ORIGINAL ARTICLE

Factors associated with failed induction

Nargis Iqbal, Amna Rafique, Faiza Nisar, Seema Ghani, Nazia Nawaz, Khluood

Abstract:

Objectives: To determine the factors responsible for failed induction of labour.

Study design: Retrospective cross sectional Study

Study Setting: Obstetric and Gyne Department of Al-Aleem Medical College, Gulab Devi Educational Complex.

Duration of study: One year from 1st October 2019 to 30th October 2020.

Material and Methods: During this period total 690 births were carried out. A total of 301 pregnant women fulfilling inclusion criteria were included in this study who were induced. Data like age, parity, BMI, gestational age, ruptured membranes, amniotic fluid volume on US, Bishop's score and fetal weight were recorded on pre designed proforma.

Results: A total of 301 women met the inclusion criteria, failed induction occurred in 123 women (40.86%). The mean age of the women was 28.3 ±1.9 years. Factors responsible for failed induction of labour in the study were observed as women > 30 years 64.22%, primigravida 69.91%, BMI more than 24 k.g/m2 78.86%, gestational age > 41 weeks 40.65%, ruptured membranes > 12 hours 66.66%, Bishop score < 5 cm 69.91%, AFI on USG 56.09% and fetal weight > 3 kg 60.97%. The P-value was extremely statistically significant (< 0.0001) was observed in two factors ruptured membranes more than 12 hours and poor Bishop's score.

Conclusions: In our study induction of labour failed in 40.86%. Poor Bishop's score < 5cm and ruptured membranes more than 12 hours at admission were observed extremely statistically significant factors.

Gulab Devi Hospital, Lahore.
N Iqbal
A Rafique
F Nasir
N Nawaz
Khluood

Hamdard College of Medicine & Dentistry/ Hadmard University Hosptial, Karachi.
S Ghani

Correspondence:
Dr. Nargis Iqbal
Address: House No. 390, Lane No. 3, Sector H, Phase 5, DHA, Lahore
Cell No:+92 300-8413004
email: dr.nargisiqbal@ hotmail.com

Introduction:

Induction of labour (IOL) is one of the commonest performed obstetrical procedure. It is mainly indicated when continuing of pregnancy is harmful both for mother and fetus. Induction of labour is a proceeding in which labour is artificially initiated resulting painful uterine contraction, progressive dilatation and effacement of cervix, descend of head resulting vaginal delivery. There are two times increased risk of cesarean section in women with induced labour as compared to spontaneous onset of labour.[1,2] Rate of Induction of labour of labour was low 10% to 20%[1] in the past but now a days it is as high as 40% because of increase medical or obstetrical indications.[3] In District hospitals of Pakistan 70%-80% of cesarean sections done in emergency are because of failed induction.[4] The caesarean section rate was dependent on individual Obstetricians decision.[5] Current studies reported that IOL is executed in 9-33% of all pregnancies each year and success mainly depends on Parity, and Bishop score.[6,7] It has been reported that failed induction followed by cesarean delivery has increased risk of both maternal and neonatal morbidity and mortality.[8,9] In order to avoid the fear of failure of IOL and then emergency cesarean, women often demand for elective delivery.[10] There are certain factor responsible for failure of IOL like maternal age, height,

body mass index, parity, duration of pregnancy, bishop score, fetal weight and amount of amniotic fluid index by USG.[11-14] Peregrine et al., focus on four main factors responsible failed IOL are body mass index, parity, height and length of cervix.[15] The purpose of this study was to find out factors responsible for failed induction so that strategies could be planned and implement in order to reduce failure of induction.

Material and Methods:

It was a retrospective cross sectional study, conducted at department of Obstetric and Gynecology of Al-Aleem Medical College attached with Gulab Devi Educational Complex Lahore, over a period of one year from October 2019 to October 2020 after approval from Institutional Ethical Committee. During this period total 690 births were carried out. A total of 301 pregnant women fulfilling inclusion criteria were included in this study who were induced. Data like age, parity, BMI, gestational age, ruptured membranes, amniotic fluid volume on US, Bishop's score and fetal weight were recorded on pre designed proforma. All the data was entered, rechecked and then analyzed with the help of SPSS software version 16. Descriptive statistics was used to frequency and percentage of all quantitative variables.

Results:

A total of 690 women delivered during study period, 301 women (43.62%) fulfilling the inclusion were included in the study, failed induction occurred in 123 women (40.86%). The mean age of the women was 28.3 ±1.9 years. Table-l highlight the frequency of risk factors associated with failed induction of labour. Table –ll enlighted the P value and significance of various factors associated with failed IOL. Most common cause of failed induction was failure in progress of labour after 24 hours.

Discussion:

The induction of labour is carried out commonly in all obstetrical set up throughout the world. In well developed countries its incidence is 20% however it varies from country to country but in under-developed countries incidence of IOL is high 20% to 40%.[3,4] In our study 43% of the women underwent IOL because of their different indications this is similar with other studies[4,16] however failed IOL in this study was 40.86% showing similar result like other researchers.[17,18] Increasing age play an important role in failure of IOL, it could be because of thickening of ligament in addition of other contributory factors, In this study it has been observed that failure of IOL was more prevalent (64.22%) in women having age above 30 years and this is consistent with other studies.[19,20] Failed induction of labour was 4.6% times more common in nulliparous women as compare to multiparous, in our study failed IOL was 69.91% this is tallying with other studies.[14,19,20] Women with high BMI more than 24 kg/m^2 are poor patients for successful induction, in this study failed induction was observed 78.86% and women end up to caesarean delivery which is consistent with other studies.[21,22] Gestational age is a significant determinant in success or failure of induction, timely onset of labour and delivery play an important role both of maternal & neonatal outcomes. In this study failed induction was 1.2 times common in women having gestational age more than 40 weeks, this is consistent with other studies.[9,16] Premature rupture of membranes is one of the commonest indication of induction of labour and mostly it is associated with prematurity, fetal growth retardation, reduced fetal movement. Timing of ruptured is an important factor for failed induction because of continuous draining of liquor lead to hugging to fetus, increased chances of infection, compromised fetus and caesarean delivery. In this study failed induction was 66.66% in women who had history of ruptured membranes more than 12 hours, this was almost doubled than less than 12 hours, this finding is similar with studies.[23,24] Poor Bishop score is a significant factor in failed induction especially dilatation of cervix. In our study Bishop score less than 5 cm dilation of cervix was found in 69.91% of women and all of them end up caesarean section this is consistent with other researchers.[25,26] Amniotic fluid index on USG is also considered a contributory factor for failed

induction and adverse perinatal outcome, in our study 56.09% women had low AFI and end up caesarean delivery with compromised neonate required nursery admission, this is similar with other studies.[27,28] Increased birth weights has a good relation with failure of induction and increased rate of caesarean section. In this study 60.97% of the neonates had birth weight of more than 3 kg and delivered by caesarean section, this is similar with other studies.[29,30] This study highlight the degree of association of various factors regarding failed IOL by calculating P-value of each factor, P-value < than 0.05 is said to be statistically significant, this is consistent with other studies.[17,29,31] There is no maternal or neonatal mortality in this study.

Conclusion:

Induction of labour is an important tool for safe and sound vaginal delivery but in our study it failed in 40.86%. Poor Bishop score < 5cm and ruptured membranes more than 12 hours at are extremely statistically significant factors in failure of induction.

Limitations:As this was a retrospective single center newly developed obstetric and gynecology department of Gulab Devi Hospital study therefore the results could not be generalized.

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Role and contribution of authors:

Nargis Iqbal, collected the data, references and did the initial writeup

Amna Rafique, collected the data and helpd in introduction writing.

Faiza Nisar, collected the data, references and helped in discussion writing

Seema Ghani, collected the references and helped in discussion writing.

Nazia Nawaz, collected the data, references and helped in result writing.

Khluood, collected the data, referneces and helped in interpretation of data.

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