ORIGINAL ARTICLE

THE LABOR-INDUCED PREGNANCY CASES IN DR SOETOMO GENERAL HOSPITAL: A DESCRIPTIVE STUDY

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ABSTRACT

Background: Labor induction is a procedure to stimulate uterine contractions during pregnancy before labor begins on its own to achieve a vaginal birth with medical or mechanical intervention to start the labor. This procedure aims to stimulate more extensive contraction in the uterus. The labor induction can reduce the caesarean rate. Prostaglandin E2 (PGE2) and misoprostol are the commonest medicine used to ripen the cervix in the Dr. Soetomo Hospital.

Objective: Our study aim to evaluate the success rate of induction of labor patient

Methods: This study was a descriptive study using the medical record in 2018 in the Dr. Soetomo General Hospital, Surabaya. A total of 183 patient's medical record data who underwent induced labor were used in this study. Inclusion criteria were the women with indication to deliver and have no cephalo-pelvic disproportion. Women with contraindication labor induction were excluded. Data was described using table and narrative approach.

Results: The most range of gestational age was 21-36 weeks (53.01%) followed by 37-42 weeks (42.07%). There were 68 patients (37,1%) primigravida and 115 patients (62,8%) were multipara. The major induced labor was conducted with misoprostol (78.6%), and the most pelvic scores were 2 (58.46%) before underwent induced labor. Vertex delivery was the preferred mode of delivery after the induction of labor with 89 patients (48,62%). The labor induction failure followed with the caesarean operation were 27 patients (14,7%) and one patient (0,54%) with hysterotomy, most of them caused by failure to progress and fetal distress. There were 78 babies (43%) with the weight over 2500 g, 28 babies (31%) were over 2000 g, and the other was below 2000 g. A total of 84.71% with labor induction can be delivered vaginally, and It is a good number to reduce the rate of caesarean operations.

Conclusion: This study concludes that misoprostol uses for the induction of labor than the other. Delivery abdominal is less percentage than the additional delivery finds that as a failure of induction of labor. The Labor induction success to delivered vaginally can reduce the rate of caesarean operation.

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INTRODUCTION

Induction of labor is a procedure to stimulate the uterus contraction before the spontaneous onset of labor condition with pharmacological or mechanical intervention. The indication of labor induction is when the safety and benefits to both mother and fetal is more important than the pregnancy continuation. The indication includes membrane rupture without labor, gestational hypertension, oligohydramnios, non-reassuring fetal status, post-term pregnancy, and various maternal medical conditions such as chronic hypertension and diabetes. The maternal side's contraindications are related to prior uterine incision, contracted or distorted pelvic anatomy, abnor-mally implanted placentas, and uncommon conditions such active genital herpes infection or cervical cancer. The Fetal factors consist of appreciable macrosomia, severe hydrocephalus, malpresentation, or non-reassuring fetal status (1).

The induction of labor can reduce the caesarean section rate. The incidence of labor induction for shortening the duration of pregnancy has risen. In high-income countries, the proportion of infants delivered at term following labor induction is one in four births. (2) In the United States, labor induction incidence rose 2.5 fold from 9.5 percent in 1991 to 23.8 percent in 2015 (3). One-fifth of delivery in the UK is inducing due to safety concerns for the mother or fetus (4). Socioeconomics is one of the risk factors for labor induction in the United Kingdom (5). There is no data labor induction in Indonesia, but there were some data in Bahagia Hospital, Makassar, which were 22,9 percent of all delivery in 2017 and 5,9 percent in 2018 (6).

The induction mechanisms are varying from mechanical to pharmacological or medicinal. The mechanical methods for induction makes cervical ripening and onset of labor by stretching the cervix. They are amongst the oldest methods used to initiate labor. During the last decades, medication such as Prostaglandin E2 (PGE2), misoprostol, and oxytocin have partly replaced mechanical means (7). Previous study by Trihastuti found that oral administration of misoprostol is safe in decreasing the interval to delivery on 40 weeks gestation women (8). There's a research in the UK comparing the usage of misoprostol vaginal inserts (MVI), and dinoprostone vaginal inserts (DVI) which showed that MVI is better than DVI in reducing time, and duration of active labor, leading to estimated reduced resource use in terms of hospital staff shift and length of stay in hospital. Reducing the resource utilization could improve efficiencies and optimize patient care without increasing the burden of hospital resources. (9) Some studies show that labor induction is more beneficial than expectant delivery management improves perinatal outcomes without increasing caesarean section rates (10) (11). In this study we aimed to evaluate of induction of labor in Dr. Soetomo General Hospital.

METHODS

Design and Setting: We studied pregnant women admitted for labor induction in the Department of Gynecology and Obstetrics at Dr. Soetomo General Hospital, Surabaya. This institution is a public medical care center and one of the most important maternal care facilities in East of Java, Indonesia. It receives referrals patients mainly from the peripheral maternities within the East of Java region and also within the surrounding areas. A cross sectional descriptive study was conducted over twelve months form 1st January to 30th December of 2018 using patients medical records. This study was approved the ethical committee from Soetomo Hospital.

Population: we included all women with pregnancy-related complications while pregnant (antenatal complications need urgent delivery), during labor or within immediate postpartum. Inclusion criteria were all pregnant women with an indication of the induction of labor and with no cephalo-pelvic disproportion during the study period. Women with

contraindication labor induction were excluded such as history of previous caesarean section, malposition of aterm fetus, history of myomectomy or uterine rupture.

Data collection and analysis: We used patient's medical records and followed their history including after delivery and during post-natal hospitalization. The following information were extracted: current pregnancy characteristics, management of childbirth, and the outcome of the labor and the babies. For more precision, information about final diagnoses and prognoses were obtained from the receiving midwife at referral hospital, or from the obstetric outpatient clinic. Descriptive analysis was performed using Microsoft excel.

RESULTS

Table 1 – Characteristic patient Induction of Labor

Characteristic	Cases	%
Patients Age Group		
17 - 34 years old	138	75,4
≥ 35 years old	45	24,6
Parity		
Primiparous	68	37,15
Multiparous	115	62,84
Gestational Age		
≤ 20 weeks	9	4,91
21 - 36 weeks	97	53,01
37 - 42 weeks	77	42,07

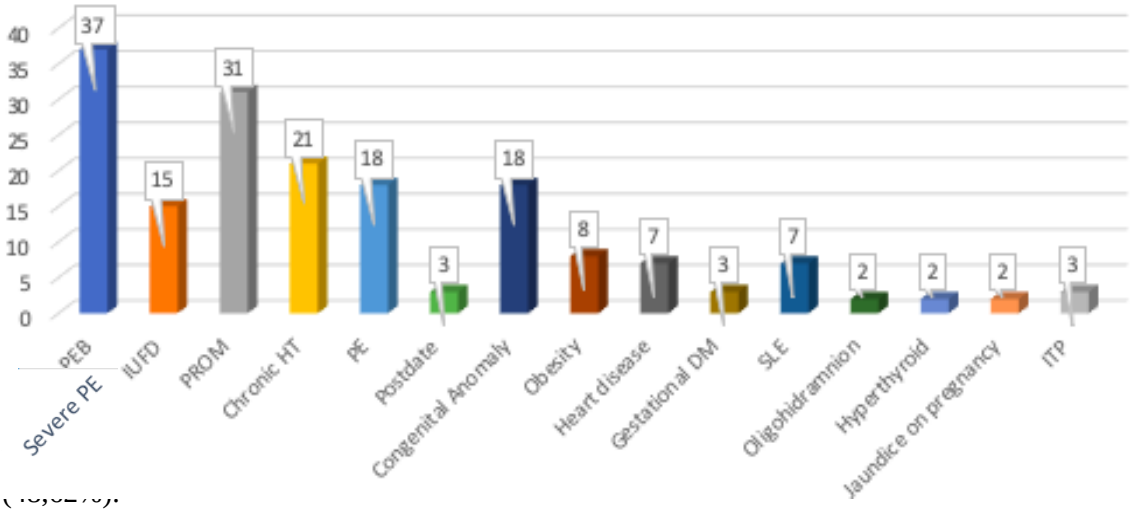
From the data that we gathered throughout 2018, we found a total 1454 birth medical records, and a total of 183 that fulfilled the inclusion criteria, and 92 were excluded due to malposition of the fetus, history of myomectomy, and history of previous caesarean section. Which the majority of the subject (75,4%) was age 17 – 34 years old. The most range of gestational age was 21-36 weeks (53.01%) followed by 37-42 weeks (42.07%). There were 68 patients (37,1%) primigravida and 115 patients (62,8%) were multipara.

Table 2 – Induction of Labor in Dr. Soetomo General Hospital in 2018

Variable	Cases	%
Induction Methods		
Misoprostol	144	78,6
Oxytocin Induction	26	14,2
Misoprostol + Oxytocin Induction	5	2,73
Transcervical Cathether	2	1,09
Transcervical Cathether + Misoprostol	4	2,18
Laminaria	2	1,09
Misoprostol Administration Method		
Orally	18	12,50
Vaginally	126	87,50
Intial Pelvic Score Before Induction		
PS 2	107	58,46
PS 3	53	28,96
PS 4	6	3,27
PS 5	17	9,28

The major induced labor was conducted with misoprostol (78.6%) followed by oxytocin induction (14,2%). Most of the administration of misoprostol to the patient were by vaginally (87,5%, and the most pelvic scores were 2 (58.46%) before underwent induced labor.

Table 3 – Disease Characteristic of Induction of Labor



The major disease that indicate to the patient need termination were severe preeclampsia (20,2%), followed by premature rupture of membrane (PROM) (16,93%).

Table 4 – Induction of Labor Outcome

Variable	Cases	%
Mode of Delivery		
Spontaneous/ vaginally Labor	132	72,28
Forceps Extraction	23	12,50
Caesarean Section	28	15,22
Complications during Labor Induction		
Fetal distress / Abnormality of NST	25	92,5
Failure to progress	2	7,4
Perinatal Outcome		
<500 gr	21	11
500 - 2000 gr	56	15
2000 - 2500 gr	28	31
> 2500 gr	78	43
APGAR Score		
0	49	26,77
<4	30	16,39
4-6	24	13,11
>6	80	43,71

Vaginal delivery was the preferred mode of delivery after the induction of labor with 132 patients (72,28%). Complications found during induction of labor are abnormality of NST and fetal distress (92,5%) and only two patient have to failure to progress. The labor induction failure followed with the caesarean operation were 27 patients (14,7%) and one patient (0,54%) with hysterotomy. From the perinatal outcome there were 78 babies (43%) with the weight over 2500 g, 28 babies (31%) were over 2000 g, and the other was below 2000 g. The most of the baby with APGAR score >6 (43,71%).

DISCUSSION

We have identified that most pregnant women with an indication of the induction of labor were at a productive age (17 – 34 years old), and most of them were multigravida. Some patients with advanced maternal age are over 35 years old and may increase multiple adverse effects for both mother and baby. It may increase of obstetric complications, including placental abruption, placenta praevia, malpresentation, low birthweight. It also increases preexisting maternal medical conditions, including hypertension, obesity, and diabetes, increasing maternal age as do pregnancy-related maternal complications such as pre-eclampsia and gestational diabetes (14). The most common the age of gestation was below 37 weeks, this condition caused by a few of the severe preeclampsia cases that indicated the women terminated the pregnancy soon. In non-severe preeclampsia, it can provide expectant management until 37 weeks of gestational age (10).

Our study demonstrated that misoprostol administration was the main medical treatment used in labor induction at preterm and term birth. This result was in line with Dr. Soetomo Hospital's labor protocol. The application of misoprostol 50 ug vaginally has wider in cervical ripening and labor-induction than orally. However, this procedure required close monitoring of the patients for the abnormal contractions (12). Another study has shown that the time to delivery was shorter

in those women who were receiving vaginal misoprostol than oral administration. More women in the oral group required oxytocin augmentation of labor. The hyperstimulation incidence was similar between the groups, but there was an increased incidence of tachysystole in the vaginal group. There was no difference between the groups due to the mode of delivery or neonatal outcome (13).

Preterm cases were the most cases of gestational age, and it happened because of the second most of the cases were indicated by severe preeclampsia and preterm premature rupture of membrane (PPROM) (10). In other study compared to expectant management, a strategy of labor induction was associated with fewer perinatal mortality. There were four perinatal deaths in the labor induction group than 25 perinatal mortality in the expectant management group. There were also lower cesarean rates without increasing rates of operative vaginal births, and there were fewer NICU admissions with a policy of induction (10). There are improvements perinatal outcomes in the induction of labor from 37 weeks of gestation without increasing the cesarean section rate (11).

CONCLUSION

Our results showed that misoprostol vaginally is the primary medicine used for labor induction in dr. Soetomo General Hospital. The induced cases have mainly achieved spontaneous/ vaginally birth, and most of them reached over six points on the APGAR score. Our results indicated that inducing labor in indicated pregnancy is a relatively standard and safe procedure to terminate the pregnancy and conduct a spontaneous/ vaginally birth. However, further intense study is required to assess the risk factors in conducting labor induction.

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