PRE-AND INTRAPARTUM RISK FACTORS BEFORE HOSPITAL ADMISSION

T H E S I S

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B Y

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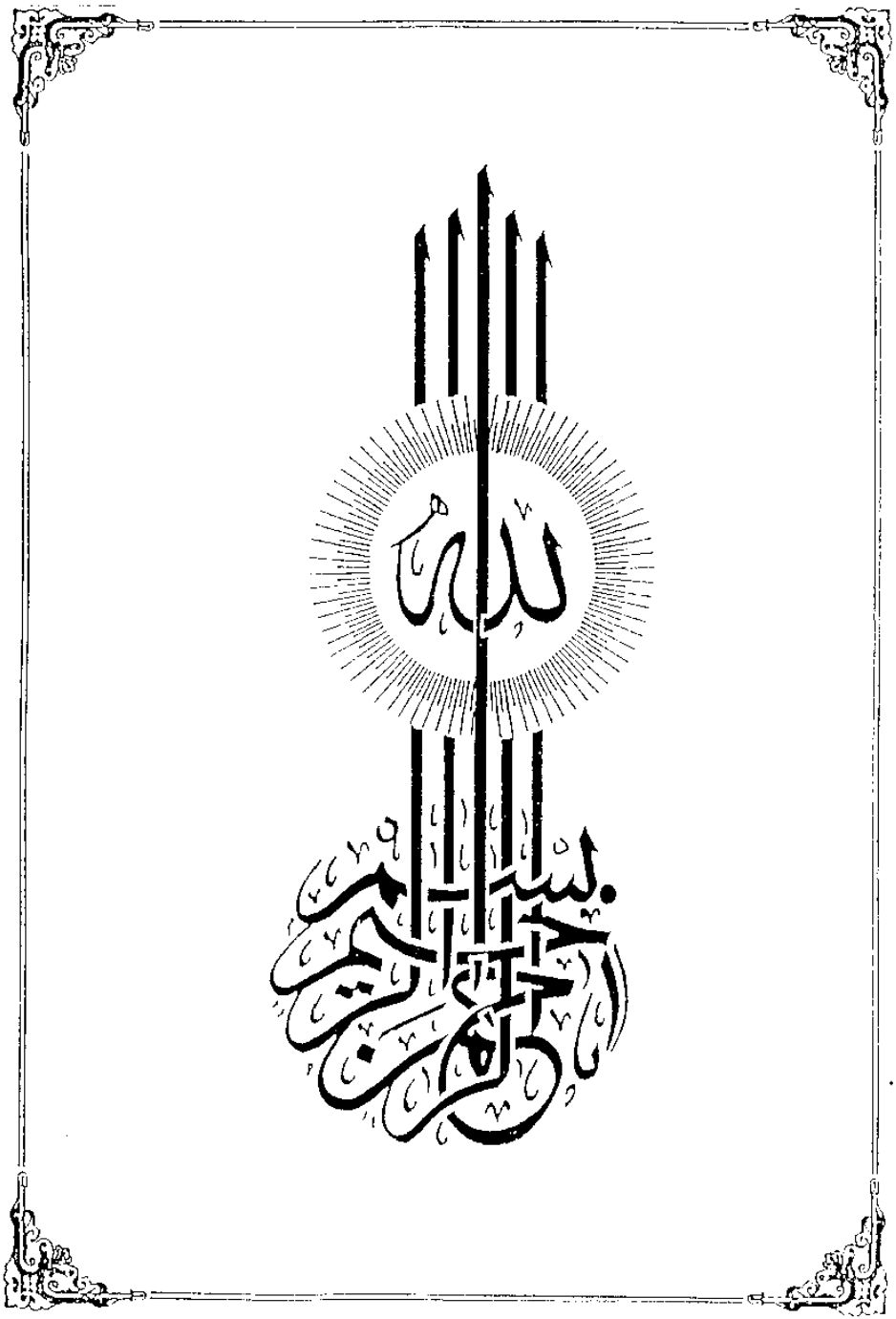

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INTRODUCTION AND AIM OF WORK

INTRODUCTION

Risk scoring may be defined as a formalized method of recognizing, documenting, and cumulating antepartum and intrapartum factors in order to predict later complications for the mother, fetus and the infant.

It is based on the fact that abnormal conditions tend to occur together and may act synergistically as risk factors producing a cumulative effect, thus patients with the lowest number and least severity of risk factors may be expected to have the best outcome but those with greatest number and most severe factors the worst outcome.

Several studies have demonstrated that numerical systems of risk scoring in pregnancy can be used to predict the likelihood of perinatal death (Aubery and Pennington, 1973);(Coopland , 1977).

Some authors have restricted the use of risk scoring systems to the antepartum period, whereas others have included an intrapartum risk score and shown that this increases the predictive accuracy of the scoring system(Hobbel, Okada et al., 1973).

The ultimate critical application of these numerical scoring systems would be their implementations on a regional

basis to screen and identify those pregnancies that have a significantly greater risk of poor outcome.

AIM OF WORK:

The aim of this study is to evaluate the effect of different factors that could influence the course and prognosis of labour among patients admitted to Ain Shams Maternity Hospital in an attempt to formulate a scoring system. Such a scoring system would help in identification of risk factors which play a role in determining the way of management to decrease maternal and fetal morbidity and mortality.

REVIEW OF LITERATURE

THE CONCEPT OF RISK SCORING SYSTEMS IN OBSTETRICS

Evolution of Risk-Scoring Systems:

The process by which the products of conception are expelled from the mother around term is called labor.The usual course of this event, when it begins spontaneously, is considered by most people to be normal parturition.

Nature however is not always a reliable ally , and the natural course of spontaneous labour may vary considerably, not infrequently proving to be quite dangerous for both the mother and the baby (Beazley et al., 1983).

In obstetric practice it is no longer considered sufficient to employ a policy of "watchful expectancy"in the management of labour. Under such policy most modern obstetricians would consider it their duty to promote a safer situation whenever they can.

Because the average risks of normal parturition are considered by many to be too great to be acceptable,considerable efforts have been made in recent years to promote low-risk obstetric situations.

While aiming to achieve a programme for safe and sensible care, flexibility is essential to the concept of controlled parturition in order to ensure kind and personal care to the individual.

Failure to achieve such flexibility leads to justifiable criticism of 'conveyor belt obstetrics'.

The degree of control which needs to be exercised is largely determined by the extent to which a patient and her baby are considered to be 'at risk' at the onset of labour. In otner words, the influence of antenatal events upon the usual course of labour can be considerable, and it is only sensible to consider in advance how labour might be altered by these circumstances. This has led to the adoption of labour prediction scores. **Beazley , (1983)**

Several studies have demonstrated that numerical systems of risk scoring in pregnancy can be used to predict the likelihood of perinatal death (Aubrey et al., 1973) ; (Coopland et al., 1977).

Some authors have restricted the use of such systems to the antepartum period , whereas others have included an intrapartum risk score and shown that this in conjection with an antepartum component increases the predictive accuracy of the scoring system (Hobel et al., 1973); (Sokol, et al., 1977). These numerical scoring systems help to screen and identify those pregnancies that have a significantly greater statistical risk of poor fetal and maternal

outcome and thus, these pregnancies can receive appropriate management and more intensive care.

Ian Morrison, et al. (1980) put down a simplified intrapartum scoring system and they aimed at predicting the outcome of labour, which is defined by three measurements; perinatal mortality, perinatal morbidity and maternal morbidity. They analysed 1,994 consecutive parturient women and showed that 472 (23 %) could be assigned to a high risk category on the basis of their numerical scoring system. These high risk group had a score of ≥ 3 and they showed a significant increase in the incidence of perinatal mortality, neonatal morbidity and instrumental and abdominal deliveries ($P < 0.0001$). **(Table 1&2)**

Table (1): The intrapartum factors used in scoring as proposed by Ian Morrison, et al. (1980).

Intrapartum factors	Score
Labour:	
. Labor ≥ 20 hours	2
. Slow latent phase progress(< 3 cm dilatation with contractions for 10 hours.	1
. Slow active phase progress (no progress or < 1.5 cm dilatation in 2 hours).	2
.Meconium in first stage (light, old staining)	4
. Meconium in first stage (dark, fresh or heavy)	1
Associated Conditions:	
. Gestation < 34 weeks	3
. Premature rupture of membranes ≥ 24 hours	2
. Syntocinon induction or augmentation of labour	2

Table (2): The incidence of perinatal mortality, neonatal and maternal morbidity in the studied cases by Ian Morrison, et al., (1980).

Intrapartum score	Total deliver-ies.	Perinatal mortality		Neonatal morbidity		Maternal morbidity	
		Number	Rate %	Number	Rate %	Number	Rate %
0 - 2	1,522	2	1.3/1000	218	14.3	192	12.6
3	472	14	29.6/1000	144	30.5	184	38.9

The table shows that there is significant difference between the two groups as regards perinatal mortality, neonatal and maternal morbidity ($P < 0.0001$).

Sokol, et al. (1977) made a prospective study on 1,275 consecutively gravid women and they tried to evaluate the relationship between the antepartum and intrapartum risk score which they suggested and the outcome of pregnancy for each studied case. This antepartum and intrapartum risk scale is shown in table (3). Each risk factor was weighted with a score of 1,5 or 10. The score on the antepartum or intrapartum scale was cumulative. On each scale a score of 10 or more was considered high risk while a score of less than 10 was considered low risk. So there were four possibilities in classifying the studied cases : -

- Low /low group.
- Low /high group.
- High/low group.
- High/high group.

It was found that increased risk on both scales was significantly related to lowered one and five-minutes Apgar scores.

The perinatal mortality rate increased from 0 to 93.4 per thousand from the lowest to the highest risk group.More than 80% of all perinatal deaths occurred in the high/high risk group.

Haeri et al., (1974) suggested a numerical scoring system which is simple and helps to classify patients and