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Original Research Article

Foetal outcome by the weeks of gestation in spontaneous vaginal delivery at term

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ABSTRACT

Introduction: The gestational age at which the delivery occurs is important in determining the perinatal outcome. In this study, the foetal outcome was analysed according to the gestational age in weeks in spontaneous vaginal delivery occurring between 36 completed weeks to 40 completed weeks of gestation.
Aim: To study the foetal outcome according to the weeks of gestation in spontaneous vaginal delivery occurring between 36 completed weeks to 40 completed weeks of gestation.
Materials and Methods: A retrospective study of women who spontaneously delivered vaginally, at gestational age between 36 completed weeks to 40 completed weeks from 1 July 2019 to 30 September 2019 was conducted at GMERS Medical College and Hospital, Sola.
Total 390 cases were studied.
Foetal outcome in terms of birth weight, APGAR score at 1 minute, and NICU admissions were noted and analysed according to the weeks of gestation at delivery, and entered into a database.
The results were analysed and presented in the form of tables and graphs.
Results: The average birth weight increased with increase in the weeks of gestation at the time of the spontaneous delivery. The average birth weight of neonates born in 36th, 37th and 38th week was 2.314Kg, 2.623Kg and 2.704Kg, respectively. 14.28% of the babies born in the 36th week of gestation were admitted to the NICU. 4.705% and 4.347% of the babies born in the 37thand 38th week of gestation respectively, were admitted to the NICU.
The Mean APGAR score of the neonates born in 36th, 37th, 38th and 39th week were 8.714, 9.235, 9.347, and 9.645, respectively. Thus, the mean APGAR score increased by the weeks of gestation at the time of the spontaneous delivery.
Conclusion: Unnecessary induction of labour or elective LSCS before 39 weeks should be discouraged. In case of elective deliveries, unless there is a health risk to the mother or baby, it is best to wait to deliver until reaching full term at 39 weeks.

1. Introduction

The gestational age at which the delivery occurs is important in determining the perinatal outcome. Previously, the period from 37 weeks to 42 weeks of gestation was considered "term" with uniform feto-maternal outcome in those weeks.[1]

The hazards of both pre -term and post-term pregnancy on foetal outcome are well known. But, more focus is required to know the differential morbidity experienced by neonates born at different times within the 5 week interval of the term gestation.[2]

In this study, the foetal outcome was analysed according to the gestational age in weeks in spontaneous vaginal delivery occurring between 36 completed weeks to 40 completed weeks of gestation.

2. Aim

To study the foetal outcome according to the weeks of gestation in spontaneous vaginal delivery occurring between 36 completed weeks to 40 completed weeks of gestation.

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3. Materials and Methods

A retrospective study of women who spontaneously delivered vaginally, at gestational age between 36 completed weeks to 40 completed weeks from 1 July 2019 to 30 September 2019 was conducted at GMERS Medical College and Hospital, Sola.

Total 390 cases were studied.

Foetal outcome in terms of birth weight, APGAR score at 1 minute, and NICU admissions were noted and analysed according to the weeks of gestation at delivery, and entered into a database.

The NICU admissions within the first 48 hours of birth were taken into consideration. The average foetal weight and percentage of NICU admissions were calculated by every week of gestation at which the delivery took place. The results were analysed and presented in the form of tables and graph.

3.1. Inclusion criteria

Women who spontaneously delivered singleton cephalic foetus vaginally, in between 36 completed weeks to 40 completed weeks.

3.2. Exclusion criteria

1. Women in whom Last Menstrual Period is not exactly known.
2. Induced or Assisted deliveries.

Table 1: Distribution according to Age

Age	Number of pts.	Percentage
18-20	45	11.538
21-24	150	38.461
25-29	135	34.615
>=30	60	15.384
Total	390	100

Table 2: Distribution according to parity

Parity	Number of patients	percentage
1	165	42.307
2	125	32.051
3	70	17.948
4	20	5.128
>=5	10	2.564
Total	390	100

4. Results

Total 390 patients were studied. More than 73% patients were between 21 to 29 years of age (see Table 1). More than 90% of the patients had parity less than or equal to 3(see Table 2).

Table 3: Distribution according to gestational age

Gestational age	Number of patients	Percentage
36 week 0 days to 36 week 6 days	35	8.974
37 week 0 days to 37 week 6 days	85	21.794
38 week 0 days to 38 week 6 days	115	29.487
39 week 0 days to 40 week 0 days	155	39.743
Total	390	100

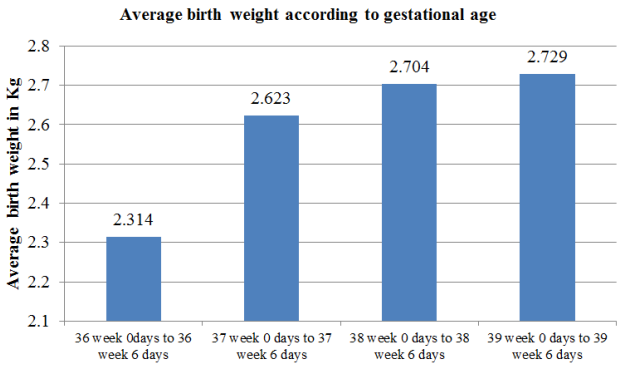

Fig. 1: Average birth weight according to the gestational age

Total 35 out of 390 patients (8.9%) delivered at gestational age between 36 weeks 0 days to 36 weeks 6 days. 85 patients (21.7%) delivered at gestational age between 37 weeks 0 days to 37 weeks 6 days. 115 patients (29.48%) delivered at gestational age between 38 weeks 0 days to 38 weeks 6 days.155 patients (39.7%) delivered at gestational age between 39 weeks 0 days to 40 weeks 0 days. (see Table 3).

The average birthweight increased with increase in the weeks of gestation at the time of the spontaneous delivery. The average birth weight of neonates born in 36^{th}, 37th and 38^{th} week was 2.314 Kg, 2.623 Kg and 2.704 Kg, respectively. The average birth weight of babies born in between 39 week 0 days to 40 weeks 0 days was 2.729 Kg.(see Figure 1).

Out of the 35 spontaneous deliveries that took place in the 36^{th} week, there were 5 NICU admissions. Thus, 14.28% of the babies born in the 36^{th} week of gestation were admitted to the NICU. 4.705% and 4.347% of the babies born in the 37^{th} and 38^{th} week of gestation respectively, were admitted to the NICU. 3.225% of the babies born between 39 weeks 0 days to 40 weeks 0 days were admitted to NICU.(see Table 5).

The Mean APGAR score of the neonates born in 36^{th}, 37^{th}, 38^{th} and 39^{th} week were 8.714, 9.235, 9.347, and 9.645, respectively. Thus, the mean APGAR score increased by the weeks of gestation at the time of the

Table 4: NICU admissions according to gestational age, within 48 hours of birth

Gestational age	Number of patients	No. of NICU admissions	Percentage of NICU admissions
36 week 0 days to 36 week 6 days	35	5	14.28%
37 week 0 days to 37 week 6 days	85	4	4.705%
38 week 0 days to 38 week 6 days	115	5	4.347%
39 week 0 days to 40 week 0 days	155	5	3.225%
Total	390	19	

Table 5: Mean APGAR score at 1 minute according to the weeks of gestation.

Gestational age	Total no. of patients	Mean APGAR Score at 1 minute
36 week 0 days to 36 week 6 days	35	8.714
37 week 0 days to 37 week 6 days	85	9.235
38 week 0 days to 38 week 6 days	115	9.347
39 week 0 days to 40 week 0 days	155	9.645
Total	390	

spontaneous delivery.(seeTable 5)

5. Discussion

In our study, with the increase in each week of term gestation, there is an increase in the average birthweight and the mean APGAR score at one minute, and decrease in the chances of NICU admissions.

Similar studies have been done in the recent years. In November 2013, American college of obstetrics and gynaecology (ACOG) and Society for Maternal-Foetal Medicine (SMFM) recommended replacing the use of ' term ' which previously indicated gestation between 37 weeks and 42 weeks, with the following gestational age designations:[3]

1. Early term: 37 weeks through 38 weeks and 6 days[3]
2. Full term: 39 weeks through 40 weeks and 6 days[3]
3. Late term: 41 weeks through 41 weeks and 6 days[3]
4. Post term: 42 weeks and beyond[3]

This change of designations within the term gestation has occurred due to increasing number of studies, many of which are led by the Eunice Kennedy Shriver National Institute of Child Health and Human development, showing that key developmental processes occur between 37 and 39 weeks.[4] Babies born at or after 39 weeks have the best chance at healthy outcomes compared to those born before 39 weeks.[4]

6. Conclusion

There is a difference in the chances of foetal morbidity at early term and full term. Unnecessary induction of labour or elective LSCS before 39 weeks should be discouraged.[5]

In case of elective deliveries, unless there is a health risk to the mother or baby, it is best to wait to deliver until reaching full term at 39 weeks.

7. Source of funding

None.

8. Conflict of interest

None.

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