

Maternal and Neonatal Outcome in Pregnancy beyond 41 Weeks of Gestation: An Observational Study

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Abstract:

Background: Pregnancy beyond term is associated with adverse maternal and perinatal outcome. The aim of the study was to estimate the maternal and perinatal outcome in pregnancies at and beyond 41 weeks of gestation. **Methodology:** It was a prospective study of 140 patients with pregnancy beyond 41 weeks fulfilling the eligibility criteria and admitted and delivered in department of obstetrics and gynaecology at a tertiary care hospital. We examined its association with following outcomes: age, parity, genetic factors, bishop's score at admission, mode of delivery, induction rate, meconium stained amniotic fluid, oligohydramnios, perinatal and neonatal morbidity, perineal tear, postpartum haemorrhage, maternal morbidity and mortality etc. **Results:** Out of 140 patients, majority was the age group of 21-25 years, 68 (48.6%) patients were primigravida while 72 (51.4%) patients were multigravida. Maximum patients 65% were not in labour whereas 35% were in labour. In 51 (36.4%) patients mode of delivery was caesarean section, in which most common indication being foetal distress in 25.5% followed by meconium stained amniotic fluid in 17.6%. In present study perinatal morbidity like stillbirth, RDS were 2.86% & 25.8% respectively. Maternal morbidity like PPH, tear and wound infection were 4.31%, 6.4%, 0.7% respectively. **Conclusions:** With Regular antenatal check-up, incidence of post term pregnancy can be decreased and labour induction should be considered at 41 weeks to prevent maternal and perinatal complications.

Keywords: Prolonged pregnancy, Induction of labour, 41 weeks of gestation, Maternal & perinatal morbidity

Introduction:

Term pregnancy is defined as a pregnancy with gestational age from 37 weeks to 42 weeks and beyond 42 weeks is defined as postterm pregnancy.

The risk factors are primiparity¹, maternal genetic factors², prior history of postdatism³, BMI >30.4 and male gender of the fetus.⁵ Postdated pregnancy is diagnosed by last menstrual period, ultrasonography and clinical findings. Expected date of delivery (EDD) can be confirmed by dating scan. The most common cause of postdated pregnancy is wrong dates.

There is increased risk of foetal hypoxia⁶, asphyxia, meconium aspiration syndrome⁷, macrosomia⁸, fracture, nerve paralysis, atelectasis, hypoglycaemia and stillbirths and early neonatal death in postterm pregnancy. The risk increases with increase in the gestational age beyond 42 weeks⁹. There are high chances of dysfunctional labour, third and fourth degree perineal tear, big baby cervical tear, instrumental vaginal delivery, cephalopelvic disproportion and rising rate of caesarean delivery and postpartum haemorrhage.

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In the present study, maternal and perinatal outcome was studied in pregnancy beyond 41 weeks of gestation in consideration of spontaneous and induced labour. In low-risk pregnancy at term, it has been suggested that active management of risk through the use of preventive labour induction¹⁰ prior to possible development of uteroplacental insufficiency or cephalo-pelvic disproportion can improve birth outcomes and reduce caesarean section rates.

Methodology:

Aims & Objectives:

1. Study incidence of pregnancy beyond 41 weeks of gestation.
2. Study maternal and perinatal outcome in pregnancies beyond 41 weeks of gestation.
3. Study incidence of oligohydramnios and meconium stained amniotic fluid in pregnancies beyond 41 weeks of gestation.

It was Prospective observational study which is carried out between March 2020 and February 2021 in the obstetrics and gynaecology department in tertiary care hospital. In order to obtain relatively low risk pregnancies, every case had to pass through exclusion and inclusion criteria.

Sample size of 140 is calculated using OpenEpi Version 3, prevalence of 10% and confidence limit 5%.

Sampling technique was simple random technique.

Inclusion criteria:

1. All normal pregnant women whose pregnancy extended beyond 41 weeks.
2. Patients with single intrauterine pregnancy with cephalic presentation.
3. Patient very sure of her last menstrual period and whose dating scan is available.
4. No history of using hormonal contraceptive methods six months prior to conception.

Exclusion criteria:

1. Patients who are not sure of last menstrual period or dating scan is not available.
2. Patients with history of irregular menstrual period.
3. Malpresentation.
4. Maternal complication like PIH, diabetes and

APH, BOH, Heart disease, Thyroid dysfunction were excluded.

Results:

Parity wise distribution

In present study maximum patients were in multigravida 51.4%.

Presentation on admission and bishop's score

Modified Bishop Score was less than 3 in 33% patients. It was 4-6 in 56% patients and 11 % patients had score more than 7. Out of 140 patients, 49 patients were in labour and 91 patients were not in labour. Out of 91 patients who were not in labour, only 61 patients were induced and remaining 30 patients allowed to go in spontaneous labour.

Mode of delivery in patients who were in labour and not in labour at the time of presentation

Out of 49 patients who were in labour 89.8% (n=44) had vaginal delivery and 10.2% patients (n=5) underwent emergency Caesarean section (LSCS).

Out of 61 patients who were not in labour and induced, 68.9% (n=42) had vaginal delivery and 31.1% (n =19) had caesarean section. Out of 31 patients who allowed to go in spontaneous labour, only 3.3% (n=3) patients had vaginal delivery and 29.7% patients (n=27) underwent LSCS.

Incidence of LSCS and indication of LSCS.

There is increased incidence of LSCS 36.43% and most common indication (47.4% patients) of LSCS is foetal distress followed by meconium stained amniotic fluid.

Incidence of maternal morbidity

Out of 140 patients, 4.3% patients had vaginal laceration, 4.35 patients had PPH and 2.3% patients had paraurethral tear.

Incidence and most common cause of NICU admission and perinatal mortality

22.1% (n=31) patients admitted in NICU and most common cause being respiratory distress syndrome (n=8) followed by large for gestational age (n=7).

2 patients had stillbirth (one is because of congenital anomaly and second stillbirth is because of congenital heart disease with metabolic acidosis) and 2 patients had early neonatal death.

There is slightly increased rate of perinatal mortality (2.86%).

Table 1: Parity of the Patient

Parity	Frequency	Percent
Primigravida	68	48.6
Multigravida	72	51.4
TOTAL	140	100

Table 2: Mode of Delivery In Total Patients

Mode of Delivery	Frequency	Percent
FTND	83	59.28
LSCS	51	36.4
Instrumental	6	4.28
TOTAL	140	100

Table 3: Mode of Delivery In Induced Patients

	Frequency	Percent
FTND	38	62.2
LSCS	19	31.1
INSTRUMENTAL	4	6.55
TOTAL	61	100

Table 4: Incidence of Meconium stained amniotic fluid

Consistency	Frequency	Percent
Thin	15	10.7
Moderate	8	5.7
Thick	12	8.6
TOTAL	35	25.0

Table 5: Incidence of Oligohydroamnios

Oligohydroamnios	Frequency	Percent
	13	9.2

Table 6: Maternal Mortality & Morbidity

Cause	Frequency	Percent
Vaginal laceration	6	4.3
Blood transfusion	5	3.6
Paraurethral tear	3	2.1
Wound gap	1	0.7
Left angle uterine extension laterally 3 x 2 cm	1	0.7
No maternal morbidity	124	88.6
TOTAL	140	100

Table 7: Perinatal Deaths

Deaths	Frequency	Percent
STILLBIRTH	2	1.4
NND	2	1.4
NO	136	97.1
TOTAL	140	100

Table 8: Indication for NICU Admission

Indications	Frequency	Percent
LGA	7	22.3
Rh Negative Status	6	19.3
Respiratory Distress Syndrome With Or Without MSAF	8	25.8
Hyperbilirubinemia	2	6.4
Cleft Palate	1	3.2
DCT POSITIVE	1	3.2
Hypoglycemia	1	3.2
Multiple Congenital Anomaly	1	3.2
PROM	2	6.4
Refusal to feed	1	3.2
Social reference	1	3.2
TOTAL	31	100

Discussion:

Incidence of pregnancy beyond 41 weeks of gestation varies from 4 to 10% as per various authors. Incidence of postdated pregnancy as per Paliulytė V & Ramašauskaitė D (2010)¹¹ as 5%, Moradan S (2014)¹² as 3.33% respectively compared to our study 4.86%.

Prolonged pregnancy is more common in nulliparous woman but in various recent studies incidence prolonged pregnancy more common in multigravida for example study by Marahatta R (2009)¹³ (54%), and Naz F (2009)¹⁴ (54%) patients were multigravida correlating with our study.

Patients on admission were not in labour (65%) in our study whereas 35% of the total patients were in labour. Out of patients who were not in labour, 15.1% patients had Bishop's score less than 3 and 42.4% had Bishop's score between 4 and 6.

According to Johnson DP et al (2003)¹⁵ Labor induction increases the use of caesarean delivery, particularly for the primiparous woman with an unripe cervix.

In our study, out of 91 patients who had crossed 41 weeks of gestation but not gone in labour 61 patients were induced whereas 30 remaining patients were allowed to go in labour spontaneously. Out of 61 patients who were induced 38 (62.2%) underwent Vaginal delivery and 19 (31.1%) patients required LSCS and 4 patients (6.55%) required instrumental delivery. **(Table No. 3)** Overall in our study 59.28% patients delivered normal vaginally, 36.4% patients underwent emergency Caesarean section and 4.28% patients required instrumental delivery. **(Table No. 2)** Our study of 140 patients more than 41 weeks gestation, 79 (56.4%) had spontaneous onset of labour 61 patient induced (43.6%)

Maximum LSCS done for foetal distress (23.50%) next is meconium stained liquor (15.7%), cephalo-pelvic disproportion (13.7%), severe oligohydramnios (7.8%), previous LSCS with scar tenderness (7.8%), failure of induction (5.9%), non-progress of labour (5.9%) previous LSCS with foetal distress (3.9%) previous LSCS with cephalo pelvic disproportion (2%).

Most common indication of LSCS was foetal distress in induced patients in our study (47.4%) correlating with Paliulytė V & Ramašauskaitė D¹¹ and Agata Szpera-Goździewicz *et al*¹⁶ (2013) studies.

Incidence of oligohydramnios in our study is 9.27% **(Table No. 5)** Incidence of oligohydramnios in various studies such as Paliulytė V & Ramašauskaitė D (2010)¹¹, Dr. Akshaya Kumar Mahapatro (2015)¹⁷ and Akhtar P *et al*⁸ (2014) is 10.4%, 22.6% and 21% respectively. Our study correlates with Paliulytė V & Ramašauskaitė D¹¹ study.

NICU admission rate was 22.9% in this study, common reason for admission were respiratory distress syndrome (25%); large for gestational age (21.7). **(Table No. 8)** There were 2 (1.4%) neonatal deaths and 2 still birth (1.4%). Perinatal mortality in our study was 2.85%. Perinatal mortality according to Thakur R *et al*⁹ (1985) is 5.4%.

Most common maternal complication in late term and post term pregnancy is vaginal laceration followed by PPH in various studies as stated above. In our study 6 (6.3%) patients have vaginal lacerations.⁵ (3.6%) patients needed blood transfusion. 3 patients had Para

urethral tear, wound dehiscence in one patient and 1 patient had uterine angle extension. No maternal mortality is observed in our study. **(Table No. 6)**

This study correlates with study conducted by Caughey A B *et al*¹⁹ where they did retrospective cohort study of all normal pregnant women delivered from 1995 to 1999. They found that the risk of maternal peripartum complications increase beyond 40 weeks of gestation. Rates of 3rd or 4th degree perineal tear, chorioamnionitis, postpartum hemorrhage and labour dystocia were more common in among women with gestational age more than 40 weeks compared to 39 weeks of gestation.

Conclusion:

One should consider post-dated pregnancy as a high-risk condition due to unfavourable maternal and perinatal outcomes. Complications can be lessened by aggressive induction of labour after 41 weeks of gestation or elective caesarean section or any other obstetric methods, after assessing the foetus by ultrasonography, evidence of ripened cervix and ruling out any contraindications for vaginal birth or when foetal compromise is documented.

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