

Original article

Clinical profile and incidence of preterm birth in mothers with decreased perception of fetal movements: Our experience from KIMS, Hubballi, Karnataka

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Abstract

Introduction: Research has shown that fetal movements are affected by many factors including amniotic fluid volume, placental location, fetal presentation, and fetal gender. Maternal factors could influence fetal movements; in different studies maternal smoking, primiparity, obesity and acute exercise were associated with DFM.

Objectives: To study the clinical profile and incidence of preterm birth in mothers with decreased perception of fetal movements

Methodology: The present Descriptive observational study was carried out at Department of OBGY, KIMS, HUBBALLI involving 136 cases that selected from patients presenting to KIMS hospital, OPD section and Labour room considering the inclusion and exclusion criteria from January 2021 to June 2022

Results: Majority were from 21-25 years age group i.e. 59(43.4%). History of absent fetal movements was reported by 21(15.4%) of ANC women in our study. Prevalence of antenatal risk factors in our study was 55.9%. Preeclampsia/PIH was found as major risk factor in 28 (20.6%). Incidence of preterm delivery in our study was 30.1%.

Conclusion: Incidence of preterm delivery in our study was 30.1%. Incidence of low birth weight in our study was 41.2%. Prevalence of antenatal risk factors in our study was 55.9%. Prevalence of abnormal biophysical profile was 89%.

Key words: *incidence of preterm birth, decreased perception of fetal movements*

Introduction

Pregnancy is considered as a very precious event in every women's life. It is filled with happiness, joy and surprises. Every parent's hopes for a healthy baby, but may sometimes become sorrowful when danger sets in either to the mother or to the foetus. Pregnancy links mother and foetus together and is the basis for regeneration and the generation. In high-risk pregnancies the mother may sometimes escape death but foetus and neonates often become the victim.¹

During the past decades there has been significant improvement in obstetrics in achieving the antenatal surveillance of high-risk pregnancy. Since above 75 percent of foetal death occur in the ante partum it is obvious that limiting foetal surveillance to intrapartum period will not achieve optimal perinatal outcome. To be clinically useful ante partum test should be readily available, easy to perform, consistently reproducible, cost effective, easy to interpret and reliable, so that appropriate intervention can be undertaken when necessary. Assessing of foetal wellbeing by monitoring foetal movement count by antenatal mothers fulfils all the above criteria. Process of birth is the most dangerous journey an individual undertakes. A healthy new born is the goal of every expectant mother and her physician. ¹

Maternal counting of fetal movement is an easy, inexpensive and valuable screening tool for fetal well-being that increases maternal-fetal bonding. Sensation of decreased fetal movement (DFM) is a common problem among pregnant women; in Norway, as many as 51% of women report that they were concerned about DFM once or more in pregnancy. Only 4 - 15% of pregnant women contact care providers with such concerns. ²

Some studies indicated that women presenting with DFM are at increased risk of stillbirth, fetal growth restriction, fetal distress and preterm birth. ^{2,3} Assessment of fetal wellbeing by counting fetal movements in many studies was associated with a decrease in perinatal mortality and morbidity because a mother's reaction to DFM assists in the identification of high-risk fetuses when it might be possible to save the baby's life. ⁴ Some studies argued that DFM is not a useful screening tool and that it has a high failure rate. ⁵

Research has shown that fetal movements are affected by many factors including amniotic fluid volume⁶, placental location⁷, fetal presentation⁸, and fetal gender.⁹ Maternal factors could influence fetal movements; in different studies maternal smoking, primiparity, obesity and acute exercise were associated with DFM. ^{7,10}

Objectives

To study the clinical profile and incidence of preterm birth in mothers with decreased perception of fetal movements

Materials and Methods

Study setting: Department of OBGY, KIMS, HUBBALLI

Study population: Cases will be selected from patients presenting to KIMS hospital, OPD section and Labour room considering the inclusion and exclusion criteria.

Study period: January 2021 to June 2022

Study design: Descriptive observational study

Sample size: Sample size for our study was 136

Sampling technique: Simple Random sampling method

Inclusion criteria:

- Primigravida and multigravida >28 weeks
- Willing to participate in the study after written consent

Exclusion criteria:

- Detected fetal anomaly
- Detected Intrauterine fetal demise
- Multiple pregnancy
- Medical disorders-Thyroid disorders, Diabetes mellitus
- Patients who did not deliver in hospital

Variables used in study: Age, gravida, maternal and fetal outcome, etc.

Methods of data collection:

A detailed history was recorded including antenatal risk factors (like GDM, HTN, Obstetric cholestasis, Anaemia, history of smoking, alcohol, sedative intake), time since onset of decreased fetal movements, pattern of less movement (frequency/intensity, or both). General physical and obstetrical examinations were performed. Women reporting decreased fetal movements were asked to keep an account of fetal movement for next 2 hours while resting in left lateral decubitus. CTG was performed within 2 hours at least for 20 minutes and result was interpreted according to NICE guidelines.

Women showing pathological or suspicious CTG was delivered immediately. Others were investigated for complete hemogram, OGTT, LFT, TSH and routine urine evaluation. A detail USG with Doppler study follows to record AFI, placental location and grading, exact fetal maturity and EFW, BPP (Manning score), umbilical artery S/D ratio. If all the parameters were within satisfactory limits and maternal record of fetal movements for 2 hours showed at least 10 fetal movements, mothers were discharged and follow up were done during delivery. Mode of delivery and neonatal outcome regarding birth weight, Apgar scoring, NICU admission necessities were taken into account.

Statistical analysis:

Data was collected by using a structure proforma. Data entered in MS excel sheet and analysed by using SPSS 24.0 version IBM USA. Qualitative data was expressed in terms of proportions. Quantitative data was expressed in terms of Mean and Standard deviation. Association between two qualitative variables was seen by using Chi square/ Fischer's exact test. Descriptive statistics of each variable was presented in terms of Mean, standard deviation, standard error of mean.

A p value of <0.05 was considered as statistically significant whereas a p value <0.001 was considered as highly significant.

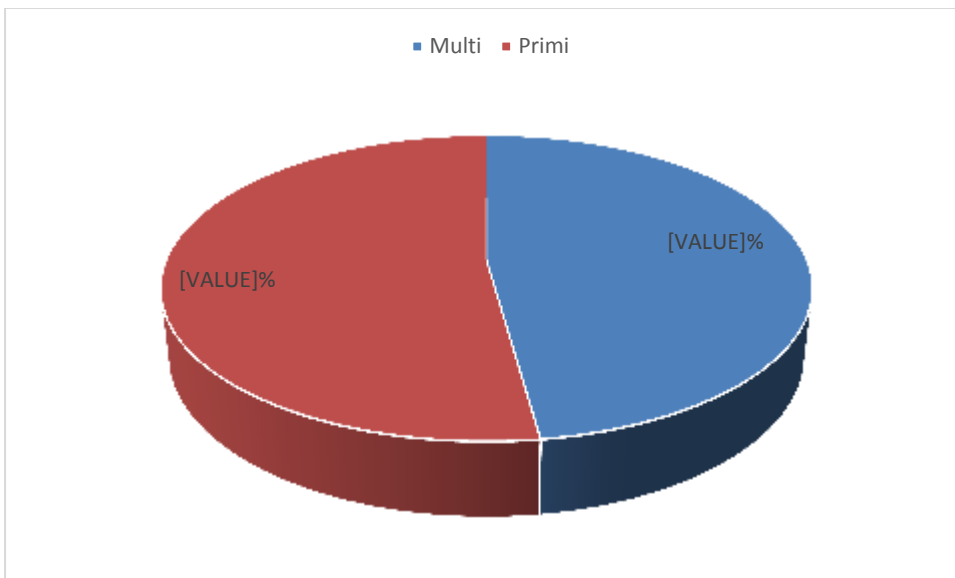
Results

Table 1: Distribution according to age group

| | | Frequency | Percent |
|--------------------|-------|-----------|---------|
| Age group in years | ≤ 20 | 15 | 11.0 |
| | 21-25 | 59 | 43.4 |
| | 26-30 | 44 | 32.4 |
| | 31-35 | 17 | 12.5 |
| | 36-40 | 1 | 0.7 |
| | Total | 136 | 100.0 |

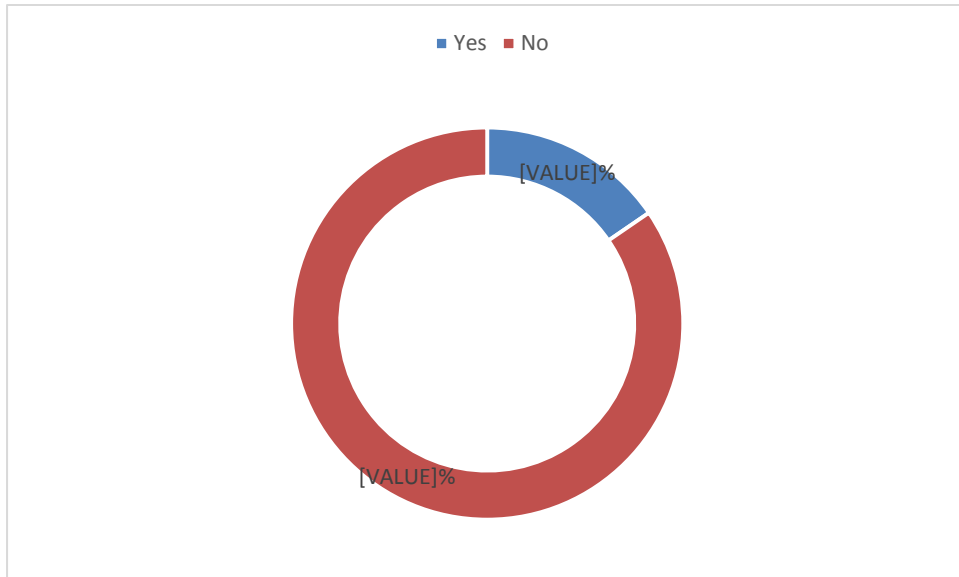
We included total 136 primigravida and multigravida >28 weeks in our study. Out of 136 women, majority were from 21-25 years age group i.e. 59(43.4%), followed by 44(32.4%) from 26-30 years, 17(12.5%) from 31-35 years, 15(11%) from less than 20 years and least i.e. 1(0.7%) from 36-40 years age group.

Figure 1: Pie diagram showing Distribution according to gravida status



52.2% were primi and 47.8% were multipara in our study.

Figure 2: Pie diagram showing Distribution according to history of absent fetal movement in previous pregnancy



History of absent fetal movements was reported by 21(15.4%) of ANC women in our study.

Table 2: Prevalence of antenatal risk factors

| | | Frequency | Percent |
|------------------------|---------|-----------|---------|
| Antenatal risk factors | Present | 76 | 55.9 |
| | Absent | 60 | 44.1 |
| | Total | 136 | 100.0 |

Prevalence of antenatal risk factors in our study was 55.9%

Table 3: Distribution according to maternal risk factors

| | | Frequency | Percent |
|-----------------------|------------------|-----------|---------|
| Maternal risk factors | GDM | 9 | 6.6 |
| | Anaemia | 21 | 15.4 |
| | Preeclampsia/PIH | 28 | 20.6 |
| | Hypothyroidism | 17 | 12.5 |
| | Obesity | 6 | 4.4 |
| | Short stature | 3 | 2.2 |

Maternal risk factors in our study are as follows: Preeclampsia/PIH in 28 (20.6%), Anaemia in 21 (15.4%), Hypothyroidism in 17 (12.5%), GDM in 9 (6.6%), Obesity in 6 (4.4%) and short stature in 3 (2.2%).

Table 4: Distribution according to location of placenta

| | | Frequency | Percent |
|----------------------|-----------------|-----------|---------|
| Location of placenta | Anterior | 53 | 39.0 |
| | Fundal | 18 | 13.2 |
| | Fundo anterior | 3 | 2.2 |
| | Fundolateral | 6 | 4.4 |
| | Fundo posterior | 4 | 2.9 |
| | Lateral | 21 | 15.4 |
| | Posterior | 30 | 22.1 |
| | Right lateral | 1 | 0.7 |
| | Total | 136 | 100.0 |

USG findings revealed location of placenta as follows: anterior in 53 (39%), posterior in 30 (22.1%), lateral in 21 (15.4%), fundal in 18 (13.2%), fundolateral in 6 (4.4%), fundo-posterior in 4 (2.9%), fundo-anterior in 3 (2.2%) and right lateral in 1 (0.7%).

Table 5: Incidence of preterm births

| | | Frequency | Percent |
|-----------------------|---------|-----------|---------|
| Preterm/Term delivery | Preterm | 41 | 30.1 |
| | Term | 95 | 69.9 |
| | Total | 136 | 100.0 |

Incidence of preterm delivery in our study was 30.1%.

Discussion

Demographic information

We included total 136 primigravida and multigravida >28 weeks in our study. Out of 136 women, majority were from 21-25 years age group i.e. 59(43.4%), followed by 44(32.4%) from 26-30 years, 17(12.5%) from 31-35 years, 15(11%) from less than 20 years and least i.e.

1(0.7%) from 36-40 years age group. 52.2% were primi and 47.8% were multipara in our study. Mean age of the study population was 26.21±4.51 years.

Saastad E et al¹¹ in his study reported maternal age group of less than 35 years in 82% cases and above 35 years in 18% cases. 49.5% were primipara.

Winje BA et al¹² in his study reported maternal age group of less than 35 years in 85.3% cases and above 35 years in 14.7% cases. 61.2% were primipara.

Sheikh M. et al¹³ included total of nine hundred twenty-nine pregnant women in the study, of which two hundred were excluded and the mean ± standard deviation (SD) for the maternal age was 28.5 ± 5.1 years; for gestational age 31.5 ± 5.3 weeks.

McCarthy CM et al¹⁴ in his study reported maternal age group of less than 35 years in 31.5% cases and above 35 years in 69.5% cases.

Nandi N. et al¹⁵ in his study reported 12% from <20 years, 73% from 21-30 years and 15% from above 30 years age group.

A perception of DFM was reported more often by older mothers and by those who felt the first fetal movements later than the other participants. In the study conducted by **Sheikh M. et al¹⁴** this perception was not independent of other maternal factors. In their study of maternal awareness of fetal movements, **Saastad E et al¹¹** indicated that maternal age ≥ 34 years was associated with a low awareness of fetal activity, but this did not affect the risk of being concerned or being examined.

Maternal risk factors

Prevalence of antenatal risk factors in our study was 55.9%. Maternal risk factors in our study are as follows: Preeclampsia/PIH in 28 (20.6%), Anaemia in 21 (15.4%), Hypothyroidism in 17 (12.5%), GDM in 9 (6.6%), Obesity in 6 (4.4%) and short stature in 3 (2.2%). Prevalence of abnormal biophysical profile was 89%.

Saastad E et al¹¹ in his study reported prevalence of antenatal risk factors as 7.5% which is less as compared to our findings.

Sheikh M. et al¹⁴ in his study reported the maternal risk factors like 8 were smokers or used opiates, 36 had diabetes, 50 had hypertension, 13 had a fetal anomaly, 28 had multiple gestations and 65 gave birth to a preterm and/or SGA newborn.

Nandi N. et al¹⁵ in his study reported that thirty-nine (48.75%) women from study group had at least one antenatal risk factor which is consistent with our findings. Fifteen women from the study group (18.75%) had multiple antenatal risk factors, whereas in control group only 3 (3.75%) mothers had multiple risk factors which is statistically significant (p value 0.0026).

Decreased fetal movement (DFM)/ reduced fetal movement (RFM)

History of absent fetal movements was reported by 21(15.4%) of ANC women in our study. Mean Duration of RFM was 48.00±18.48 hours.

Nandi N.et al¹⁵ in his study reported that 46% women reported for decreased frequency as well as intensity of fetal movements.

Conclusion

Incidence of preterm delivery in our study was 30.1%. Incidence of low birth weight in our study was 41.2%. Prevalence of antenatal risk factors in our study was 55.9%. Prevalence of abnormal biophysical profile was 89%.

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