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To study the maternal and perinatal outcome in primi gravida in induction of labour at 40 weeks and 41 weeks of gestation

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Abstract
Background and Method: Department of Obstetrics and Gynecology, G.R. Medical College & Kamla Raja Hospital & J.A. Group of Hospitals, Gwalior (M.P.), India from June 2017 to May 2018. Primigravida with gestation age 40 Weeks Group (40+0 to 40+6 days) [Group 1] and 41 Weeks Group (41+0 to 41+6 days) [Group 2], 200 antenatal women. Total 200 cases who attended the antenatal clinic and labour room fulfilling the criteria were included in the study. Induction is done with Intracervical PGE2 gel or IV Oxytocin infusion or tab. Misoprostol 50□g.
Result: There was a significant difference seen in induction to active labour in both groups ($p<0.05$). The maximum number of patients goes in active labour in within 12 hours in both the groups (χ^2 =9.2, p=0.0267). Induction to delivery interval was statistically significant found in both group. Most of the patients delivered within 24 hrs of induction in both the groups (χ^2 =11.22, p=0.01505).
Conclusion: India is a developing country in which infrastructure and resources are limited and in addition to that patients load is boundless, so intensive intrapartum monitoring is not always possible. Other most important factors are lack of awareness in the community and poor compliance for follow up by the patients. Considering the above mentioned factors the conclusion is that induction of labour at 40 weeks group fares better in reducing maternal and perinatal complications.

Keywords: Maternal, perinatal, primi gravida and gestation.

Introduction
Nature has endowed every women with the instinct of motherhood. Each mother has experience needless to account for her sacrifice in achieving her right and how a mother at time had to suffer and accept the most exacting price of becoming a mother [1].
Term pregnancy has traditionally been defined as a pregnancy in which 259 to 294 days i.e. 37 to 42 weeks have elapsed since the first day of last menstrual period.
Neonates born before this interval (less than 37 completed weeks of pregnancy) are classified as preterm, whereas those delivered beyond this interval (more than 42 completed weeks or estimated date of delivery plus 14 days) are design at post term [2].
The incidence of post-term pregnancy depends on how accurately gestational age is assessed. Approximately 5-10% women continue to at least 42 weeks gestation [3].
Induction of labour implies termination of pregnancy beyond the period of viability by any method which leads to stimulation of uterine contraction before the spontaneous onset of labour, with or without ruptured membranes. 4 Induction of labour is a common and essential element of contemporary obstetric practice and now accounts for 20 to 30% of deliveries [4].
In post-term women as well as in women with prolonged rupture of membranes at term and in women with hypertensive disease, induction of labour is more effective than expectant management [5].

- Early Term- 37 to 38 weeks 6 days period of gestation.
- Full Term- 39 to 40 weeks 6 days period of gestation.
- Late Term- 41 to 41 weeks 6 days period of gestation.
- Post Term- 42 weeks periods of gestation and beyond.

Material and Method

Department of Obstetrics and Gynecology, G.R. Medical College & Kamla Raja Hospital & J.A. Group of Hospitals, Gwalior (M.P.), India from June 2017 to May 2018. Primigravida with gestation age 40 Weeks Group (40+0 to 40+6 days) [Group 1] and 41 Weeks Group (41+0 to 41+6 days) [Group 2], 200 antenatal women.

Inclusion criteria

- Primigravida
- Maternal age group 18-35 years
- Singleton pregnancy, reliable dates, previous regular menstrual cycles, not conceived during lactational amenorrhea.
- Cases in which gestation dating is confirmed by ultrasonography performed in 1st trimester / early (12-22 weeks) 2nd Trimester

Exclusion criteria

- Maternal age group <18 and >35 years.
- Unknown dates, irregular menstrual cycle, anomalous fetus, mal-presentation, maternal complication like pre-eclampsia, diabetes and cardiac disease in pregnancy.
- All women who reported in spontaneous labour.
- Contraindication to vaginal delivery (e.g. placenta previa)

Study adhered to ICMR guidelines of experiment on human participants and the subjects were included after obtaining informed consent.

Total 200 cases who attended the antenatal clinic and labour room fulfilling the criteria were included in the study. Induction is done with Intracervical PGE2 gel or IV Oxytocin infusion or tab. Misoprostol 50□g.

Results

The study comprised of total 200 cases who came in Department of Obstetrics & Gynaecology, Kamla Raja Hospital, Gwalior for delivery.

The cases were divided in two groups:

The group I - 40 weeks group (40+0to40+6 days) comprised of 120 cases.

The group II - 40 weeks group (41+0 to41+6 days) comprised 80 cases.

Table 1: Distribution of patients according to age

Age group (yrs)	Group 1		Group 2	
	No.	%	No.	%
19-24	54	45	40	50
25-29	48	40	32	40
30-36	18	15	8	10
Total	120	100	80	100

The above table shows that 54 cases (45%) in group 1 and 40 cases (50%) in group 2 were of 19-24 years age group.

48 cases (40%) in group 1 and 32 cases (40%) in group 2 of age group 25-29 years.

18 cases (15%) in group 1 and 8 cases (10%) in group 2 of age group 30-36 years.

Majority of the 102 (85%) of group 1 and 72 cases (90%) in group 2 were in 19-29 years of age group.

Table 2: Distribution of patients according to induction to delivery interval

Time	Group 1		Group 2	
	No.	%	No.	%
< 6 hr	13	10.83	20	25
6-12 hr	83	69.16	41	51.25
13-24 hr	22	18.33	14	17.5
25-48 hr	2	1.66	5	6.25
Total	120	100	80	100

$\chi^2 = 11.22$, df = 3, p value = 0.0105

This table shows percentage of patients and induction to delivery interval with 24 hours and after 24 hours in the both groups. For instance 10.83%, 69.16% and 18.33% of the patients in the group 1 have respective delivery interval of within 6 hours, 6-12 hours and 12-24 hours which are against the percentage figure of 25%, 51.25% and 17.5% for group 2 with the respective delivery interval.

The variation in the percentage between the groups are found not to be significant statistically.

Table 3: Distribution of patients according to type of induction

Type of induction	Group 1		Group 2	
	No.	%	No.	%
Tab. Misoprostol	64	53.33	44	55
Dinoprostone gel	38	31.66	25	31.25
Oxytocin infusion	18	15	11	13.75
Total	120	100	80	100

The above mention table shows types of induction method in group 1 and group 2.

Out of 120 cases, 64 cases (53.33%) in group 1, 44 cases (55%) in group 2 were induced with Tab. misoprostol 50 mcg.

38 cases (31.66%) in group 1 while 25 cases (31.25%) in group 2 were induced with Dinoprostone gel.

18 cases (15%) were induced with oxytocin infusion in group1 and 11 cases (13.75%) in group 2.

Table 4: Distribution of patients according to mode of delivery

Mode of delivery	Group 1		Group 2	
	No.	%	No.	%
FTND	88	73.33	36	45
Instrumental	3	2.5	2	2.5
LSCS	29	24.16	42	52.5
Total	120	100	80	100

The above mention table show that among 120 cases in group 1, 88 cases (73.33%) delivered vaginally and 29 cases (24.16%) underwent lower segment cesarean section.

3 cases (2.5%) underwent instrumental delivery.

In the present study, among 80 cases in group 2, 36 cases (45%) delivered vaginally and 42 cases (52.5%) underwent lower segment cesarean section.

Table 5: Distribution of cases according to NICU admission

NICU admission	Group 1		Group 2	
	No.	%	No.	%
Yes	45	37.5	52	65
No	75	62.5	28	35
Total	120	100	80	100

$\chi^2 = 14.53$, df =1, p value = 0.000138

The above table shows that more number of newborn require NICU admission in group 2. (Most of them were for short period for the purpose of observation).
In group 1, only 45 cases (37.5%) require NICU admission whereas in group 2, 52 cases (65%) require NICU admission.
This is statistically significant (p value <0.05)

Discussion

In our study, out of 200 cases, 120 cases (60%) belong to 40 weeks group and 80 cases (40%) belong to 41 weeks group.
Ranjana Patil *et al* (2016) [6] and Punya BS *et al* (2017) [7] have done study which is similar to the present study. Shinge *et al* (2013) [8] reported that 44% and 34% cases in 40 and 41 weeks group respectively.
In the present study the time required for induction to entry in to active labour interval is statistically significant. ($p<0.05$)
In our study we found that 114 cases (95%) go in active labour within 12 hours in group 1 while 68 cases (85%) go in active labour in group 2 within 12 hours
In present study, more patients 96 i.e. (79.99%) delivered with in12 hours in 40 weeks group and 61 cases (76.25%) delivered within 12 hours in 41 week group.
In study of Alxendar Megalo *et al* (2004) [9] relative induction delivery interval was significantly shorter in misoprostol group than in dinopristone group ($p<0.05$).

Conclusion

India is a developing country in which infrastructure and resources are limited and in addition to that patients load is boundless, so intensive intrapartum monitoring is not always possible. Other most important factors are lack of awareness in the community and poor compliance for follow up by the patients.
Considering the above mentioned factors the conclusion is that induction of labour at 40 weeks group fares better in reducing maternal and perinatal complications.

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