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Original Research Article

A new indication for elective induction of labor COVID-19 pandemic effect

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ABSTRACT

Background: Induction of labour is performed in certain circumstances which involve greater risks of waiting for the onset of spontaneous labour than the risks due to shortening the duration of pregnancy by induction. The objective of this study was to evaluate the maternal and fetal outcome in patients undergoing elective induction during COVID-19 pandemic.

Methods: This prospective observational study was conducted on 60 ANC patients with singleton pregnancy and POG >39 weeks coming to OPD with negative COVID-19 RT-PCR report. To avoid the burden of repeat testing after one week and risk of exposure to COVID-19 virus from community, patients were induced. All the data was recorded and analyzed.

Results: Most of the patients were in age group of 20-25 years (50%) and only 6.7% of the patients were older than 30 years. 32 (53.3%) patients were multiparous and 50% of the patients were having Bishop score between 2-5 and only 8.3% had bishop score of more than 5. 47 patients (78.3%) underwent normal vagina delivery whereas 12 patients (20%) underwent LSCS. Failure of Induction was the indication for LSCS in 5 patients (41.7%).

Conclusions: Elective induction was found to be better option in COVID-19 negative patients. All pregnant women should be monitored for development of symptoms and signs of COVID-19 particularly if they have had close contact with a confirmed case. Pregnancy and childbirth generally do not increase the risk for acquiring SARS-CoV-2 infection but may worsen the clinical course of COVID-19 compared with nonpregnant individuals of the same age.

Keywords: Induction of labor, COVID-19, LSCS

INTRODUCTION

Induction is defined as an intervention intended to artificially initiate uterine contractions resulting in the progressive effacement and dilatation of the cervix resulting in the vaginal delivery of the baby. Pandemic caused by COVID-19 has led to a state of global health crisis. Healthcare services disruption and lock downs may also affect the management of pregnant female and their infant.^{1,2} Pregnant women with COVID-19 may be at increased risk for more severe illness compared with

nonpregnant peers. The incubation period of COVID-19 infection can vary between 2 and 14 days. Induction of labour is performed in certain circumstances which involve greater risks of waiting for the onset of spontaneous labour than the risks due to shortening the duration of pregnancy by induction. Decisions about mode of delivery and outcomes in patients should be taken after carefully weighing of the benefits of interventions for the mother and fetus with potential risks.

Objectives

Objectives of current study were to evaluate the maternal and fetal outcome in patients undergoing elective induction during COVID-19 pandemic.

METHODS

This prospective observational study was conducted on 60 patients at OBGYN department of SGT medical college for a period of 6 months from April to September 2020. ANC patients with singleton pregnancy with POG >39 weeks coming to OPD with negative COVID-19 RT-PCR report were included in this study and induced. The passage and passenger were assessed and modified BISHOP calculated. Patients were induced with dinoprostone gel 3 doses at 6 hours apart. The induced patients were monitored in labor room where maternal and fetal monitoring was done with non stress test (NST) and intermittent auscultation was provided. Maternal and fetal outcomes were observed. Patients presenting with post dated pregnancy POG >41 weeks, PROM, IUGR, RH negative pregnancy, intrahepatic cholestasis of pregnancy, hypertensive disorders of pregnancy and gestational diabetes mellitus were excluded. To avoid the burden of repeat testing after one week and risk of exposure to COVID-19 virus from community, patients were induced. Prior to induction written consent was taken. All the data was recorded in Microsoft Excel sheet and analysed using SPSS 22 software.

RESULTS

Most of the patients were in age group of 20-25 years (50%) and only 6.7% of the patients were older than 30 years (Table 1). 32 (53.3%) patients were multiparous and 50% of the patients were having Bishop score between 2-5 and only 8.3% had bishop score of more than 5. In our study, 47 patients (78.3%) underwent normal vagina delivery whereas 12 patients (20%) underwent LSCS (Table 2).

Table 1: Demographic profile of patients (n=70).

Age (years)	N	(%)
20-25	30	50
25-30	26	43.3
>30	4	6.7
Gravida		
Primi	28	46.7
Multiparous	32	53.3

Failure of Induction was the indication for LSCS in 5 patients (41.7%). Fetal distress was the indication in 4 patients (Table 3). Regarding neonatal outcomes, 26 (43.3%) were male and 34 (56.7%) were females. 75% of the neonates were having birth weight between 2.5-3.5 kgs. 86.7% of neonates had APGAE score between 7-10 whereas 3.3% had APGAR score below 3.

Table 2: Mode of delivery of patients in this study.

Mode of delivery	N	%
Normal vaginal delivery	47	78.3
Emergency LSCS	12	20
Instrumentation	1	1.7

Table 3: Indication for LSCS (n=12).

Indication	N	%
Failure of induction	5	41.7
Fetal distress	4	33.3
Meconium stained liquor	2	16.7
Arrest of descent	1	8.3

DISCUSSION

The incidence of induction of labor (IOL) is the artificial initiation of labour before its spontaneous onset to deliver the fetus and it is increasingly performed nowadays. Incidence of IOL is about 20%.³ Pregnancy doesn't make it more likely to contract COVID-19 infection than the general population but pregnancy affects the immunity, reduces functional residual volumes, elevates diaphragm and alters response to viral infections which can occasionally result in more severe symptoms. In case of the fetus and the neonates, the immature innate and adaptive immune systems make them highly susceptible to infections.⁴

The main sources of infection are the patients infected by the novel coronavirus. Asymptomatic patients infected with COVID-19 may also be a source. Transmission occurs mostly via respiratory droplets and close contact. Aerosol transmission in a relatively closed environment can also lead to infection. The induction of labor is intended for achieving a successful vaginal delivery that is as natural as possible. Depending on a patient's obstetrical and medical history, the main indications for IOL includes post-term gestation, preterm rupture of membranes (PROM) at term, PROM at near term with pulmonary maturity, intrauterine growth restriction, preeclampsia \geq 37 week and significant maternal disease not responding to treatment. The likelihood of success and appropriate method of induction is based on assessment of bishop score. Elective induction of labor is fast becoming a frequent indication criterion especially based on the latest scientific data.⁵

As per the survey published in 2021, 23% sites reported change in cervical ripening methods and 24% noted changes to women's response to recommendations for IOL. These changes were mainly due to efforts to minimise hospital attendance.⁶ COVID-19 in pregnant females has shown no significant association between infection and an increased risk of miscarriage.⁷ Some of the contraindications for induction of labor include placenta previa, umbilical cord prolapse, prior classical or inverted T uterine incision, significant prior uterine

surgery, pelvic structural deformities and transverse fetal presentation. Complications that can occur during the induction of labor. Uterine tachysystole (>5 contractions/10 mins) may lead to fetal bradycardia.⁸ Cesarean section can be performed in cases of failed induction of labor or a non-reassuring fetal heart rate tracing.

In pregnant patients with severe COVID-19 infection, the mode of delivery is mostly caesarean section.⁹⁻¹¹ Transferring patients from one place to another within or from hospital carries risk of exposure to both patients and health care workers. Vaginal delivery via induction of labour should be favoured to avoid unnecessary surgical complications.¹² Also there is no viral transmission reported from mother to fetus in neonates delivered vaginally in COVID-19 patients.^{13,14} There are some limitations to our study. The number of patients is less and therefore the result cannot be extrapolated to the whole target population.

CONCLUSION

Elective induction was found to be better option in COVID-19 negative patients. All pregnant women should be monitored for development of symptoms and signs of COVID-19 particularly if they have had close contact with a confirmed case. Pregnancy and childbirth generally do not increase the risk for acquiring SARS-CoV-2 infection but may worsen the clinical course of COVID-19 compared with nonpregnant individuals of the same age.

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