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Admission Test Is an Evidence Based Predictor for the Assessment for the Feto-Maternal Well Being and Mode of Delivery

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Abstract: *The objective of the study is to predict the assessment of the fetal wellbeing , maternal well being and mode of delivery. Assessment of the fetal well being by electronic fetal monitoring of the fetal heart rate in the pregnant women who admitted in the labor room of the Siddhartha medical college during the year of 2013 from January to December with a period of gestation of >37 weeks, in active phase of labor with fetus in the cephalic presentation. Both high risk and low risk cases were subjected to an admission CTG ,which included a 20 minute recording of FHR and uterine contractions, High risk cases are compared with low risk cases in an aspect of fetal distress and mode of delivery.100 patients were included in the study. Out of 100,77 had reactive trace ,18 had suspicious traces , and 5 had ominous traces. The admission test can serve as an evidenced based tool to detect fetal distress already present or likely to develop and to predict the mode of delivery and fetal outcome.*

Keywords: *Cardiotocography(CTG), Admission test, Reactive , suspicious, ominous, mode of delivery*.

I. Introduction

The process of labor is a physiological stress to the fetus. Therefore intra partum fetal surveillance is important to have the healthy baby and mother with minimum intervention. The intermittent monitoring of the FHR cannot detect the acceleration, deceleration and variability. Hence over the last 15 years the use of ante partum and intra partum CTG has increased. Ante partum factor alone is insufficient because intra partum fetal morbidity and mortality are encountered in low risk cases.

The Admission Test was described by Ingermarsson et al. It is a method of monitoring fetal heart rate at the onset of labor pains to detect the fetus who is already compromised and during labor process. It is a natural contraction stress

Test which records the fetal heart rate for usually 20 minutes immediately after admission to labor room. An abnormal tracing indicates a deficiency in the placental circulation, which is identified with CTG and early intervention to cut short the labor by caesarean section or instrumental delivery. The Admission Test in low risk women was not recommended by the British guidelines published in11/ 2001 , while in the same year 12/2001the Swedish guidelines recommended the test in all women.

II. Material And Methods

This study was conducted form January 2013 to december2013. It included 50 cases of high risk cases compared with 50 cases of low risk cases admitted to the labor room in the Department of Siddhartha medical college, Vijayawada. This prospective study was approved by DR NTR UHS Informed written consent was taken.

Inclusion and exclusion criteria:-

All women with singleton pregnancy >37 weeks in cephalic presentation with maternal complications like PIH, Past dates, Oligohydramnios , PROM ,Fever, Anemia was compared with no maternal risk cases Multiple pregnancies, maternal complications like GDM ,Preterm anomalous fetus, Abruption, cord prolapsed, Uterine rupture were excluded from the study. A preliminary history was taken and a general and obstetric examination done. The patients will be subjected to a20 minutes CTG once they started uterine contractions. CTG recording (paperspeed1cm/min)on a corometrics 170 series machine. The results of the admission test were categorized into normal, suspicious, or ominous groups as per RCOG guidelines for the interpretation of CTG tracings.

III. Tables

Table 1 Categorization of FHR traces

Category	Definition
Normal	A cardiotocography where all four features fall into reassuring category.
Suspicious	A cardiotocography whose features fall into one of the non reassuring and the remainder of the features are reassuring.
Pathologial	A cardiotocography whose features fall into two or more non reassuring categories or one or more abnormal categories.

Table2 Categorization of FHR features

Type of CTG	total	High risk	Low risk
Reactive	77	31	46
Suspicious	18	16	2
Pathological	6	4	2

Table3 Admission Test v/s risk group

Feature	Baseline	Variability	Deceleration	Acceleration
Reassuring	110-160	>5	None	present
Non- Reassuring	100-109 161-180	<5 to >40 for 90 min	Early Deceleration Variable deceleration Single prolonged deceleration upto 3 minutes.	The absence of accelerations with an otherwise CTG is of uncertain significance
Abnormal (pathological)	<100 >180 Sinusoidal pattern >10 minutes	<5 for 90 min	A typical variable decelerations Late decelerations Single prolonged deceleration >3 minutes	The absence of accelerations with an otherwise CTG is of uncertain significance

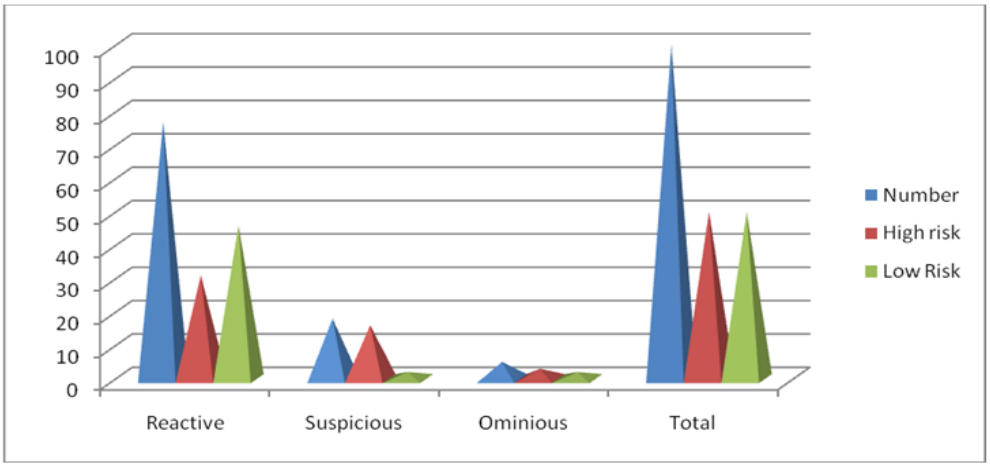
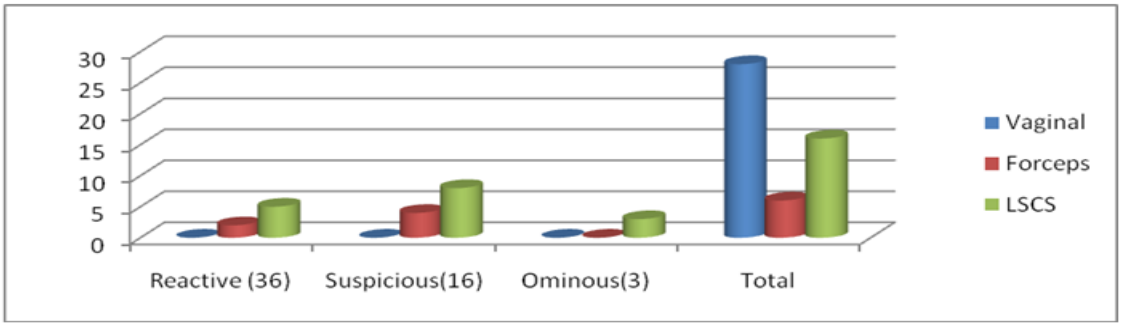


Table4 Risk group v/s mode of delivery

High Risk Cases

	Mode of Delivery		
	Vaginal	Forceps	LSCS
Reactive (36)	24	2	5
Suspicious(16)	4	4	8
Ominous(3)	0	0	3
Total	28	6	16



Low Risk Cases

	Mode of Delivery		
	Vaginal	Forceps	LSCS
Reactive (46)	42	3	1
Suspicious(2)	0	1	1
Ominous(2)	0	0	2
Total	42	4	4

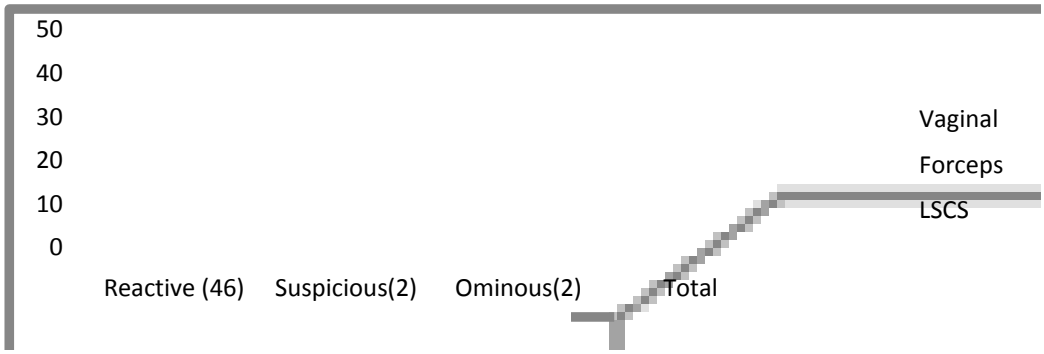
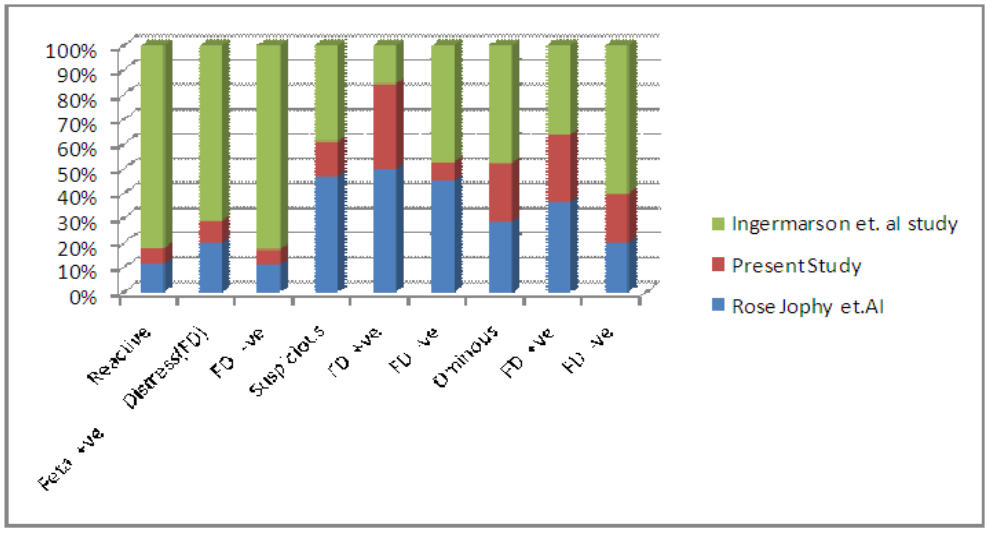


Table5 Acute fetal distress following admission test

Type of Admission Test	Rose Jophy et.AI		Present Study		Ingermarson et. aI study	
Reactive	136		77		982	94.30%
Fetal +ve Distress(FD)	9	6.61%	4	5.10%	32	1.30%
FD -ve	127	93.39%	73	94.90%	950	98.70%
Suspicious	59		18		49	4.70%
FD +ve	16	27.11%	11	61.10%	5	10.20%
FD -ve	42	71.19%	7	38.90%	44	89.80%
Ominous	6		5		10	1%
FD +ve	4	66.70%	3	60%	4	40%
FD -ve	2	33.30%	2	40%	6	60%



IV. Discussion

The labor itself causes physiological stress to the fetus. The admission test has two potential roles[1]. It is noninvasive recordable method of fetal monitoring screening test in early labor to detect compromised fetus and on admission to select the women who need continuous monitoring of EFM during labor[1,5,6]. In this study in 50 cases of high risk cases 28 delivered vaginally, when compared to 42 in low risk cases. 16 cases in high risk group delivered by forceps when compared to low risk cases only 4 delivered by forceps. The rate of caesearean section is high in suspicious group and ominous group[2,3]. The incidence of c/s in high risk group is when compared to low risk it is 4. The incidence of fetal distress is worsening with the admission test [1,4]. The incidence of neonatal death is high in non reactive group[7]. The incidence of low birth babies is more with high risk group than in low risk group[7]. Meconium passage is potential warning to the fetus asphyxia [2].

Incidence of moderate to thick meconium is increased from non reactive to reactive group[6]. Amon 100 cases ,12 babies in high risk group , 3 babies in low risk group admitted in NICU for observation.

V. Conclusion

The rate of vaginal delivery is more in reactive when compared with nonreactive group. The caesarean section rate is more in suspicious and pathological traces group. The rate of c/s is 50% in suspicious group, 90-100% rate of c/s in pathological groups. The incidence of instrumental delivery rate is increases from reactive to nonreactive group. The presence of CTG in labor room is very much important to detect the fetal compromise in early stage of labor in high risk group when compared to low risk group.If the traces is suspicious or pathological cut short the delivery by instrumental or surgical mode of delivery.

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