

SIGNIFICANCE OF RISK SCORING SYSTEM IN THE IDENTIFICATION OF PREGNANT WOMEN AT HIGH RISK FOR PRETERM LABOUR IN INDIA.

DEEPIKA DEKA ● KAMAL BUCKSHEE ● BAHUNLANG KHARSYNTHIEW
ASHISH KUMAR RAKSHIT

SUMMARY

Identification of women at risk for preterm labour, who could be given intensive prenatal care, would have an impact on reducing premature births.

The usefulness of the commonly used Creasy risk scoring system in predicting preterm birth was evaluated in a prospective study of 125 patients, and 50 patients in active preterm labour.

In the high risk, and low risk groups, preterm labour occurred in 18% and 10% cases respectively.

In the patients with preterm labour, only 36% women had a Creasy risk score >10, most preterm labour occurring in the low risk group of women.

In conclusion, the Creasy risk scoring system can identify the high risk group of Indian women likely to go into preterm labour, but does not appear to be as specific as in the Western population. A modified Risk scoring system with more points for factors such as low socio-economic status, low pregnancy weight gain, low maternal age needs to be devised for the Indian population.

INTRODUCTION

Preterm labour is an important obstetric

complication associated with high perinatal mortality and morbidity. Identification of pregnant women at risk for preterm labour is a critical component of prenatal care aimed at prevention of premature births. Patient's education on early signs and symptoms of preterm labour, elimination of risk factors where possible and intensive antenatal monitoring with prompt intervention may have an impact on the rate of prematurity.

Several workers have identified poor past reproductive performance as the highest risk factor. The index pregnancy risk factors along with past obstetric outcome have been organized into a high-risk scoring system by Papiernik (1984) and slightly modified by Gonik (1986) and Creasy. Controversies exist as to the merits of this system (Main et al 1987; Owen et al (1990). Experience at the Ohio State University Hospitals Obstetric Clinic with the Creasy Risk Scoring System has shown that although a score of 10 or more was associated with a three fold increase (from 8 - 24%) in the rate of prematurity, 55% preterm births occurred in pregnancies with a score of less than 10%.

This study investigates the usefulness of the most commonly used Creasy risk scoring system in identifying the high risk group of women in the Indian context.

MATERIAL AND METHODS

The following groups of pregnant women attending the Antenatal Clinic

at the All India Institute of Medical Sciences, New Delhi were studied :

Gr. I - 125 pregnant women with accurate knowledge of last menstrual period, and period of gestation confirmed by ultrasound.

Gr. II - 50 patients in preterm labour.

Patients were classified as at low, medium or high risk for preterm labour according to the Creasy Scoring System (Table I).

All patients in Group I were taken up for the study at 28 weeks of gestation and called at 2 weekly intervals for re-assessment. Patients were educated on early signs and symptoms of preterm labour, taught self palpation of uterine activity, and asked to report to the labour room at the earliest onset of symptoms. The period of gestation at onset of preterm labour and delivery or other complications were noted.

RESULTS

Of the 125 antenatal patients monitored, 2 cases were excluded from the study because the pregnancies were terminated due to severe pregnancy induced hypertension. The Creasy Risk Score of the 123 pregnant antenatal patients and the 50 patients in preterm labour are shown in Table II.

Preterm labour occurred in 17/123 patients of Group I. In the low risk group 8/75 cases (10%) went into preterm labour, while 8/44 (18%) patients with Creasy Score >10 had preterm labour. The incidence and period of gestation at onset of preterm

TABLE I
CREASY'S RISK SSCORING SYSTEM

Points	Social Economic Status	Past History	Daily Habits	Current Pregnancy
1.	2 children at home - Low socio-economic status	One abortion less than one year since last birth	Work outside home	Unusual fatigue
2.	Younger than 20 years - Older than 40 years - Since parent	2 abortions	More than 10 cigarettes per day	Less than 13 lbs. by 32 wks gestation - hypertension - bacteriuria - Albuminuria
3.	Very low social economic status - Shorter than 150 cm - Lighter than 45 kg.	3 abortions	Heavy work Long tiring trip	Breech at 32 weeks Head engaged Febrile illness
4.	Younger than 18 years	Pyelonephritis -		Metrorrhagia after 12 weeks gestation Effacement Dilatation Uterine Irritability
5.	-	Uterine Anomaly Second trimester abortion Diethylstilboestrol exposure		Placenta praevia Hydramnios
10.	-	Premature delivery Repeated second trimester abortion		Twins Abdominal Surgery

Low risk 0-5; Medium risk 6-9; High risk >10.

Table II
CREASY RISK SCORE IN ANTENATAL AND
IN PRETERM LABOUR PATIENTS.

Creasy Score	Group I Antenatal Cases (123)	Group II Preterm Labour (50)
High (<10)	44 (35.7%)	18 (36%)
Medium (6-9)	4 (03.2%)	9 (18%)
Low(0-5)	75 (61%)	23 (46%)

TABLE III
INCIDENCE AND PERIOD OF GESTATION AT ONSET
OF LABOUR IN CREASY RISK GROUPS

Creasy Score (No. of cases)	Preterm Labour (No. of cases)	Period of gestation (weeks) (No. of cases and %)			
		28-30	31-33	34-36	>37
High 44	8(18%)	2	4	2	34 (82%)
Medium 4	1(25%)	-	1	-	3 (75%)
Low 75	8 (10.6%)	-	2	6	67 (89%)
Total 123	17 (13.8%)	2	7	8	104

labour, according to the level of risk score is shown in Table III.

Preterm labour occurred in only 36% women in Group II with Creasy Risk Score of >10, while the rest 32/50 cases in preterm labour had a score of <10.

DISCUSSION

Identifying risk factors for preterm labour and isolating the high risk group of pregnant women who could be followed by intensive patient education and prenatal attention would have a strong impact in reducing incidence

of premature labour.

Creasy (1986) studied 966 patients (274 primigravidae and 692 multigravidae) who were screened for preterm delivery risk (Creasy Scoring) and delivered after 20 weeks of gestation. Sixteen primigravidae (5.8%) and 43 multigravidae (6.2%) delivered after spontaneous labour between 20-37 weeks. The incidence of preterm delivery was 2%, 5% and 30% in low, medium and high risk groups respectively.

However, Main et al (1987) found in his study of 480 patients, that though the high risk Creasy score had more points for women who had earlier delivered preterm infants, there was no significant difference in outcome between high and low risk women in the index pregnancy. He concluded that this risk scoring system failed to predict preterm delivery in their population.

In our study of Indian women who were generally of lower socio-economic status, young and had low pre-pregnancy weight, the incidence of preterm labour was higher 17/123 (14%) than in the western literature. In the high risk Creasy score group the incidence was 18% as compared to the low risk group (10%). The medium risk group had only 1/4 cases which is too small to comment upon.

In the preterm labour group, 64% cases in labour had a risk score of less than 10.

In the high risk scoring group, previous history of preterm delivery, uterine anomaly, polyhydramnios and

twin pregnancy were the most common predisposing factors.

Maternal activity status, ethnicity have also been found to affect pregnancy outcome between United States and foreign-born women in major US racial and ethnic groups (Singh & Yu 1996). Further research is required on the effects of behavioural, cultural and psychological factors in explaining the differences observed. Primiparous state, low maternal age, prolonged standing, physical exertion were found to be high risk factors for preterm births (Wessel et al 1996; Mercer et al 1996; Khandeparkar et al 1987).

Despite attempts to reduce the prematurity rates in the past two decades, we have been unfortunately not very successful. In most cases risk factors for preterm delivery in a healthy cohort is unknown (Adams et al 1995).

However, as in France a comprehensive national programme specifically aimed at prematurity prevention with improved working conditions, national legislature for paid maternity leave and job protection, prenatal risk assessment, increased nutritional support, educational intervention and early referral to prenatal centre can have a beneficial effect (Berkowitz and Papiernik 1995).

The Creasy Risk Score though statistically significant in identifying high risk group for preterm labour does not appear to be very specific in the Indian context. Higher score needs to be given to women with low

socio-economic status, low pre-pregnancy weight, less weight gain in the current pregnancy, physical exertion during pregnancy and low maternal age. A slightly modified Risk Scoring system needs to be devised for the Indian population.

REFERENCES

1. Adams MM, Sarno AP, Harlass EF, Rawlings JS, Read JA. *Epidemiology*, 1995; 6: 525.
2. Berkowitz GS, Papiernik E. *Semin-perinatol*. 1995; 19:272.
3. Gonik B, Creasy RK. *AM. J. Obstet Gynec.* 1986; 154:3.
4. Kandeparker S, Bilaney JA, Krishna UR, *J. of Obstet & Gynec. of India*. 1987; 37: 237.
5. Main DM, Richardson D, Gabbe SG, Strong S, *Obstet Gynec.* 1987; 69: 61.
6. Mercer BR, Goldenberg RL, Das A, Maowad AH, Iams JD. *Am J - Obstet Gynec.* 1996; 174: 1985.
7. Owen J, Goldenberg RL, David RO. *Am. J. Obstet Gynec.* 1990; 163: 873.
8. Papiernik E. *Clin. Obstet Gynec* 1984; 27: 614.
9. Singh GK, Yu SM. *Am. J. Public Health*. 1996; 86: 837.
10. Wessel H, Cnathingins S, Bergstrom S. *Acta - Obstet Gynecol - Scand.* 1996; 75 (4) : 360.