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Gynaecology

A STUDY ON ADMISSION TEST AND MODE OF DELIVERY OF FOETUS DURING LABOUR

Dr. K Sri Tanaya	Associate Professor, Department of Obstetrics and Gynaecology, Alluri Sitarama Raju Academy of Medical Sciences, Eluru – 534 005, West Godavari District, Andhra Pradesh
Dr. Jyothi Singamsetty	Postgraduate, Department of Obstetrics and Gynaecology, Alluri Sitarama Raju Academy of Medical Sciences, Eluru – 534 005, West Godavari District, Andhra Pradesh
Dr. M Ravi Kiran	Post Graduate, Department of Community Medicine Alluri Sitarama Raju Academy of Medical Sciences Eluru – 534 005, West Godavari District, Andhra Pradesh
Dr. N. Partha Sarathy	Professor & HOD, Department of Community Medicine Alluri Sitarama Raju Academy of Medical Sciences Eluru – 534 005, West Godavari District, Andhra Pradesh

ABSTRACT

BACKGROUND: Prevention and treatment of fetal asphyxia is one of the main aims of perinatal care. Intrapartum events account for 20% of still births, 20-40% of Cerebral palsy & 10% of severe mental retardation. So, it is necessary to identify the mother who is genuinely "low risk" but develops intrapartum hypoxia, So that proper allocation of available resources and man power could be done. Admission test (A.T.) is one such non-invasive technique by which a short 15-20 minutes external electronic fetal monitoring on admission in early labour can be used as a screening test to identify a sub group of fetuses with hypoxia present on admission or those who were likely to become hypoxic in the next few hours of labour. So, the present study was conducted with aim to correlate the results of admission test with APGAR score and mode of delivery in relation to admission test.

MATERIALS AND METHODS: To prove the efficacy of admission test in prediction of fetal jeopardy in utero in early labour and its application in improving fetal outcome. This randomized prospective study was carried out in 100 patients attending to ASRAM Hospital, Eluru. This study was conducted over a period of 6 months from Mar -2013 to Aug 2013.

RESULTS: Out of 100 patients 57% belong to 21-25 yrs, 32% belong to 16-20 years and the rest 11% is above 25 years. Majority of cases in the study population were Primigravidae (59%). AT was reactive in 42% of women of age group 21-25yr. AT was equivocal in 25% of women of age group 16-20yr. AT Was 18.8% Non-reactive in women of age group >25 years.

CONCLUSION: The test is good at predicting the fetus that does not require acute or premature obstetric intervention. In conclusion, it can be implied that "Admission test" is a simple reliable and non- Invasive method to screen large number of patients in busy hospitals.

KEYWORDS :

INTRODUCTION:

Prevention and treatment of fetal asphyxia is one of the main aims of perinatal care. Intrapartum events account for 20% of still births, 20-40% of Cerebral palsy & 10% of severe mental retardation. It has been observed that intrapartum fetal hypoxia is one of the potential risk factors involved in perinatal mortality and future developmental handicaps[1].

The development of an effective test for assessing antepartum fetus could allow intervention before fetal death or asphyxic damage. Risk assessment based on antepartum factors alone is often insufficient for patient selection as intrapartum fetal morbidity & mortality are not uncommon in a low-risk population. (Ingemarsson et al 1986, Hobel et al 1973)[2].

So, it is necessary to identify the mother who is genuinely "low risk" but develops intrapartum hypoxia, So that proper allocation of available resources and man power could be done.

Admission test (A.T.) is one such non-invasive technique by which a short 15-20 minutes external electronic fetal monitoring on admission in early labour can be used as a screening test to identify a sub group of fetuses with hypoxia present on admission or those who were likely to become hypoxic in the next few hours of labour[3]. The A.T. also gives idea of those patients who require continuous electronic fetal monitoring.

OBJECTIVES:

1. To correlate the results of admission test with APGAR score.
2. Mode of delivery in relation to admission test.

MATERILAS AND METHODS:

To prove the efficacy of admission test in prediction of fetal jeopardy in utero in early labour and its application in improving fetal outcome. This randomized prospective study was carried out in ASRAM Eluru.

Period of study: This study was conducted over a period of 6 months from Mar -2013 to Aug 2013

Inclusion criteria: Patients irrespective of Parity, Presentation both normal and high risk with Period of gestation >36 weeks and in first stage of labour (<4 cm of cervical dilatation).

Exclusion criteria: 1. Admitted in late labour. 2. Patients for elective caesarean section.

100 patients were included in this study at random. Patients selected were both normal as well as high risk admitted in early labour irrespective of parity and presentation with gestational age more than or equal to 36 wks. Careful history regarding the LMP, parity and brief previous obstetric history was taken. A through clinical examination and obstetric examination and pelvic assessment was done. They are subjected to NST.

After 20 minutes of conventional NST on admission in labour, and consequent FHR changes noted and interpreted. Results were kept in a concealed manner. These patients were followed up to delivery in labour room by intermittent auscultation due to lack of adequate equipment for continuous monitoring. Progress of labour and important events like development of fetal distress on auscultation, colour of liquor, mode of delivery, APGAR score at 1 and 5 min were noted. The placenta was examined for infarcts and other anomalies. Mother and baby are followed till discharge.

RESULTS:

Out of 100 patients 57% belong to 21-25 yrs, 32% belong to 16-20 years and the rest 11% is above 25 years. Majority of cases in the study population were Primigravidae (59%). The study group comprised of

100 pregnant patients with gestational age more than 36 weeks with vertex presentation in labour with both normal and high risk patients. The majority of the study group had reactive admission test (73%). 21% had equivocal A.T. and 6% had non-reactive A.T.

AT was reactive in 42% of women of age group 21-25yr. AT was equivocal in 25% of women of age group 16-20yr. AT Was 18.8% Non-reactive in women of age group >25 years.

When A.T. was reactive, vaginal delivery was more common.Outlet forceps was applied for 12.5% cases for fetal distress and 5 (87.5%) cases for other indication. LSCS was done for 26 (61.9%) cases, 4 (15.38%) cases for Fetal Distress and other 22 (84.61%) cases for other indications. When A.T. was suspicious, 21 cases – only 7 (14%) h ad delivered normally, 13 (30.95%) cases were delivered by C-section, outlet forceps was applied for 1(12.5%) case. When A.T. was non-reactive, 2 (4%) cases are delivered normally but with fetal distress, 3(7.14%) cases by C-section for other indication, 1(12.5%) case by outlet forceps for fetal distress as shown in Table -1.

In the reactive group of 73 patients, 10 babies had APGAR < 7 at 1 min, out of which 9 babies improved quickly to > 7 at 5 min. In the equivocal group of 21 patients, 14 cases had APGAR < 7, out of which only 7 cases had improved with APGAR > 7, in 7 cases APGAR score remained below 7, out of which one baby had died. In the Non–reactive group of 6 cases, 5 cases show APGAR< 7 at 1 min and all cases remained with APGAR < 7 even after 5 min, out of which one baby had died.

DISCUSSION:

A small strip of electronic FHR recording by external electronic fetal monitoring for a period of 15 to 20 minutes on admission in labour room for a patient in labour before 4cm of cervical dilatation is called as screening A.T[3].The duration of an A.T. can be as short as 5-10 minutes if one could identify base line rate, variability and two contraction with no FHR changes. Interpretative criteria in various series varied widely, minimum of two accelerations of 15 bpm lasting for 15seconds in 20minute period have been used in most of the studies (Ingemarssons et al[2], 1986). In our present study we have used the same.

A.T. can be used to screen low risk patients to select those for continuous electronic fetal monitoring and or more stringent auscultation. It can detect fetal distress already present on admission and unnecessary delay in intervention can be avoided. It is a good alternative to label low risk patients for FHR monitoring on the basis of an antenatal risk classification.

It was found that the incidence of vaginal deliveries were more common, if the admission test was reactive as compared to the incidence of instrumental or operative deliveries as shown in table-2. In the present study percentage of vaginal deliveries are comparable with other studies, whereas the percentage of Caesarean sections was higher than in other studies. This could probably be because of increased number of high risk cases recruited in to the study population which could be again due to the fact that our hospital happens to be a tertiary care center.

It is observed that Instrumental and operative delivery were more common in the abnormal admission test result group as compared to the reactive test group as shown in table-3. In the present study percentage of instrumental deliveries following equivocal A.T. are found to be in par with other studies whereas percentage of Caesarean sections are more .This could be probably be due to the facts mentioned previously. It is found that non –reactive FHR pat terns on admission test were associated with higher percentage of abnormal delivery outcomes.

As reported in the previous studies the percentage of abnormal deliveries (c/s,forceps) with the present study wasfound to be almost correlating. A very important point noted in some studies is with reactive A.T. leading to abnormal delivery outcomes (c/s,forceps) showed that many times the indications were unrelated to fetal distress perse, and in cases where fetal distress was noticed the A.T.–delivery interval was found to be prolonged (>10hrs).

CONCLUSION:

The present study suggest that the Admission test might be a good predictor of foetal wellbeing during the next few hours in term fetuses except for acute events in low risk population. Today with electronic foetal monitoring the incidence of operative delivery is certainly on the rise. Admission test is a simple, non-invasive method, which can be performed with minimal training. It is an effective screening test for fetal wellbeing. It is less time consuming and has no contraindications and has no ill effects on fetus or mother. The advantages are its acceptability and its cost effectiveness. The non-reactive A.T. has to be further evaluated by VAST and Maternal fluid replacement so as to improve positive predictive value.Non-reactive tests are associated with statistically significant increase in Caesarean section rate for fetal distress. Non-reactive patterns correlate with significantly poor perinatal outcome in terms of fetal distress, low APGAR scores, admission to neonatal intensive care unit, neonatal seizures, low birth weight and perinatal mortality. A.T. has high degree of negative predictive value, which suggests that it is better in ruling out fetal compromise. The test is good at predicting the fetus that does not require acute or premature obstetric intervention. In conclusion, it can be implied that "Admission test" is a simple reliable and non- Invasive method to screen large number of patients in busy hospitals.

TABLE NO-1:

MODE OF DELIVERY	NUMBER OF PATIENTS	RESULT OF ADMISSION TEST		
		REACTIVE (%)	EQUIVOCAL (%)	NON-REACTIVE
NORMAL	50	41 (82)	7 (14)	2 (4)
C-SECTION	42	26 (61.9)	13 (30.95)	3 (7.15)
OUTLET FORCEPS	8	6 (75)	1 (12.5)	1 (12.5)
Chi-square value =19.3, d.f-4, P value <0.05 – (Statistically significant)				

TABLE NO-2:

STUDY	NUMBER OF CASES (%)			
	REACTIVE FHR PATTEREN	VAGINAL	CAESAREAN	FORCEPS
LTMG Hospital	169	153(90.5)	11(6.5)	5(3)
NWM Hospital	58	52(89.65)	1(1.72)	5(8.62)
PRESENT STUDY	73	41(56.16)	26(35.6)	6(8.21)

TABLE NO-3:

STUDY	NUMBER OF CASES (%)			
	EQUIVOCAL FHR PATTEREN	VAGINAL	CAESAREAN	FORCEPS
LTMG Hospital	19	15(78.9)	13(15.8)	1(5.3)
NWM Hospital	33	20(60.6)	10(30.3)	3(9.1)
PRESENT STUDY	21	7(33.3)	13(61.9)	1(4.8)

TABLE NO-4:

STUDY	NUMBER OF CASES (%)			
	NON-REACTIVE FHR PATTEREN	VAGINAL	CAESAREAN	FORCEPS
LTMG Hospital	12	4(33.3)	8(66.7)	1(5.3)
NWM Hospital	9	1(11.1)	6(66.7)	2(22.2)
PRESENT STUDY	6	2(33.3)	3(50)	1(16.7)

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