad from August 2017 To February 2018 subsequent to the acquiescence from institutional research ethical committee. Sampling technique was non probability purposive. Patients satisfying the inclusion criteria were enrolled through OPD, labor room and emergency unit of Liaquat University Hospital, Jamshoro. Inclusion criteria encompassed the pregnant ladies of age group from 18 to 35 years who were undergoing induction either at term or after term. Pregnant ladies having < 37 weeks pregnancy (preterm), with past history of previous cesarean section, twin pregnancy and spontaneous labor that were needing augmentation were excluded from present research study. After taking obstetric history and obstetric examination, patients were subject to important laboratory investigations like blood grouping and cross matching, anti-hepatitis C virus antibodies, hepatitis B surface antigen, complete blood picture, urine detailed report, blood glucose levels, ultrasound and cardiotocography (CTG). The variables of this study include age of patient, gestational age, parity, bishop score & the indications of cesarean section. Inducing labor refers to stimulation of uterus contractions artificially as therapeutic intervention earlier than the commencement of impulsive labor when benefits of normal vaginal delivery prevail over the life-threatening risks of abiding the pregnancy.¹⁰

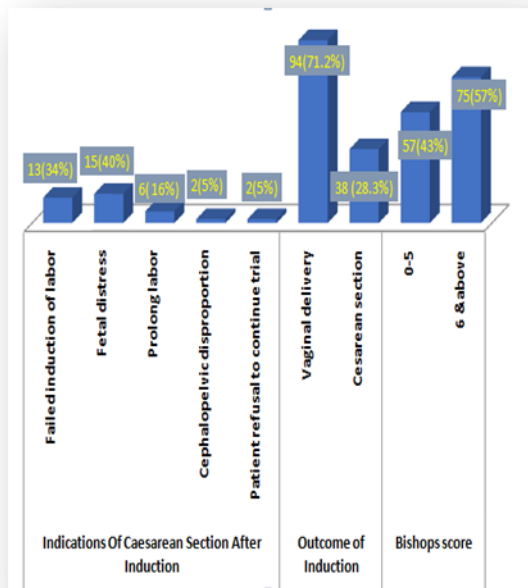
Data analyzed using IBM SPSS, version 22.0. Mean & standard deviation determined for maternal age, simulation to delivery interval, gestational age, parity etc. Frequencies figured out for qualitative data variables i.e., rate of cesarean section and its indications and also the medical as well as obstetric grounds for induction of labor.

Results:

Total 132 pregnant ladies (n=132) were assessed to find out the rate of cesarean sections with its indications after induction of labor. Mean \pm SD of maternal age, gravidity, parity and gestational age at the time of induction and induction to delivery duration were 28.5 \pm 3.2 years, 3.5 \pm 1.0, 2.2 \pm 1.1 and 39.2 \pm 1.5 weeks and 8.5

±1.4 hours respectively. Labor induced by prostaglandin in 41.7% patients while by foley’s in 23.5%; while in 34.8% women, both aforementioned procedures used for augmenting labor. Frequency (%) of medical indications for induction of labor, i.e., hypertension, diabetes, liver disorders, and epilepsy was 8.33%, 12.12%, 4.54% and 0% respectively. To the extent that indications for induction on obstetrical grounds are related, premature rupture of membranes (PROM) was most common (40.9%) followed by extended labor (23.5%) as shown in table no 1.

Figure No. 1: Bishop score, rate of cesarean sections and its Indications after inducing labor



Discussion:

In the absence sufficient clinical evidence that increased rate of C-section reduces maternal and neonatal mortality, the prevalence of C-section has been increased tremendously throughout the world.¹¹

In present study, rate of cesarean section was 28.3% after induction of labor and indication identified for cesarean section after induction of labor was fetal distress (40%), failed induction of labor (34%) and prolong labor in 16% of cases. Among the obstetric indications, PROM and prolong pregnancy were common while among the medical indications for induction of labor, most frequent was diabetes.

Table No. 1: Descriptive statistics of pregnant women underwent induction of labor (n=132)

Variable	Mean ± SD	n %
Booking status		
Booked	--	76(57.6%)
Un booked	--	56 (42.2%)
Maternal Age (in years)	28.5±3.2	--
Gravidity	3.5±1	--
Parity	2.2±1.1	--
Gestational age (in weeks)	39.2±1.5	--
Induction To Delivery Interval (in hours)	8.5±1.4	--
Medical grounds for induction		
Hypertension	--	11(8.33%)
Diabetes	--	16 (12.12%)
Hepatic dysfunctions	--	6(4.54%)
Epilepsy	--	0(0%)
Obstetrical Grounds for induction		
PROM	--	54(40.9%)
Prolong Pregnancy	--	31(23.5%)
Preeclampsia	--	14(10.6%)
Modes of induction		
Foley’s catheter	--	31(23.5%)
Prostaglandins E2	--	55(41.7%)
Combined	--	46(34.9%)

According to Khanum S, et al.¹² the tendency of cesarean section conceded out is increasing globally. One of the most frequent indications of cesarean is fetal distress which is based on abnormal fetal heart rate pattern, CTG recording as well as meconium-stained liquor. Findings identical to current study, Mahajan C, Faruqi M.¹³ also revealed fetal distress as most common cause of cesarean section and in their study next common was the cephalopelvic disproportion. The rate of cesarean section in Bhutan is 18.7%, common indications include past cesarean delivery history, fetal distress, extended labor and failed induction.¹⁴ Comparable to this study, Gilani S, et al.¹⁵ revealed the rate of cesarean deliveries in their research study conducted at Islamabad as 33.3%. Pre-term PROM is the solitary most widespread certain factor linked with preterm

delivery with up to 40 percent of these cases culminate in before term delivery as well as consequent morbidity and the mortality even.¹⁶ Fetal complications allied with prolong pregnancy are connected to bigger fetal size as well as enhanced chances of placental abnormalities. When fetal size is increased then it may complicate the delivery by the prolongation of labor. In the post-term deliveries, chances of macrosomia increase twice with augmented chances of birth trauma as well as shoulder dystocia. The post term babies with more than 40 weeks of gestation are more prone to decreased Apgar scores.¹⁷

According to Biesty LM, et al.¹⁸ pregnant ladies with either pre-existing type 1 or type 2 diabetes mellitus bear amplified rates of undesirable maternal situation and also worsened neonatal outcome. Up to date clinical guidelines are supportive for elective birth, either near term or at term, because of the likelihood of perinatal death.

Conclusion:

It may be concluded that rate C-section is increasing. It probably reflects lack of acceptance for minimum risk both on the part of pregnant lady and health care provider

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