ORIGINAL ARTICLE

Examine the Fetomaternal Outcomes of Labour Induction in Pregnant Women with Poor Bishop Score

SAMRA ISMAT[1], AMNA FAREED[2], AFIFA WAHEED[3], *HUMAIRA ZULFIQAR SAIFEE[4]*
[1]Assitant Professor of Obstetrics & Gynecology, M. Islam Teaching Hospital Gujranwala
[2]Associate Professor of Obstetrics & Gynecology, Muhammad College of Medicine (Former Al-Razi Medical College), Muhammad Teaching Hospital, Peshawar
[3]Associate Professor of Obstetrics & Gynecology, Islam Medical and Dental College, Islam Central Hospital, Sialkot
[4]Senior Registrar, Department of Gynaecology and Obstetrics, Services Institute of Medical Sciences, Lahore
Correspondence to: Dr. Samra Ismat Email: samra_umer@hotmail.com, Cell 0300-4414163

ABSTRACT

Objective: To determine the fetal and maternal outcomes in pregnant women with poor bishop score received labour induction.

Study Design: Prospective/Observational study

Place & Duration of Study: Department of Obstetrics & Gynaecology, M. Islam Teaching Hospital, Gujranwala from 1st October 2019 to 31st March 2020.

Patients and Methods: One hundred pregnant women having gestational age above 36 weeks with bishop score <5 were included in this study. Patient's detailed demographic including age, BMI, and parity were recorded after written consent. All the patients were received labour induction. Indications of labour induction, time duration from induction to delivery, mode of delivery after induction of labour and fetal outcomes were examined.

Results: There were 10 (10%) patients with ages <20 years, 30 (30%) with ages 20 to 25 years, 35 (35%) were ages 26 to 30 years and 25 (25%) with ages above 30 years. Mean body mass index was 24.35±3.22 and mean gestational age was 38.3±2.12 weeks. Fifty four (54%) patients received misoprostol labour induction and 46 (46%) patients received oxytocin. Post-term pregnancy was the most common indication of labour induction 73 (73%) followed by gestational hypertension 10%. Seventy two (72%) patients had normal vaginal delivery while 28% had C-section. Eight (8%) cases had Apgar score <7 at 5 minutes, meconium stained liquor found in 6 (6%) cases and 10 (10%) neonates needs admission to NICU. No neonatal mortality was found. According to the maternal complications 6 (6%) patients had abnormal uterine action, 3 (3%) patients had postpartum hemorrhage and blood transfusion needed in 2 (2%) patients.

Conclusion: Induction of labour with proper care was safe and effective with fewer fetal and maternal adverse outcomes

Key Words: Fetomaternal, Outcome, Labour induction, Bishop score

INTRODUCTION

Rates of induction of labor have increased dramatically in the United Sates to nearly 40% of pregnancies according to some studies.[1-3] Induction of labor increases the risk of cesarean delivery. Nulliparity, patient's race, having an unripe cervix at the time of the induction, greater maternal age, body mass index, fetal weight, and length of induction are all associated with failed inductions that lead to a cesarean birth.[4-6] Nearly 50% of inductions occur in women with an unfavorable cervix.[7] An unripe cervix, typically characterized by a Bishop score of ≤6, has been associated with an increase in the cesarean delivery rate by 2- to 3-fold.[8]

Several cervical ripening techniques are thought to decrease the risk of a cesarean delivery. The most commonly used drugs for this purpose are prostaglandins.[9] Misoprostol is a synthetic analogue of prostaglandin E1 with a plasma half-life of <1 hour when given There are multiple studies that have evaluated different doses and different routes of delivery.[10-12] The dose most commonly recommended is 25 or 50 µg of misoprostol vaginally. However, there are few studies that address the repeat dosing and frequency of dosing of misoprostol. Although 3 hours might be the most appropriate interval based on the half-life, it is not known how well serum level correlates with clinical effect. Also, it is unknown whether repeat doses result in a cumulative effect or whether there is a latency period between the application of the drug and biochemical changes in the cervix. One study suggested a single dose is most effective if it is given 12 hours before oxytocin is initiated.[13] Repeat dosing may extend the latent phase of labor. A longer latent phase of labor is associated with an increased rate of cesarean delivery, chorioamnionitis, endometritis, and uterine atony.[14] The early addition of oxytocin may potentiate the action of prostaglandin and decrease the latency period. Prostaglandins have a close functional interaction with oxytocin. Oxytocin leads to the release of arachidonic acid and myometrial transcription of the cyclooxygenase-2 gene, which insures continuous prostaglandin production.[15] In addition, pretreatment with prostaglandins has been shown to increase the myometrial response to oxytocin significantly.[16]

The present study was conducted to examine the fetomaternal outcomes in pregnant women with poor bishop score.

MATERIALS AND METHODS

This study was conducted at Department of Obstetrics & Gynaecology, M. Islam Teaching Hospital, Gujranwala from 1st October 2019 to 31st March 2020. A total of 100

pregnant women having gestational age above 36 weeks with bishop score <5 were included in this study. Patient's detailed demographic including age, BMI and parity were recorded after written consent. Patients with multiple pregnancies, prelabor rupture of membrane, diabetic patients, patients with cardiac disease, abnormal cephalic presentation and patients with antepartum hemorrhage were excluded from this study. Patients who received misoprostol, two doses 50ug of misoprostol orally at 6 hourly and patients with oxytocin were receive 5 units of oxytocin in 500ml, RL at start 10 drops up to 60 drops till effective contraction occurs. Indications of labour induction, time duration from induction to delivery, mode of delivery after induction of labour and fetal outcomes were examined. All the data was analyzed by SPSS-24.

RESULTS

There were 10 (10%) patients with ages <20 years, 30 (30%) with ages 20 to 25 years, 35 (35%) were ages 26 to 30 years and 25 (25%) with ages above 30 years. Mean body mass index was 24.5±3.2 and mean gestational age was 38.3±2.12 weeks. 54 (54%) patients received misoprostol labour induction and 46 (46%) patients received oxytocin (Table 1). Post-term pregnancy was the most common indication of labour induction 73 (73%) followed by gestational hypertension 10%, oligohydramnios in 5 (5%) patients and foetal indication was found in 2 (2%) patients (Table 2)

Table 1: Demographic information of the patients

Variable	No.	%
Age (Years)		
<20	10	10.0
20 – 25	30	30.0
26 – 30	35	35.0
>30	25	25.0
Mode of Induction		
Misoprostol	54	54.0
Oxytocin	46	46.0
Gestational age (weeks)	38.3±2.12	
BMI	24.5±3.2	

Table 2: Indications of induction of labour

Indication	No.	%
Post-term pregnancy	73	73.0
Gestational hypertension	10	10.0
Oligohydramnios	7	7.0
Foetal indication	5	5.0
Rh negative Mother	5	5.0

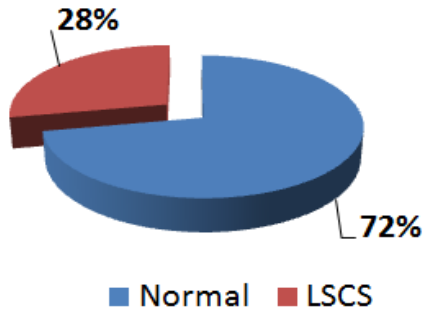

Fig. 1: Mode of delivery after induction of labour

72% patients had normal vaginal delivery while 28% had C-section (Fig. 1). According to the fetal outcomes, 8 (8%) cases had Apgar score <7 at 5 minutes, meconium stained liquor found in 6 (6%) cases and 10 (10%) neonates needs admission to NICU. No neonatal mortality was found (Table 3). According to the maternal complications 6 (6%) patients had abnormal uterine action, 3 (3%) patients had postpartum hemorrhage and blood transfusion needed in 2 (2%) patients (Table 4).

Table 3: Fetal outcomes after induction of labour

Fetal outcome	No.	%
Apgar Score <7 at 5min	8	8.0
Meconium Stained Liquor	6	6.0
NICU Admission	10	10.0
Neonatal Mortality	-	-

Table 4: Maternal outcomes after induction of labour

Maternal outcome	No.	%
Abnormal uterine action	6	6.0
Postpartum hemorrhage	3	3.0
Need of Blood Transfusion	2	2.0
No Complication	89	89.0

DISCUSSION

There were 10 (10%) patients with ages <20 years, 30 (30%) with ages 20 to 25 years, 35 (35%) were ages 26 to 30 years and 25 (25%) with ages above 30 years. Mean body mass index was 24.35±3.22 and mean gestational age was 38.3±2.12 weeks. Many of other studies shows similarity to our results regarding age, in these studies majority of patients were ages 20 to 30 years and majority of patients had post dated pregnancies with poor bishop score.[17,18]

In present study 54 (54%) patients received misoprostol labour induction and 46 (46%) patients received oxytocin. A study conducted by Sultana et al[19] used oxytocin followed by Arm and ARM followed by oxytocin for induction of labour 34% and 20%.

In our study we found post-term pregnancy was the most common indication of labour induction 73 (73%) followed by gestational hypertension 10%, oligohydramnios in 5 (5%) patients and foetal indication was found in 2 (2%) patients. These results showed similarity to some other studies in which the most common indication of labour induction was post-term pregnancy followed by gestational hypertension 70% and 20%.[20,21]

In present study 72% patients had normal vaginal delivery while 28% had C-section. These results were similar to many of previous studies in which majority of patients delivered normally 65 to 80% and rate of LSCS was low as compared to vaginal delivery after induction of labour.[18,22]

In this study, according to the fetal outcomes, 8 (8%) cases had Apgar score <7 at 5 minutes, meconium stained liquor found in 6 (6%) cases and 10 (10%) neonates needs admission to NICU. No neonatal mortality was found and according to the maternal complications 6 (6%) patients had abnormal uterine action, 3 (3%) patients had postpartum hemorrhage and blood transfusion needed in 2 (2%) patients. These results were comparable to many of other studies.[23,24]

CONCLUSION

Post-dated pregnancy is the main cause of induction of labor and it affected mother and baby health. We concluded that induction of labour with proper care was safe and effective with fewer rate of maternal complications. We found only 24% neonates had adverse outcomes and 76% with favorable outcomes. So, labour induction with proper management is reliable effective modality.

REFERENCES

1. Laughon SK, Zhang J, Grewal J, Sundaram R, Beaver J, Reddy UM. Induction of labor in a contemporary obstetric cohort. Am J ObstetGynecol 2012; 206: 486.e1–9.
2. Vrouenraets FP, Roumen FJ, Dehing CJ, van den Akker ES, Aarts MJ, ScheveEJ. Bishop score and risk of cesarean delivery after induction of labor in nulliparous women. ObstetGynecol 2005; 105: 690–7.
3. Yeast JD, Jones A,Poskin M. Induction of labor and the relationship to cesarean delivery: a review of 7001 consecutive inductions. Am J ObstetGynecol 1999; 180: 628–33.
4. Gerli S, Favilli A, Giordano C, Bini V, Di Renzo GC. Single indications of induction of labor with prostaglandins and risk of cesarean delivery: a retrospective cohort study. J ObstetGynaecol Res 2013; 39: 926–31.
5. Pevzner L, RaybunWF, Rumney P, Wing DA. Factors predicting successful labor induction with dinoprostone and misoprostol vaginal inserts. ObstetGynecol 2009; 114: 261–7.
6. Michelson KA, Carr DB, Easterling TR. The impact of duration of labor induction on cesarean rate. Am J ObstetGynecol 2008; 199: 299.e1–4.
7. American College of Obstetricians and Gynecologists. ACOG Practice Bulletin no. 107. Induction of labor. ObstetGynecol 2009; 114: 386–97.
8. Battista L, Chung JH, Lagrew DC, Wing DA. Complications of labor induction among multiparous women in a community-based hospital system. Am J ObstetGynecol 2007; 197: 241.e1–7.
9. Abdel-Aleem H. Misoprostol for cervical ripening and induction of labour: RHL commentary (last revised: 1 May 2011). The WHO Reproductive Health Library; Geneva: World Health Organization, 2017.
10. Wing DA, Sheibani L. Pharmacotherapy options for labor induction. Expert OpinPharmacother 2015; 16: 1657–68.
11. Wing DA, Paul RH. A comparison of differing dosing regimens of vaginally administered misoprostol for preinduction cervical ripening and labor induction. Am J ObstetGynecol 1996; 175: 158–64.
12. Jamali HR, Nabavi M. Open access and sources of full-text articles in Google Scholar in different subject fields. Scientometrics. 2018.
13. Sanchez-Ramos L, Kaunitz AM, and Delke I. Labor induction with 25 microg versus 50 microg intravaginal misoprostol: a systematic review. ObstetGynecol 2002; 99: 145–51.
14. Facchinetti F, Fontanesi F, Del Giovane C. Pre-induction of labour: comparing dinoprostone vaginal insert to repeated prostaglandin administration: a systematic review and meta-analysis. J Matern Fetal Neonatal Med 2012; 25: 1965–9.
15. Meyer M, Pflum J, Howard D. Outpatient misoprostol compared with dinoprostone gel for preinduction cervical ripening: a randomized controlled trial. ObstetGynecol 2005; 105: 466–72.
16. Rouse DJ, Weiner SJ, Bloom SL. et al. Failed labor induction: toward an objective diagnosis. ObstetGynecol 2011; 117: 267–72.
17. Baud D, Rouiller S, Hohlfeld P, TolsaJF, Vial F. Adverse obstetrical and neonatal outcomes in elective and medically indicated inductions of labor at term. J Matern Fetal Neonatal Med 2013;26(16):1595-601.
18. Sarvanan N, Jha N,Dhodapkar SB, Kandasamy R. Fetomaternal outcome of medical induction of labour at term gestation. J Clin Diag Res 2017; 11(11): QC21-4.
19. Sultana R, Begum K, Sultana N, Sultana N, Munmun SA, Araf R, Akter S. Induction of labour in prolonged pregnancy and its outcome. Med Today 2014; 26(2): 100-3.
20. Soni K, Subudhi K, Misra B, Gouda BC, Chaudhary S. Maternal and perinatal outcome in induction of labour. Sch J App Med Sci 2017; 5(1D): 273-81.
21. Vogel JP, Souza JP, Gülmezoglu AM. Patterns and outcomes of induction of labour in Africa and Asia: a secondary analysis of the WHO Global Survey on Maternal and Neonatal Health. PloS One 2013; 8(6):e65612.
22. Tripathi M, Adhikari A, Neupane B. Misoprostol versus oxytocin for induction of labour at term and post term pregnancy of primigravida. JUCMC 2018; 6(2): 56-9.
23. Levine LD, Downes KL, Elovitz MA, Sammel MD, Srinivas SK, Parry S. Mechanical and pharmacologic methods of labor induction: a randomized controlled trial. ObstetGynecol 2016; 128: 1357–64.
24. Acharya T, Devkota R, Bhattarai B, Acharya R. Outcome of misoprostol and oxytocin in induction of labour. SAGE Open Med 2017; 5: 2050312117700809.