

Obstetric and Neonatal Outcome among Women Presenting with Reduced Fetal Movements in Third Trimester

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ABSTRACT

Background: Reduced fetal movements (RFM) define as the decrease in the normal movement of a developing fetus in the womb. It is important to monitor fetal movements during pregnancy because these can be an indication of the baby's health and wellbeing. The management of RFM in the third trimester includes fetal monitoring

Study design: It is a prospective observational study conducted for the duration of one year from June 2021 to May 2022.

Material and Methods: The study was conducted on 150 patients who visited Obs/ Gynae department of LUMHS Hyderabad, Jamshoro and MBBS Medical College Mirpur Azad Kashmir during the course of 1 year. Average age of patients was 32 years with 30 of them reported to have primary education while the remaining had secondary or higher level of studies. The BMI of 40 patients was more than 30 kg/m² while 35 had BMI between 25-30 kg/m².

Results: The neonatal outcomes in patients were evaluated after reduced fetal growth. There were 60 patients with one episode of RFM and 72 were with multiple RFM episodes. Mortality rate, abnormal CTG (Cardiotocography), neonatal unit (NNU) admission, severe morbidity, low Apgar score and Birth weight <10th centile were some of the outcomes studied

Conclusion: RFM leads to high risk of still birth, Caesarean and severe morbidity for the new born. Although on episode of RFM can't be considered as a necessary evidence of compromised birth but multiple episodes indicates towards several risks related to pregnancy.

Keywords: Reduced fetal movements, neonatal outcomes and third trimester.

INTRODUCTION

Reduced fetal movements, also known as decreased fetal movement, define as the decrease in the normal movement of a developing fetus in the womb. It is important to monitor fetal movements during pregnancy because these can be an indication of the baby's health and wellbeing. Reduced fetal movements (RFM) in the third trimester of pregnancy can be a cause for concern and may indicate fetal compromise¹⁻³. Obstetric and neonatal outcomes among women presenting with RFM in the third trimester may vary depending on the underlying cause of RFM. Studies have shown that RFM is associated with an increased risk of stillbirth, neonatal death, and low birth weight. However, not all cases of RFM are associated with adverse outcomes. The risk of adverse outcomes is higher in cases of persistent RFM and in women who have additional risk factors such as hypertension, diabetes, or fetal growth restriction⁴⁻⁵. In general, the management of RFM in the third trimester includes fetal monitoring. Early delivery may be necessary in cases of persistent RFM. Women who present with RFM in the third trimester should receive prompt and appropriate care to improve fetal outcomes. Regular prenatal care and monitoring can also help to identify the women at risk of RFM and prevent adverse outcomes⁶⁻⁷. RFM is associated with an increased risk of adverse neonatal outcomes⁸. It is important for pregnant women to be aware of their baby's movements and report any changes to their healthcare provider. In some cases, healthcare providers may recommend further testing or monitoring, such as fetal heart rate monitoring or ultrasound, to ensure the baby is healthy⁹⁻¹⁰. Overall, while RFM in the third trimester can be concerning, most women will have healthy babies. Reduced fetal movements can be caused by a variety of factors, including fetal sleep cycles, changes in the mother's activity level, and medical conditions such as gestational diabetes or hypertension.

MATERIALS AND METHODS

The study was conducted on 150 patients who visited Obs/ Gynae department of LUMHS Hyderabad, Jamshoro and MBBS Medical College Mirpur Azad Kashmir during a course of 1 year. Average age of patients was 32 years with 30 of them reported to have primary education while the remaining had secondary or higher level of studies. The BMI of 40 patients was more than 30 kg/m²

while 35 had BMI between 25-30 kg/m². According to the inclusion criteria following patients were included in the study:

- The women with singleton pregnancy
 - The women with gestational age of 28 weeks or more
 - The women with a complaint of reduced fetal movement
- According to the exclusion criteria following patients were excluded in the study:

- The women with the multiple pregnancies
- The women with medical or obstetric complications
- The women with the fetal anomalies

In this study, data from medical records of pregnant women who presented to the obstetric unit of a tertiary care hospital with decreased fetal movements in the third trimester were retrospectively analyzed. Data about the mother's age, her gestational age at delivery, the delivery method, the reason for the delivery, the fetal birth weight, the fetal outcome, and the neonatal outcome was gathered. Detailing the prenatal presentation and taking a blood pressure reading were done before a thorough BPP (Ultrasound analysis of fetal cardiac function, fetal tonality, breathing movement patterns, and a Non Stress Test) was done. During BPP, the mother's perception of the fetal movements was noted. The incidence of negative fetal and neonatal outcomes, such as stillbirth, neonatal death, low Apgar scores, and admission to the neonatal intensive care unit, served as the primary outcome measure (NICU).

RESULTS

The 85 patients were cases of Primigravida while 65 were multigravida. At the time of reduced fetal movement, the gestational age of patients was evaluated and 45 were passed the 40 weeks of pregnancy while 65 were in the 37-40 weeks' time. There were 75 patients with anterior placenta and 60 were with posterior placenta. 70 cases were reported as high risk pregnancies by the doctor as shown in table no.1

The fetal risk factors reported by patients were summarized in table no.2. The most common risk factor reported by patients was fetal growth restriction which was observed in case of 132 patients. while other risk factors like abruptio, overt diabetes, preeclampsia, polyhydramnios and placenta Previa.

Table 1: Demographic features of women

Features	No. of patients (n=150)
Average age (years)	32 years
Education	
Primary education	30
Secondary or above	120
BMI (kg/m ²)	
18-25	75
25-30	35
>30	40
Parity	
Primigravida	85
Multigravida	65
Gestational age of fetus at time of RFM	
28-34 weeks	15
34-37 weeks	25
37-40 weeks	65
>40 weeks	45
Location of placenta	
Anterior	75
Posterior	60
Other sites	15
High risk pregnancies	70

Table 2: High risk factors reported by patients

Factors	No. of patients (n=150)
Fetal growth restriction	132
Abruption	3
Overt diabetes	3
Preeclampsia	4
Placenta Previa	5
Oligohydramnios	4
Polyhydramnios	-

The neonatal outcomes in patients were evaluated after reduced fetal growth. There were 60 patients with one episode of RFM and 72 were with multiple RFM episodes. Mortality rate, abnormal CTG (cardiotocography), neonatal unit (NNU) admission, severe morbidity, low Apgar score and Birth weight <10th centile were some of the outcomes studied as shown in table no.3.

Table 3: Neonatal outcomes in patients with 1 and more than 1 episode of reduced fetal movement

Outcomes	1 episode (n=60)	>1 episode (n=72)	P value
Mortality	4	12	0.005
Abnormal CTG (cardiotocography)	7	3	0.005
NNU admission	16	21	0.001
Birth weight <10 th centile	12	13	0.005
Low Apgar scores	4	16	0.010
Severe morbidity	5	3	0.005
Gestation <37 weeks	12	4	0.003

The pregnancy interventions were studied in the RFM patients and it was found that most of the pregnancies led to cesarean and 25 of them were pre-labor cesarean. 21 had still birth while 33 were admitted to hospital because of complexities.

Table 4: Pregnancy intervention in RFM patients

Outcomes	1 episode	>1 episode	P value
Admission	17	16	0.005
Cesarean	14	21	0.001
Pre labor cesarean	11	14	0.004
Induction of labor	8	10	0.005
Still birth	10	11	

DISCUSSION

Reduced fetal growth is a problem faced by pregnant women quite frequently. One in every 5th pregnancy face issues like reduced fetal growth during pregnancy¹¹. Such women have to face certain complications during pregnancy and afterwards baby also suffers in many instances. In a study it was found that most of the women

who face RFM had normal babies with no complications but there are deaths and complications reported by other study cases as well¹²⁻¹³. This study was carried out to find the obstetric and neonatal outcome among women presenting with reduced fetal movements in third trimester. In our study the incidence of RFM (54%) of more than one episode was higher than other studies where it was found to be 45%¹⁴. There were 150 patients who visited Obygna department LUMHS Hyderabad, Jamshoro during a course of 1 year. Average age of patients was 32 years with 30 of them reported to have primary education while the remaining had secondary or higher level of studies. Lack of education leads to unawareness about pregnancy related issues. As per studies women mostly are unaware about the fetal movements and the risk factors linked to the RFM¹⁵⁻¹⁶. The BMI of 40 patients was more than 30 kg/m² while 35 had BMI between 25-30 kg/m². The 85 patients were cases of Primigravida while 65 were multigravida. At the time of reduced fetal movement, the gestational age of patients was evaluated and 45 patients had passed the 40 weeks of pregnancy while 65 were in the 37-40 weeks' time. There were 75 patients with anterior placenta and 60 were with posterior placenta. 70 cases were reported as high risk pregnancies by the doctor as shown in table no.1. As per studies the feeling of fetal movement depends on several factors that influence reduced fetal movement¹⁷. There were reported multiple risk markers in women who face repeated episodes of reduced fetal movements that supports that reduced fetal growth does links to risky pregnancy¹⁸.

However, studies have shown that repeated episodes of RFM doesn't necessarily means risky pregnancy and is not an authentic marker for evaluation of condition of pregnancy¹⁹. In our study the fetal risk factors reported by patients were summarized in table no.2. The most common risk factor reported by patients was fetal growth restriction which was observed in case of 132 patients. While other risk factors like abruption, overt diabetes, preeclampsia, polyhydramnios and placenta Previa. Previous studies have shown that in case of patients who face multiple episodes of RFM the abnormal CTG was found in 7 patients while in our study 3 patients reported about abnormal CTG. There were 21 patients that were admitted in the new natal unit in the >1-episode group. The morbidity low Apgar scores and Gestation <37 weeks were significantly disturbed in patients that have more than one episode of reduced fetal movement. In our studies the pregnancy interventions were studied in the RFM patients and it was found that most of the pregnancies led to cesarean and 25 of them were pre-labor cesarean. 21 had still birth while 33 were admitted to hospital because of complexities. Previous studies have shown that there were 45% pregnancies with reduced fetal movement that resulted in cesarean and pre labor cesarean. As per studies that were carried out to find the link between reduced fetal movement and obstetric and neonatal outcomes suggests that any abnormal or reduced movement shown by the baby during pregnancy can indicate towards compromised baby²⁰.

In another study it was found that if after one episode of reduced fetal movement there is restoration of normal movement by the fetus then the risk is eliminated but if repeated episodes of RFM are reported that means further scans are needed to check the state of baby as it may lead to early term birth or infant morbidity in some cases²¹. This study has a limitation as the study was done by taking data from a single health care center with small number of patients. If study was done by taking data from different hospitals more precise findings could be made. Also there is need to arrange campaign and pamphlet services for the awareness of women about pregnancy related issues and RFM.

CONCLUSION

RFM leads to high risk of still birth, Caesarean and severe morbidity for the new born. Although on episode of RFM can't be considered as a necessary evidence of compromised birth but multiple episodes indicates towards several risks related to pregnancy.

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