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PREDICTORS OF POOR PERINATAL OUTCOME AFTER MATERNAL PERCEPTION OF REDUCED FETAL MOVEMENT (RFM)

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ABSTRACT

Introduction: Clubfoot is a birth defect where one or both feet are rotated inwards and downwards. The affected foot, calf, and leg may be smaller than the other. Most cases are not associated with other problems. Without treatment, people walk on the sides of their feet which cause issues with walking. The treatment of clubfoot has developed over time and can generally be divided into many approaches like: Kite method, Ponseti method, French Method and other surgical method. **Objective:** In this study our main goal is to evaluate the efficiency of Ponseti Technique for the Treatment of Congenital Club foot. **Method:** This study was a cross sectional studywas done at tertiary medical college and hospital Bangladesh and the sample was 100 patients under Ponseti clubfoot treatment over a period of one years from 1st October 2017 to 1st October 2018. **Results:** During the study, most of the clubfoot patient age range is 1month-5month (57%) and lowest patient age range is 3-year 6 month-4-year age patient (.50%).casting treatment by the Ponseti method in the present study indicated that the results were good in (75%) cases, medium in (25%) cases, and poor in (5%) cases.clubfoot reoccurred only in (3%) cases. Moreover, noncompliance with the treatment was seen in (5%). In addition, the results revealed that the treatment of clubfoot by Ponseti method was successful in (92%) cases. **Conclusion:** From our result we can conclude that, Ponseti method is very much useful and effective treatment for clubfoot patients.

KEYWORDS: Congenital Club foot, Ponseti Technique.

INTRODUCTION

Worldwide, maternal perception of fetal movements has been used for many years to evaluate fetal wellbeing, as pregnancies in which women consistently report good fetal movements have very low morbidity and mortality. Reduced fetal movement (RFM) is a commonly presenting worrisome complaint, both for mothers and attending clinicians.[1]

RFM has been shown to occur in up to 15 % of pregnancies, and comprises 6.1 % of the workload of acute maternity assessment services.[2] Given the increased risk of adverse pregnancy outcome, women presenting with RFM require further assessment to identify any potential risk to the pregnancy. Although there has been national guidance for the management of RFM since 2011.[3] Counting of fetal movement (FM) during pregnancy is believed to be a method by which a woman estimates the fetal well-being. In 2015, it was estimated that 2.6 million babies had died in utero. A percentage of 30-55% of women who experience an episode of reduced fetal movement (RFM) within a week may face stillbirth.[4]

Counting of fetal movement (FM) during pregnancy is a method by which a woman estimates the fetal well-being[5] without the need of a clinician or equipment. Women start feeling their baby's movements between 16th and 20th weeks of pregnancy with primi-parous women feeling their baby's movements usually at 18 to 20 weeks and multiparous at 16 to 18 weeks.[6]

Maternal perception of reduced fetal movement (RFM) has been identified as a potential strategy for stillbirth prevention.[7,8] RFM is also associated with fetal growth restriction5 and placental abnormalities in pregnancies that do not end in stillbirth.[9,10]

Although RFM are known to be a potential presentation of fetal death or acute compromise, repeated episodes of RFM are also widely thought to increase the risk of subsequent adverse outcomes. The evidence for this is limited,[11] but the association has prompted advice for investigation and indeed intervention.[12-14] "Recurrent" episodes constituted an indication for delivery from 37 weeks of gestation in the intervention package of the recent trial showing no benefit.[15] The objectives of this study were to document the outcomes and interventions

in a contemporary of women presenting with RFM, and to determine increased the risk of adverse pregnancy and neonatal outcomes.

METHODOLOGY

This cross-sectional observational study was performed at Department of Obstetrics and Gynecology of the Jalalabad Ragib Rabeya Medical College Hospital. All single pregnancies at the hospital from January 2019 to December 2020 presenting with RFM after 22 gestational weeks were included in the cohort. Each visit in the department is given a diagnostic code and the cases were identified after the code for RFM. Pregnant woman presenting with RFM at the clinic were managed in accordance with local clinical guidelines. A cardiotocography (CTG) registration and an ultrasound to assess the amount of amniotic fluid and fetal movement were routinely performed. In cases where the CTG assessment (computerized analyses according to Dawnes-Redman criteria until 32 weeks of gestation and human analysis after that) was normal but no fetal movements were identified sonographically after repeated examinations, an additional ultrasound for fetal biometry or induction of labor was offered depending on gestational age (commonly after 40 weeks of gestation) of the pregnancy. Data on maternal characteristics, such as body mass index (weight in kg/height m2) at the beginning of pregnancy, parity, age, previous cesarean section, past illnesses, complications of pregnancy and data on pregnancy outcome, were collected from the maternal medical records. Information regarding the newborn, such as gender, birth-weight, Apgar scores at delivery, admission to neonatal ward and umbilical cord pH were retrieved from the delivery charts. The women included in the study were delivered during the study period or at the beginning of 2018. The majority was delivered at our clinic, but a small percentage was delivered in other hospitals in Jalalabad Ragib Rabeya Medical College Hospital,Sylhet. A composite for poor neonatal outcome was constructed and described as one or more of following: 5-minute APGAR score ≤7, arterial pH in the umbilical cord ≤7.10, transfer to neonatal ward for further care, intrauterine fetal death (IUFD).

RESULTS

The incidence of presentation with RFM during the study period was found 18%.

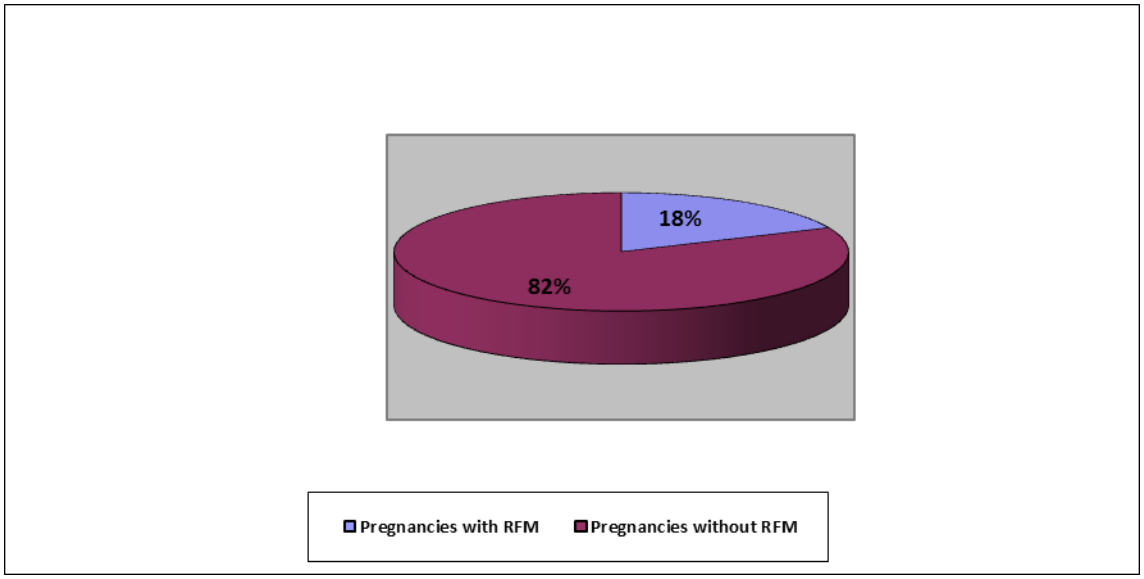

Figure 1: The incidence of presentation with RFM during the study period.

Table 1: Baseline data for group with reduced fetal movements (RFM) (n = 120) and the group with no RFM (n = 534) at Hospital.

Variables	Pregnancies with RFM N=120 (%)	Pregnancies without RFM n=534 (%)	P value
Maternal characteristics			
Age (y)	25.74(15-54)	23.96(16-52)	<0.01
BMI	23.6(16.32-48.0)	23.47(14.8-46.9)	<0.01
Smokers (%)	16 (13.3)	49(9.18)	0.24
History of psychiatric disease (%)	22(18.33)	67(12.55)	0.10
IVF	9(7.50)	31(5.81)	
Nullipara (%)	69(57.50)	240(44.94)	
Complications of pregnancy (%)b	7(5.83)	40(7.49)	

Single visit (%)	99(82.50)	0	
Multiple visits (%)	21(17.50)	0	
Onset of labor (%)			
Spontaneous	78(65.0)	369(69.1)	<0.01
Induced	28(23.33)	89(16.7)	
Planned cesarean	14(11.67)	76(14.23)	
Method of delivery			
Spontaneous vaginal	88(73.33)	396(74.16)	>0.05
Vacuum	8(6.7)	27(5.06)	
Cesarean (ES + AS)	25(20.83)	111(20.79)	
Gestational age (d)	164-303	160-300	<0.05
Birth weight (g)	2587.89 (735-4590)	2675.86(715-4670)	<0.05
Length (cm)	47.32(28-58)	48.39 (25-58)	0.12
Female gender (%)	60(50.0)	263(49.25)	0.11
SGA (%)	5(4.17)	18(3.37)	0.48

In current study observed that the maternal age, BMI, IVF, nullipara, Onset of labour, Gestational age, Birth weight and length (cm) were significant relation between pregnancies with RFM and pregnancies without RFM ($p < 0.05$).

Table 2: Neonatal outcomes for the group with reduced fetal movements (RFM) (n = 120) and the group with no RFM (n = 534) at Hospital.

Poor neonatal outcome score	Neonatal outcomes		RR (95% CI)	P value
	Pregnancies with RFM n=120	Pregnancies without RFM n=534		
	n(%)	n(%)		
APGAR ≤7 at 5 min (%)	5(4.17)	13(2.43)	1.3359(0.46 to 3.80)	0.58
Arterial pH ≤7.10 (%)b	8(6.7)	22(4.12)	1.66(0.72 to 3.83)	0.23
Neonatal ward (%)	4(3.3)	31(5.81)	0.55(0.19 to 1.61)	0.28
Stillbirth (%)	1(0.83)	2(0.37)	2.49(0.15 to 14.47)	0.72
Composite outcome (%)	12(10)	49(9.18)	1.09(0.56 to 2.13)	0.77

There was a more than twofold higher risk of stillbirth among women with RFM (1/120 [.83%] vs 2/534 [.37%], OR = 2.49, 95% CI 2.81-10.85).

DISCUSSION

In current study observed that the incidence of presentation with RFM during the study period was found 18%. Sterpu et al.[16] revealed that the incidence of presentation with RFM at the hospital was 21.4%, which is similar to newly published data from the UK.17 but considerably higher than previous studies.[17,18] This may be due to increased awareness both in pregnant women and in the healthcare givers.

In current study observed that the maternal age, BMI, IVF, nullipara, Onset of labour, Gestational age, Birth weight and length (cm) were significant relation between pregnancies with RFM and pregnancies without RFM. Kapaya et al[1] patients who presented with more than one episode of RFM were 1.5 years younger ($P < 0.001$), 0.5 kg/m2 heavier ($P = 0.002$), nulliparous ($P = 0.046$) and 6.3 % higher in the control group ($P = 0.015$) than those with one episode of RFM. They observed a 4.6 % increase in the number of smokers in the cohort of women who attended with more episodes of RFM compared to those with one episode ($P = 0.017$). An 11.2 % rise in the IOL rate ($P < 0.001$) and a high proportion (57.4 %) of USS were requested for women with repeated episode of RFM. Kapaya et al[1] The prevalence of RFM increased by 10 %, gestational age (GA) at the onset of RFM decreased by 1.5 weeks ($P < 0.001$) and GA at delivery reduced by 0.3 weeks ($P = 0.006$) between the first and the second audit. Maternal age, parity, smoking status, body mass index (BMI), ethnicity, proportion of patients who had an USS, GA at delivery and IOL showed a significant association with repeated episodes of RFM. Kapaya et al.[1] finding that SGA is not more common in women with recurrent RFM than those with single episode RFM is at odds with O'Sullivan et al.[19] and with Scala et al.[20] who found a higher proportion of SGA in women complaining of multiple episodes of RFM (44.2 % vs 9.8 %). **Bhatia et al.** finding that SGA is not more common in women with recurrent RFM is at odds with O'Sullivan et al,[21] and with Scala et al, who found a far higher (44.2% vs 9.8%)

proportion of SGA (unstated reference chart) babies in the multiple episodes group.[22]

In this study observed that there was a more than twofold higher risk of stillbirth among women with RFM (1/120 [.83%] vs 2/534 [.37%], OR = 2.49, 95% CI 2.81-10.85). similar observation was found Norman et al.[23] they showed the incidence of stillbirth was 4·40 per 1000 births during the control period and 4·06 per 1000 births in the intervention period (adjusted odds ratio [aOR] 0·90, 95% CI 0·75–1·07; p=0·23).This is at odds with O'Sullivan et al, who, using a cohort of 203 women with RFM, showed that when compared with 1 episode, women with 2 or more episodes had an increased odds ratio (OR 1.92; 95% CI 1.21-3.02) of their adverse pregnancy outcome.[21]

CONCLUSION

In conclusion maternal age, BMI, IVF, nullipara, Onset of labour, Gestational age, Birth weight and length (cm) were significantly higher in RFM pregnancy than without RFM group. More than two fold higher risk stillbirth in RFM pregnancy group than controls.

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