Original Article

Perinatal Outcome in Women at Term with Reduced Fetal Movements

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Abstract

Objective: To find out the impact of perception of reduced fetal movements on mode of delivery and poor perinatal outcome in pregnant women at term.

Methodology: This was a Descriptive case series. The study was completed in six months from Feb 10th, 2019 till August 10th, 2019 in department of Gynecology and Obstetrics, Unit-II holy family hospital Rawalpindi after ethical approval from IRB. Data was collected for demographics (e.g. name and age), contact details, pregnancy related details (e.g. parity, gestational age). Females meeting inclusion criteria were enrolled through department of Obstetrics and Gynecology, Unit-II holy family hospital Rawalpindi. Their detail evaluation and clinical examination was done. They were observed till their outcome. Induction of labor was done if there were no uterine contractions along with decreased fetal movement. C-section was done if there was any indication that was decided by senior gynecologist consultant. Apgar score as per operational definition was calculated at 1st and 5th minutes. All data was collected by researcher herself on prescribed proforma. All data that was collected was entered and then analyzed by using SPSS version 21.0.

Results: The mean age of all cases was 28.16 ± 4.05 with minimum and maximum age as 18 and 35 years. The mean weight, height and BMI was 90.17 ± 17.06 (kg), 1.81 ± 0.17 (m) and 27.44 ± 2.56 respectively. The mean gestational age was 38.88 ± 1.45 weeks with range of 4 weeks (37 to 41 weeks). A total of 109(53.2%) females needed induction of labour, 33(16.1%) had C-section and Apgar score < 7 was noted in 23(11.2%) of the neonates.

Conclusion: We conclude that the frequency of Apgar score < 7 was somehow high in patients those presented with decreased fetal movements. So in future females who present with reduced fetal movement even with no other fetal abnormality, should be managed as being at high risk of placental insufficiency and should be assessed and treated immediately. By preventive and therapeutic strategies we can reduce the related morbidity such as maternal stress, low Apgar score and NICU admission.

Keywords: Pregnancy, Reduced fetal movements, Apgar score, Perinatal outcome, Term

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Introduction

Fetal movement is a sign of life and is used as an indicator of good fetal health.[1] Fetal movements are perceived by mother as any flutter, kick, roll or swish.[2] Well known sign of fetal viability and vitality is the presence of fetal movements (FM)[3,4] and good fetal movements are indicator of integrity of the fetal musculoskeletal and central nervous system. Reduced fetal movement (RFM) is a perception of decrease in the in utero fetal activity by the mother and it is associated with poor outcomes such as intra-uterine death, stillbirth. [5]

Decreased fetal movements perception, by the mother is an indicator of fetal compromise. In the Cardiff method (count to ten), mother should must count at least ten fetal movements every day for a specified period of time. If the movements are less than ten in twelve hours or if the mother needs more than the usual time for fetal movements, this may indicate poor fetal outcome8. Woman counts her baby's movements

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after meals thrice a day in the Sadovsky method 9. In fixed period method, fetal movements should be counted for one hour daily or every 6 hours if there is any change in situation10.In contrary to the reassurance provided by normal fetal movements, reduced fetal movements (RFM) is an important symptom leading to fetal death, and this was recognized initially in cohorts of women who completed fetal movement charts.[7]

According to a study, in 1029 women (83.4%) 205 (16.6%) had ≥2 visits for reduced fetal movements.[8] Multiple visits by women with RFMs at term are mostly associated with high uterine artery doppler resistance indices in the second trimester and infants that are small for gestational age at term. Women who presented with repeated complaints of RFM should be managed as being at high risk of placental insufficiency regardless of the results of antenatal ultrasounds and doppler assessment.[9]

A study reported that IOL was needed in 42.4%, C-section was done on 32.6%, Apgar score < 7 at 1 minute was seen in 7% of the cases.[9]

The rational of study is to find the perinatal outcome and mode of delivery in women at term with reduced fetal movements in our setup. As no local study is found and international, data is lacking on this topic. If we find poor perinatal outcome in our study then women who presents with repeated complaint of reduced fetal movements should be managed as being high risk for placental insufficiency regardless of the results of antenatal ultrasounds in future. By treating these cases with RFM, we may be able to reduce the risk of caesarean sections and poor perinatal outcomes.

Methodology

This was a descriptive case series. Study conducted in Hol yfamily hospital Gynae/Obs Unit II from 10th Feb to 10th August 2019 after ethical approval from institutional research board. Data was collected on demographic variables (e.g. name and age), contact details, pregnancy related details like parity and gestational age. Females meeting inclusion criteria were enrolled through department of Obstetrics and Gynecology, Unit-II holy family hospital Rawalpindi. Their detail evaluation and clinical examination was done. They were observed till their outcomes. Induction of labor was done if there were no uterine contractions and C-section was done if there was any indication that was decided by senior gynecologist consultant. Agar score as per operational definition was calculated at 1st and 5th minutes. All data was collected by researcher herself on prescribed proforma. All collected data was entered and then analyzed using SPSS version 21.0. Quantitative data like maternal age, weight, height, BMI and gestational age was presented as mean ± S.D. Qualitative data like IOL, C-section and APGAR score < 7 was presented in frequency (%). Data was stratified for maternal age, parity, BMI and gestational age to address effect modifiers. Post stratification Chi-square test was used to compare perinatal outcome like C-section and APGAR score <7 in different strata considering P-value ≤ 0.05 is considered as significant.

Results

The mean gestational age was 38.88 ± 1.45 weeks with range of 4 weeks (37 to 41 weeks). .A total of 109(53.2%) females needed induction of labour, 33(16.1%) had C-section and Apgar score < 7 was noted at 1 minute in 39(19%) and at 5th min in 23(11.2%) of the neonates. Table I. The frequency of Apgar score < 7 at 1st minute and at 5th minute was also statistically same in both gestational age groups, p-value > 0.05. Table II

Table I: Frequency distribution of induction of labor & C-section

Induction of labor			
	Frequency		**Percent**
Yes	109		53.2
No	96		46.8
Total	205		100.0
Distribution of C-section			
Yes	33		16%
No	172		84%
Total	205		100.0%
Frequency distribution of Apgar score < 7			
At 1st minute	***Yes***	39	19.0
	No	166	81.0
At 5th minute	***Yes***	23	11.2
	No	182	88.8

Discussion

The goal of our study was to evaluate the effect of reduced perception fetal movements by pregnant women on perinatal outcome, mode of delivery and perinatal mortality.

Table II: Comparison of Apgar score <7 at 1st minute & 5 minutes with respect to gestational age (weeks)					
		Apgar score < 7		Total	P Value
		Yes	No		
Gestational age (weeks)	***37-38***	16(41%)	77(46.4%)	93(45.4%)	0.545
	39-41	23(59%)	89(53.6%)	112(54.6%)	
Total		39(100.0%)	166(100.0%)	205(100.0%)	
Gestational age (weeks)	***37-38***	7(30.4%)	86(47.3%)	93(45.4%)	0.127
	39-41	16(69.6%)	96(52.7%)	112(54.6%)	
Total		23(100.0%)	182(100.0%)	205(100.0%)	

By research analysis it was noted that majority of the studies that were published used two different approaches to determine the relation of fetal movements with perinatal outcomes. In 1st approach perinatal outcome was compared between pregnant women who had reduced fetal movements to pregnant women with normal perception of fetal movements. In 2nd approach perinatal outcome was compared between women who were given information and education regarding counting and meaning of fetal movements in utero and in women who were given no information and education. Our research work goes more with 1st approach.

The incidence of stillbirth is of prime concern. We found that approximately 6 studies were compared the relationship of women who reported with decreased fetal movements to poor perinatal outcome, stillbirths and all had a positive association of decreased fetal movements with poor perinatal outcome. Three studies were found that assessed the relationship of women who reported with decreased perception of fetal movements with mode of delivery and all had a positive relation between maternal perception of decreased fetal movements and increased rates of induction of labor and consequently caesarean sections. The same positive correlation were found in our study as well.

Three studies assessed the result of interventions like training of increased awareness of women for fetal movements and its incidence on mode of delivery. Out of them one study found that women who used fetal movements counting method everyday to count fetal movements had more rates of interventions like induction of labor and caesarean sections in comparison to control group.

Despite of recent advances in obstetrics, stillbirth always remain a significant pregnancy complication. Even in high-resource countries like USA and UK little reduction was found in stillbirth rate over last 20 years. In high resource countries, little reduction in stillbirth rate is due to deficiency of any sensitive or specific tests to correctly identify high risk women so appropriate measures may be used [10]. Perception of decreased fetal movements is a clinical indicator that is closely related to poor fetal outcome and stillbirth. In upto 50% of cases intrauterine fetal demise (IUFD) is found after perception of decrease in fetal movements (RFM) reported for more than 24 hours[11].

Increased fetal surveillance for RFM is associated with increase in antepartum cardiotocography (13%) and also increase in induction of labour and caesarean section rates [17]. This is the need of time to differentiate between the pregnancies who will have a normal outcome and those who are at risk of a poor perinatal outcome after perception of decreased fetal movements by mother to prevent inappropriate use of limited resources and reduce intervention. Clinical assessment may be a useful to differentiate women which are at increased risk of poor perinatal outcome and who needs intensive surveillance after maternal perception of RFM [18].

According to a study, 47% women who reported decreased fetal movements were associated to pregnancy with high risks and in high risk group pregnancy there were high rates of poor BPP and intrauterine fetal deaths at the time of admission to hospital as compared to other low risk group pregnancy. A prospective study highlights that increased burden of care on health system required by women with perception of RFM increases the rates of induction of labor , NICU admission rates and higher need for surveillance demonstrates the need for critical concentration to this important area [19].

A retrospective study conducted in 2015 assessed that high risk women for poor perinatal outcome may be identified by clinical assessment of women perceiving RFM. Women with RFM may be prioritized for detailed clinical assessment of fetal wellbeing and

growth. [22,23] So a lot more is required in this with inclusion of other variables and more studies required in our demographic area to make new standards.

Conclusion

RFM is a frequent event that occurs during antenatally and is linked with poor perinatal outcome, like increased rates of induction of labour, caesarean section, stillbirth and admissions to NICU. It is the need of time to conduct a research about reduced perception of fetal movements and perinatal outcomes and to educate pregnant women in recognition of reduced fetal movements and also education of health care providers to manage women who reported with reduced fetal movements and its importance for risk assessment in antenatal period. Health care providers should educate pregnant women about counting of fetal movements is the important part of fetal wellbeing and appraise them to report any changes in fetal movements at term.

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