Comparative Study of Biophysical Scoring System

U. K. Ghosh, D. Sharma, R. Narain, K. Mukherjee, R. Baveja, R. Mehrotra

Department of Obstetrics & Gynaecology, M.L.N. Medical College, Allahabad

Summary

One hundred and twenty six high risk antenatal women underwent biophysical scoring by the methods described by Vintzeleos et al (1983) and Shah et al (1989) to determine the predictive efficacy of each scoring system so far as fetal outcome was concerned, which was determined by 5 minute Apgar Score, and development of fetal distress in the intranatal period. The sensitivity and specificity of scoring method of Vintzeleos et al (1983) was 95% and 53% respectively. The sensitivity of Shah et al (1989) method was 88% and specificity was 27%. It is suggested that the predictive value of Vintzeleos et al (1983) is better than Shah et al (1989) so far as fetal outcome is concerned.

Introduction

Antenatal forecast of fetal health is one of the most difficult and demanding aspect of pregnancy management. Great difficulty is experienced in clinical situations due to non conformatory pattern of clinical symptom and signs.

Antenatal assessment of fetal risk based on observation of biophysical activity rests on the principle that the more complete the development of the fetus, its activities and its environment, the more accurate may be the differentiation of fetal health from disease state.

The nervous impulses that initiate different fetal biophysical activities arise from different anatomic sites within the brain. The nervous tissue function is highly sensitive to hypoxaemia. It seems reasonable to assume that when a coordinated complex fetal biophysical activity is observed, the central nervous system is not hypoxaemic.

Factors that suppress the central nervous system activity in the fetus may reduce or abolish fetal biophysical activities.

The present study was conducted to have a comparative assessment of two different biophysical scoring systems enunciated by Vintzeleos et al (1983) and Shah et al (1989) respectively.

Material and Methods

The present study was undertaken on 126 antenatal women with high risk factors beyond 32 weeks of pregnancy. Women with multiple gestation and major fetal congenital anomaly were excluded from the study. Detailed history and examination findings were recorded for each patient. Each women underwent at least a pair of biophysical scoring by the method suggested by (a) Shah et al (1989) and (b) Vintzeleos et al (1983). Each women was followed up till delivery. Fetal outcome was measured by 5 minute Apgar score.

In the present study an arbitary division into favourable and unfavourable score were assigned