

THIRTY SEVEN WEEKS AND BEYOND MATERNAL AND FOETAL OUTCOME BY WEEK OF GESTATIONGeeta Jagannath Doppa¹, Ravikanth Onkarappa Gowder², Ruma Dutta³¹Professor & HOD, Department of Obstetrics & Gynaecology, Rajiv Gandhi University of Health Sciences.²Assistant Professor, Department of Obstetrics & Gynaecology, Rajiv Gandhi University of Health Sciences.³Junior Resident, Department of Obstetrics & Gynaecology, Rajiv Gandhi University of Health Sciences.**ABSTRACT****BACKGROUND**

It was noted in 1951 that although pregnancies persisting beyond 300 days occurred less than 5% of the time, they accounted for 30% of perinatal deaths. In the most recent Technical Bulletin on post-term pregnancy, the American College of Obstetricians and Gynaecologists reiterated the threshold of 42 weeks of gestation as the definition of post-term pregnancy. Their continued use of 42 weeks is particularly surprising in the face of an abundance of research demonstrating that induction of labour at 41 weeks of gestation and beyond leads to lower rates of neonatal morbidity and lower rates of caesarean deliveries. Our study is to find out the prevalence of spontaneous onset of labour and prevalence of maternal and perinatal morbidity beyond 37 weeks of gestation up to 41 weeks.

AIM OF THE STUDY

Our study is to find out the prevalence of spontaneous onset of labour in full term pregnancy and prevalence of morbidity by week of gestation.

SETTINGS AND DESIGN

It is an observational study conducted in low risk full-term pregnant women to find out the prevalence of spontaneous onset of labour and their morbidity.

METHODS AND MATERIALS

The study was conducted during the period 1st of January 2014 to 31st December 2014 in the Department of OBG. The low risk pregnant women going into spontaneous labour between 37 weeks to 41 weeks were considered for the study. They were divided into 37-38 weeks, 39-40 weeks and 41 weeks. Statistical Analysis used was chi square test on SPSS 15.

RESULTS

There were 1098 women delivered during the study period, out of which 116 low risk pregnancy women who had spontaneous onset of labour from 37 weeks to 41 weeks were considered for the study. Sixty four percent had spontaneous onset of labour were at 39 to 40 weeks of gestation. Fifty three percent of patients were at the age of 26-30 years. Sixty nine percent of deliveries were multigravida. Fifty eight percent of labours were seen with the BMI of 19-24.

CONCLUSION

Our study shows that delivery complications vary with gestational age. As the Gestation increases from term Gestation Prevalence of Spontaneous onset of labour increases and the prevalence of complications increases near 41 weeks Gestation.

KEYWORDS

Full Term Pregnancy, Maternal Outcome, Foetal Outcome, Oxytocin, Chorioamnionitis.

HOW TO CITE THIS ARTICLE: Doppa GJ, Gowder RO, Dutta R. Thirty seven weeks and beyond maternal and foetal outcome by week of gestation. J. Evolution Med. Dent. Sci. 2016;5(30):1577-1580, DOI: 10.14260/jemds/2016/371

INTRODUCTION

It was noted in 1951 that although pregnancies persisting beyond 300 days occurred less than 5% of the time, they accounted for 30% of perinatal deaths.¹ In the most recent Technical Bulletin on post-term pregnancy, the American College of Obstetricians and Gynaecologists reiterated the threshold of 42 weeks of gestation as the definition of post-term pregnancy.²

Their continued use of 42 weeks is particularly surprising in the face of an abundance of research demonstrating that induction of labour at 41 weeks of gestation and beyond leads to lower rates of neonatal morbidity and lower rates of caesarean deliveries.^{3,4} However, there has been a change in the distribution of these births with a decrease in births reported as 42 weeks from 3.9% in 1990 to 2.5% in 1996 and an accompanying increase in births reported as 37-41 weeks.

More recently evidence has emerged, although not from randomised controlled trials, that delaying elective caesarean section until 39 weeks significantly reduces the incidence of respiratory morbidity among new-born infants.⁴ Before 41 weeks of gestation, a number of complications of pregnancy, both maternal and neonatal, increase with increasing week of gestation.⁴⁻⁶

Financial or Other, Competing Interest: None.

Submission 06-02-2016, Peer Review 19-03-2016,

Acceptance 24-03-2016, Published 14-04-2016.

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DOI: 10.14260/jemds/2016/371

In the Journal of Perinatology, Nicholson et al. estimated the optimal gestational age of delivery with respect to maternal and neonatal outcomes. In the low-risk pregnancy group, they estimate it to be between 38 and 39 weeks of gestation. Our study is to find out the prevalence of spontaneous onset of labour and prevalence of maternal and perinatal morbidity beyond 37 weeks of gestation up to 41 weeks.

MATERIAL AND METHODS

The study was conducted during the period 1st of January 2014 to 31st December 2014 in Department of OBG. The low risk pregnant women going into spontaneous labour between 37 weeks to 41 weeks were considered for the study. They were divided into 37-38 weeks, 39-40 weeks and 41 weeks. During the period Demographic data, Maternal age, Parity, Socioeconomic status and Body mass index at the time of Delivery were studied.

Gestational age was calculated from Last Menstrual Period (LMP), if she had regular menstrual cycle in the past three months; but women with irregular menstrual cycle, first trimester ultrasonography Biometry was compared with second trimester ultrasonography Biometry and if there was less than two weeks' difference in gestation was considered for the study.

They were observed for duration of labour, duration of second stage of labour, percentage of clients required oxytocin acceleration, prevalence of chorioamnionitis, prevalence of Obstetric Forceps/Ventouse assisted vaginal delivery, prevalence of caesarean delivery, prevalence of non-reassuring foetal heart rate, birth weight of newborn, prevalence of Apgar score less than 4 at fifth minute, prevalence of NICU admission, prevalence of neonatal sepsis and seizure in first 24 hours.

Statistical Analysis

Data was tabulated and the statistical analysis was done using computer-assisted statistical software SPSS Package Version 20. Statistical test used was Chi-square test for proportions. Probability was calculated at 0.05 level of critical significance.

RESULTS

There were 1098 women delivered during the study period. Out of which 116 low risk pregnancy women who had spontaneous onset of labour from 37 weeks to 41 weeks were considered for the study. Sixty four percent who had spontaneous onset of labour were at 39 to 40 weeks of gestation. Fifty three percent of patients were at the age of 26-30 years. Sixty nine percent of deliveries were multigravida. Fifty eight percent of labours were seen with the BMI of 19-24. The Oxytocin acceleration during deliveries at gestation 39-40 weeks were statistically significant.

The prevalence of chorioamnionitis, prolonged labour, prolonged second stage of labour were same through all gestation. The prevalence of caesarean section and non-reassuring foetal heart rate pattern was significant at 39-40 weeks' gestation. The perinatal outcome like birth weight more than 4 kg, five minute Apgar score less than 4, admission to intensive care, sepsis and seizure in first 24 hours were seen same in all the three groups.

DISCUSSION

The study was conducted to find out pregnancy outcome among spontaneous onset of labours in term pregnancy, i.e. 37 weeks of gestation to 41 weeks. They were studied in three groups, 37 and 38 weeks, 39 and 40 weeks and 41 weeks of gestation. The study groups were comparable in confounding variables like maternal age, parity, socioeconomic status and body mass index. The prevalence of Oxytocin acceleration was statistically significant in 39 and 40 weeks' group and it was less in early group as well as late group. The prevalence of chorioamnionitis was not statistically significant among three groups.

Labour complications increased progressively from 37 to 42 weeks' gestation, including length of time in labour and need for operative delivery in James M et al.⁷ In contrast present study did not show any increase in the total duration of labor or second stage of labour. The prevalence of caesarean section was significantly high in 39 and 40 weeks' group. This observation contrasts the results reported in a multicenter trial by Hannah et al.⁸ wherein the caesarean delivery rates were 21.2% when labour was induced and 24.5% when the pregnancy was managed expectantly at 41 weeks' gestation.⁸

The increased risk of intrauterine foetal death after gestational week 41 is best demonstrated when ongoing pregnancies are used as denominator. The risk for intrauterine foetal death in Hannah ME et al. study was 6 times as great in gestational week 42 as compared with gestational week 38.⁹ Similarly, present study found statistically significant non-reassuring foetal heart rate pattern in 41 weeks' group. Apgar score below 7 at 5 minutes in term infants has been associated with an increased risk of neonatal morbidity, infant mortality and neurologic impairment.¹⁰ In agreement with other studies, we found that the prevalence of low Apgar scores in spontaneous labours was same in all three groups. Birth weight was not statistically significant in all the three groups. The NICU admission and Neonatal sepsis was high in 41 weeks' gestation group.

CONCLUSION

Our study shows that delivery complications vary with gestational age. As the gestation increases from term gestation, prevalence of spontaneous onset of labour increases and the prevalence of complications increases near 41 weeks' gestation.

Factors	Weeks in Gestation n=116			P value
	37-38 weeks (%)	39-40 weeks (%)	41 weeks (%)	
Maternal Age				
21-25 year	5 (4.31)	27 (23.27)	9 (7.75)	0.043 *
26-30 year	7 (6.03)	31 (26.72)	15 (12.93)	
>31 years	7 (6.03)	6 (5.17)	9 (7.75)	
Primigravida	11 (9.48)	27 (23.27)	9 (7.75)	0.088 (NS)
Multigravida	8 (6.89)	37 (31.89)	24 (20.68)	
Socioeconomic Status				
Lower	7 (6.03)	25 (21.55)	12 (10.34)	0.044 *
Middle	11 (9.48)	27 (23.27)	21 (18.10)	
Upper	1 (0.86)	12 (10.34)	0 (0.00)	
Body Mass Index at Delivery				
<18	8 (6.89)	13 (11.20)	11 (9.48)	0.000 ***
19-24	11 (9.48)	25 (21.55)	22 (19.28)	
>25	0 (6.34)	26 (7.75)	0 (6.89)	

Table 1: Demographic Profile

NS = Not Significant Statistically.

*** = Very Highly Significant.

* = Statistically Significant.

Characteristics	Weeks in Gestation			P value
	37-38 weeks	39-40 weeks	41 weeks	
Oxytocin Acceleration	19 (19.37)	36 (31.03)	28 (24.13)	0.000 ***
Chorioamnionitis	7 (6.03)	9 (7.75)	9 (7.75)	0.068 (NS)
Admission to Delivery (hr.)*	8.5±6.5	6.6±5.3	5.5±4.6	
>10 h	1 (0.86)	2 (1.72)	1 (0.86)	0.89 (NS)
Second Stage Labour >2 h	6 (5.17)	7 (6.03)	8 (6.89)	0.068 (NS)
Forceps	5 (4.31)	7 (6.03)	8 (6.89)	0.134 (NS)
Caesarean	13 (11.20)	15 (12.93)	8 (6.89)	0.000 ***
Non-Reassuring Foetal Heart Rate	7 (6.03)	6 (5.17)	9 (7.75)	0.010 **

Table 2: Labour Characteristics

*Mean ± Standard deviation.

NS = Not significant statistically.

*** = Very Highly Significant.

** = Highly Significant.

Characteristics	Weeks in Gestation			
	37-38 weeks	39-40 weeks	41 weeks	P value
Birth weight mean >4.0 kg	7 (6.03)	9 (7.75)	9 (7.75)	0.0068 (NS)
5-minute Apgar <4	8 (6.89)	7 (6.03)	8 (6.89)	0.09 (NS)
Admission to Intensive Care	14 (12.06)	16 (13.79)	19 (16.37)	0.000 ***
Sepsis	8 (6.89)	7 (6.03)	11 (9.48)	0.003 **
Seizures in first 24 hrs.	3 (2.58)	2 (1.72)	3 (2.58)	0.135 (NS)

Table 3: Perinatal Outcome

NS = Not Significant Statistically.

*** = Very Highly Significant.

** = Highly Significant.

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