Daily Fetal Movement Count Chart: Reducing Perinatal Mortality in Low Risk Pregnancy

Lt Col G Singh*, Maj K Sidhu+

Abstract

Background: A reduction or cessation of fetal movements (FMs) is frequently reported by pregnant women resulting in anxiety and concern. Formal counting of FMs by the pregnant woman could possibly identify the fetuses at risk.

Methods: A prospective study was carried out over 500 booked cases after introducing daily fetal movement count (DFMC) Chart in the ninth month of pregnancy. Prior ultrasound (USG) was done in all cases. DFMC chart was used to record number of fetal movements perceived by patient for one hour after food (breakfast, lunch, dinner). Fetal movements were considered satisfactory if the count was three or more on each occasion.

Result: During the study period, no fetus was lost after introduction of DFMC chart in the 250 cases that were given DFMC chart and delivered in our hospital (Nil perinatal mortality). This was compared with 250 booked cases that were not given DFMC chart but had normal ultrasound done after completion of eight months of pregnancy and followed up. Five intrauterine deaths occurred in the ninth month in control group (2% perinatal mortality). In the DFMC chart group, 15 patients were admitted with decreased fetal movements. Out of these, 12 were discharged after monitoring for three days and three cases were delivered.

Conclusion: DFMC chart in ninth month of pregnancy helps in identifying at risk fetus in low risk pregnancies in absence of any other adverse factors necessitating early delivery.

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Key Words: Daily fetal movements count chart (DFMC); Perinatal mortality; Intrauterine death

Introduction

The predominant goal of ante partum fetal monitoring is to reduce perinatal morbidity and mortality rates. At present, the beneficial effects of ante partum testing have created a situation in which the likelihood of fetal death in high-risk, tested populations is lower than that in low-risk, untested populations. This paradox has forced us to consider the option of routine ante partum monitoring in all pregnancies.

Various methods have been described to quantify the fetal movements to predict fetal well-being, which include use of a cardiotocograph, visualization with real time ultrasound and maternal subjective perceptions. Most investigators have reported excellent correlation between maternally perceived fetal motion and movement documented by instrumentation. Although several fetal movement counting protocols have been used, neither the optimal number of movements nor the ideal duration of counting them has been defined. A particularly bothersome clinical situation occurs when women present in the third trimester with a chief complaint of decreased fetal movement. Others have concluded that informal maternal perceptions were as good as formally counted and recorded fetal movement but the evidence of a clinical benefit is limited [3].

Material and Methods

The study group of 250 pregnant women underwent ultrasonography (USG) study and then they were given daily fetal movements count (DFMC) charts (Fig. 1) at the end of eight months of pregnancy. They were given routine antenatal care and delivered at term. Their outcome was compared with the control group of 250 pregnancies who were not given DFMC charts after USG screening. The patients who reported with loss of or reduced fetal movements were admitted and observed. Reduced fetal movement was defined as less than three fetal movements in one hour after taking food.

Results

Out of the 250 patients in the study group (DFMC group), 15 were admitted for loss of fetal movements. They were screened by USG and nonstress test (NST) and 12 were discharged after they started having satisfactory fetal movements. Three patients had persistent reduced fetal movements and they were delivered vaginally.

Out of the control group, eight patients were admitted with loss of fetal movements in ninth month though they had...
DFMC Chart - Reducing Perinatal Mortality in Low Risk Pregnancy

Table 1

<table>
<thead>
<tr>
<th></th>
<th>DFMC chart group n=250</th>
<th>Control group n=250</th>
<th>Chi Square value</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intrauterine deaths</td>
<td>0.0</td>
<td>5 (2.00%)</td>
<td>5.0505</td>
<td>≤ 0.025**</td>
</tr>
<tr>
<td>Admissions with loss of fetal movements</td>
<td>15 (6.0%)</td>
<td>8 (3.20%)</td>
<td>2.2331</td>
<td>≤ 0.2</td>
</tr>
<tr>
<td>No of mothers with live fetuses with loss of movements</td>
<td>15 (6.0%)</td>
<td>3 (1.20%)</td>
<td>8.0530</td>
<td>≤ 0.01**</td>
</tr>
</tbody>
</table>

** Significant movements is considered a warning signal [6]. If the test result is not reassuring, the patient should be evaluated with NST and USG [4].

In this study, we found that fetal mortality reduced from 20.4 per 1000 live births in control group to nil in study group. Though this was a small study, the results are statistically significant. It is clear that complaints of decreased fetal movement are significant and warrant further evaluation [6]. The Society of Obstetrician and Gynecologists of Canada has recommended that DFMC could be used in cases identified to be at risk for fetal asphyxia [7].

Conflicts of Interest

None identified

Intellectual Contribution of Authors

Study Concept: Lt Col G Singh
Drafting & Manuscript Revision: Lt Col G Singh, Maj K Sidhu
Study Supervision: Lt Col G Singh

References