

## VARIABLES IN FOETAL KICK COUNT

By

S. CHHABRA AND SANDEEP JESTE

### SUMMARY

A systematic approach in the study of foetal activity has shown that the mother appreciates about 87% of movements made by the foetus. There are some variables which affect foetal kick count. In our study of 120 patients, it was observed that foetal kick count was less in primigravidae. We found that activity was maximum between 32 to 34 weeks and after 37 weeks there was a definite decrease. There was diurnal variation. Mothers having shorter babies had higher kick counts. Hence Foetal kick counts should be judged on individual basis.

A systematic approach in the study of foetal activity has shown that the mother appreciates about 87% of movements made by the fetus (Sadovsky *et al* 1974). The range of fetal movements seems to be constant for individual patients (Garg *et al* 1985). Ehstrom (1976) observed daily fetal movements count to range from 10 to 1646/12 hours. There are some variables, which affect Foetal Kick Count. We endeavoured to find out the relationship with some of the variables which affect foetal kick count.

#### Material and Methods

One hundred and twenty patients between the age group of 21 to 30 years and gestation of 30-31 weeks were selected from antenatal clinic of Department of Obstetric and Gynaecology of MGIMS Sevagram. They were all booked for deli-

very. Complete history was taken and examination and investigations were carried out. Each mother was asked to record perceived foetal movements from 32nd week onwards for a total period of 12 hrs from 9 A.M. to 9 P.M. on the first day of the week followed by 3 hours per day, one hour each from 8 A.M. to 11 A.M. in the morning 1 to 4 P.M. in the afternoon and 6 P.M. to 9 P.M. in the evening. Apart from education/instruction as to what constitutes the foetal movement was left to the mother.

#### Observations

Out of 120 patients 12 cases (10%) could not be included in the study for various reasons (lost the card, did not turn up etc). So final study included 108 patients. 70 (64.81%) were from urban area and 38 (35.18%) from rural. All were literate. Ten (9.26%) were working women. Fifty patients were primigravida and the rest between second to 4th gravida. About 24.07% had bowel

From: Dept. of Obst. & Gyn. and F.W.P.  
MGIMS, Sevagram, Wardha, Maharashtra India.  
Accepted for publication on 22-6-89.

problems. Mean number of foetal movements perceived by primigravidae were significantly less as compared to multigravidae (Table I). Foetal kick count was more in evening as compared to morning times. As the gestation advanced beyond 37 weeks there was a decline in foetal movements felt at all times of the day (Table II). Mothers with constipation felt less movements as compared to mothers with normal bowel movements however it was not statistically significant (Table III).

Foetal movements had no relationship with either Bishop's score at onset of labour or with first and second stages of labour. Mothers with female babies felt less movements as compared to male babies but this was not statistically signi-

ficant. Mothers with shorter babies had significantly more movements as compared to longer babies (Table IV).

#### Discussion

It appears that foetal kick count should be judged by individual record as every fetus has its own rhythm. Although the over all range is wide it is constant for the individual patient. Some variables may be affecting the foetal movements and their perception and so they should be kept in mind while evaluating this method of foetal monitoring. In our study we found that in primigravidae foetal kick count was less as compared to multigravidae as is evident from the table, may be muscle tone really affects

TABLE I  
*Foetal Movements in Relation to Gravidity*

Gravidity	Number of cases	* MFM/hrs.	* MFM/12 hrs.	MFM/week
C 1	54 (50%)	3.71	41.92	532.2
G 2—G 4	54 (50%)	10.24	49.06	719.97

\* MFM—Mean Foetal Movement.

TABLE II  
*Foetal Movements in Relation to Gestation and Time of the Day*

Gestation	Assessed range/day	Time of the day	* MFM
32-37 weeks	1-219	Morning	85.71
38-40 weeks	1- 95	Noon	110.67
41 weeks	1- 34	Evening	34.61

\* MFM—Mean Foetal Movement.

TABLE III  
*Foetal Kick Count in Relation to Bowel Problem*

	No. of cases	* MFM/hrs.	* MFM/hrs. 12	* MFM/weeks
Constipated	25 (24.07%)	3.86	38.14	648.48
Non constipated	82 (75.93%)	4.25	51	714.00

\* MFM—Mean Foetal Movement.

TABLE IV  
Foetal Kick Count in Relation to Sex and Length of the Foetus

Sex	No.	* MFM/hrs.	* MFM/12 hrs.	* MFM/weeks
Male	50 46.30%	4.91	51.77	712
Female	58 53.70%	3.40	38.95	683
Length				
< 50 cms.	72 67.59%	6.14	63.00	915.7
> 50 cms.	36 32.41%	3.89	44.3	564.5

\* MFM—Mean Foetal Movement.

the foetal activity or the perception is not there because of a problem of familiarity. However, the difference is not statistically significant (Wood *et al* 1977). In our patients we found that mean activity was maximum between 32 to 34 weeks and after 37 weeks there was a definite decrease. Wood and others also found the same. It is, probably related to the ratio of foetal size and (Length-weight) liquor amnii and foetal sleep. Mean number of movements felt in evening was significantly more than morning. This is consistent with others like Wood *et al* (1977). It could be because of relaxed attitude of mother or it may have something to do with quiet phase of foetus. Using tocodynametry Rosen and associates (1979) and Timor Tritsch and associates (1978) have classified fetal behaviour states into quiet and active periods. Male and female babies did not show significant difference in the number of kicks. However they were more with male babies as one would think possible (Rayburn 1982). There was a statistically significant increased kick count in cases of shorter babies as compared to longer one. It appears that accommodation in the uterine cavity affects foetal

activity as shorter babies get more space in comparison to longer ones.

#### Summary and Conclusions

From this study we can believe that foetal kick-count differs normally from patient to patient. There are some variables which influence foetal movements even in normal conditions. This method of antepartum foetal surveillance should be used on individual basis.

#### Acknowledgements

Our sincere thanks to all the patients without whose help this study would not have been possible and to all others who have helped us.

#### References

1. Ehstrom, C.: Acta Obstet. Gynec. Scand. Supp. 80, 1979.
2. Garg, R., Khosla, A. Saxena, M. *et al*: 1985, Bombay.
3. Rayburn, W. F.: Clinical implications from monitoring fetal activity. Am. J. Obstet. Gyne. 144: 967, 1982.
4. Rosen, M. G., Dierker, L. J. Hertz, R.

et al: Fetal behavioural states and fetal evaluation. *Clini. Obstet. Gynec.* 22: 605, 1979.

5. Sadovsky, E., Yaffe, N. and Polishuk, W. Z.: *Int. J. Gynec. Obstet.* 12: 75, 1974.

6. Timor Tritsch, T. E., Dierker, L. J. and

Hertz, R. H. et al: Studies of antepartum behavioural state in the human fetus at term. *Am. J. Obstet. Gynec.* 132: 524, 1978.

7. Wood, C., Walters, W. A. W. and Trig, P.: Method of recording fetal movement, *B.J. Obstet. Gynec.* 84: 561, 1977.