

FOETAL ACTIVITY DETERMINATION AS A PARAMETER FOR FOETO-PLACENTAL WELLBEING†

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Obstetrics has changed over the years. Foetal well being has taken a major role in the management of high risk pregnancy. There is a varied availability of tests to evaluate foetal well being. These are:

- Estimation of urinary oestriol in a 24 hour sample
- Human placental lactogen in blood
- Amniotic fluid oestriol
- Oxytocin challenge test

These and other tests help one to foretell foetal jeopardy.

The movements of the foetus in utero are an expression of foetal well being. They depend mainly on the vascular state of the placenta. In cases of foetal risk due to chronic placental insufficiency, foetal movements show an appreci-

able decrease as felt by the patient.

It is well known that intrauterine foetal movements are felt by the mother in about the 5th month of pregnancy and are a positive indication of foetal life.

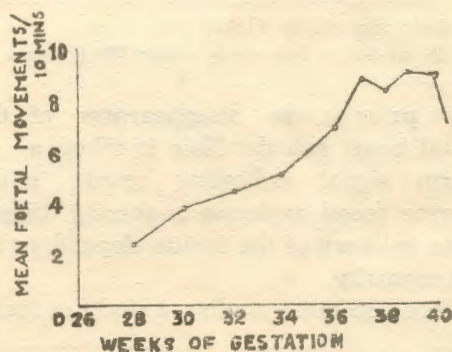


Fig: 1

Sadovsky's (1974) study showed that foetal movements increase from the 29th to the 38th week of pregnancy and then decrease until delivery. In our study, the foetal movements are seen to increase upto 37 weeks and decrease after 39 weeks upto delivery.

Each foetus has its own rhythm and rate of movements. Perception of foetal

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movements by the mother depends on her subjective reaction to them. There could be an error of judgement on the part of the pregnant woman but it has been shown by Sadovsky (1973) 87% of the movements detected by an electromagnetic device are appreciated by the mother.

It is seen that in some circumstances, the maternal history of decreased foetal activity provides a good index of impending foetal jeopardy in utero.

Rovinsky and Guttmacher (1965) observed that before foetal death in utero due to chronic causes, there is a definite decrease in foetal movements or a cessation of foetal movements, one to a few

patients have been followed from the second trimester upto delivery and their outcome noted.

Patients were selected at random, at the antenatal OPD at the Nowrosjee Wadia Maternity Hospital, provided they understood and accepted what was required of them. Each of the patients were told—

(1) To lie down in the left lateral position for 10 minutes in the morning, afternoon and evening.

(2) To count the number of foetal movements they appreciated during this time.

(3) To record the same on the given data form.

Evaluation of diurnal foetal movements at 38 weeks and comparative study with Sadovsky—January 1977

	Number of foetal movements		
	Morning	Noon	Evening
In Sadovsky study (1977)	23.5	30.5	32.7
At 38 weeks in our study mean/100 patients	7.6	7.3	8.9

days prior to the disappearance of the foetal heart sounds. This is taken as an alarm signal indicating severe intra-uterine foetal asphyxia requiring immediate delivery of the foetus, depending on the maturity.

Based on these studies, a study of foetal

Evaluation of diurnal foetal movements at 38 weeks and comparative study with Sadovsky (1973) showed that the daily foetal movements increased in number from morning to evening. There was no appreciable difference found between the primi and multigravida.

Outcome of labour— 100 cases	Normal foetal movements—76			Decreased foetal movements—24		
	Total	Apgar 8 and above	Apgar Less than 8	Total	Apgar 8 and above	Apgar Less than 8
Normal delivery	66	55	11	21	5	16
LSCS	5	2	3	2	1	1
Forceps	4	2	2	—	—	—
Stillbirth	1	—	—	1	—	1

activity in patients in the second and third trimesters was conducted. The same

Out of 100 patients it was found that 76 showed normal serial foetal activity and

24 showed decreased foetal activity. Of the 76 patients that showed normal foetal activity, 66 had a normal vaginal delivery of which 11 had an Apgar of less than 8 which was mainly due to cord compression in one and prolonged labour, or both. Five were sectioned, 3 of whom showed an Apgar less than 8. One of these had an LSCS done in early labour for previous LSCS with cephalopelvic disproportion, difficulty was encountered in delivery of the baby during caesarean section. The other 2 were being given a trial of labour for moderate cephalopelvic disproportion. The 2 that had an Apgar of more than 8 were sectioned early in labour for previous LSCS with cephalopelvic disproportion. Four were delivered by forceps of which 2 had an Apgar less than 8 both of which had prolonged second stage. One was a fresh still birth, the patient had an accidental haemorrhage. (Where there was no obvious cause for accidental haemorrhage except for the presence of a short cord of 25 cm).

Of the 24 in the category of decreased foetal movements, 18 had an Apgar for less than 8.

The parameters that were taken into consideration in these patients were, Apgar score less than 8, small for date babies, Meconium stained liquor, placental infarcts (4th).

Detailed Analysis of Patients With Decreased Foetal Movements

Apgar less than 8	Small for dates	s/o foetal distress	Placental infarcts
18 (70.5)	12 (50%)	18 (70.5%)	20 (83.3%)

A detailed analysis of the 24 patients that showed decreased foetal movements is, 70.05% had an Apgar of less than 8,

50% of the babies were small for dates, Meconium stained liquor was found in 70.5%, 83.3% showed placental infarcts.

Of these it was found that 12 had all the above 4 factors present, Elven had normal deliveries and 1 still birth. An elderly patient with BOH came with history of 28 weeks of amenorrhoea and diminished foetal movements. She was admitted for IUGR and investigated. After 15 days she went against medical advice and came back at 32nd week of pregnancy and delivered a macerated still birth.

Six had three factors present—(Apgar less than 8)

meconium stained liquor, placental infarcts, baby weight more than 2 kg,	5 had normal vaginal deliveries, 1 caesarean section for severe foetal distress
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Four showed no evidence of foetal jeopardy- of which 3 had normal delivery, 1 LSCS for previous caesarean section.

In 2 of the babies solitary factor of placental infarcts was seen, both of which delivered normally.

This is an entirely subjective test. It is important to note that, like any other test this test has no value if not serially done. But its value is surpassed especially in rural areas where sophisticated gadgets are not continuously available to the clinician. Acute foetal distress as for example, due to abruptio placentae and cord compression sidesteps the effectiveness of this test.

Thus evaluating F.A.D. or foetal activity determination, we feel that it is not a mere fad but a reliable, simple and easily available test to be studied and utilized, with other accepted parameters.

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