

Neonatal Outcome in Cases of Cesarean Section after Diagnosis of Fetal Distress

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Abstract: To determine the early neonatal outcomes of babies delivered by cesarean section because of clinical diagnosis of fetal distress (using intermittent auscultation). **Study design:** A prospective study design was used. **Materials and method:** A prospective observational study was conducted in obstetrics and gynecology department of in our hospital. The inclusion criteria-Full term pregnant Patients undergoing cesarean section for fetal distress, Live singleton pregnancy. **Exclusion criteria-** Multifetal gestation, Preterm patients, Malpresentation. **Results:** There was no significant differences between the cases and controls in terms of age, parity, booking status, and birth weight of the babies ($p > 0.05$). Hypertensive groups and cord problems led to fetal distress in 69% of cases. Rest of the cases did not have any obvious etiological factor. Hypertensive group leads to IUGR. Inpite of fetal tachycardia, bradycardia or passage of meconium 90% of neonates cried well at birth and had APGAR score > 7 . **Conclusion:** Early diagnosis and timely cesarean section in case of fetal distress decreases perinatal morbidity and mortality

Keywords: Intermittent auscultation, fetal distress, Apgar score

1. Introduction

Fetal distress is the term commonly used to describe fetal hypoxia. It may be defined as a physiological state in which there is metabolic acidosis secondary to hypoxia. It is brought about by factors that cause umbilical cord compression or impair gaseous exchange between the placenta and maternal circulation. Clinically it is characterized by abnormal fetal heart rate and rhythm, passage of meconium and increased fetal movements. Causes of fetal distress may be due to Hypertensive disorders in the mother, PROM, Cord around neck, Antepartum Haemorrhage, Umbilical cord prolapse, Uterine rupture, Shoulder dystocia, Premature closure of the fetal ductus arteriosus, Intrahepatic cholestasis of pregnancy. Although the fetus is efficient at extracting oxygen from the mother, a complex interplay of antepartum complications, suboptimal uterine perfusion, placental dysfunction, and intrapartum events may be associated with adverse fetal outcome^[1].

The uterine contraction during labor subjects the fetus to a possible risk of hypoxic injury due to repeated cord compression or reduction of retro-placental perfusion^[2]. Fetal heart rate (FHR) monitoring, introduced over 8 decades ago into clinical use continues to be the predominant method for intrapartum fetal surveillance^[3]. Either intermittent auscultation (IA) or continuous electronic monitoring detects the fetal compromise. When it is diagnosed clinically as "fetal distress", swift delivery is the aim to save the fetus from disability or death. This is done normally by caesarean section if vaginal delivery is not imminent^[5]. Although fetal distress can be detected clinically, some other investigation like scalp blood pH of fetus should also be done. But in routine clinical practice fetus scalp blood pH is not being done. Apgar score at 5 minutes is commonly indicative of aneoneate that is not well oxygenated who is at greater risk of death^[4].

2. Materials and Method

A prospective observational study was conducted in obstetrics and gynecology department of Dhiraj Hospital, Sumandeep Vidyapeeth from June 2018 to November 2018. The inclusion criteria were-Full term pregnant Patients undergoing cesarean section for fetal distress, Live singleton pregnancy. Exclusion criteria were Multifetal gestation, Preterm patients., Malpresentation.

All patients fulfilling the inclusion and exclusion criteria as mentioned above were taken for the study, After history and clinical examination, all patients were allowed to go in labor and were watched throughout labor.

Fetal heart rate patterns were monitored throughout labor. Patients who were diagnosed to have fetal distress and who were taken for caesarean section were taken as cases. APGAR scoring at 1 and 5 minutes and need for resuscitation in baby was noted.

Need for NICU admission for complications like respiratory distress syndrome, aspiration pneumonia, birth asphyxia, septicemia, convulsion, jaundice and hypoxic ischemic encephalopathy was noted.

3. Results

The data collected in this study of 66 patients is presented in following tables. 95% of my patients were in the age group between 20-35 years. 52% patients were primies.

Table 1: Clinical criteria used for diagnosis of fetal distress

Parameters	No. of patients (n=66)	Percentage
Tachycardia (FHS > 160 bpm)	31	46.96 %
Bradycardia (FHS < 110 bpm)	35	53.03%
Passage of meconium	20	30.30%
Excessive Fetal movement	15	22.72%

Majority of patients who had fetal bradycardia had come late in labor. The patients with fetal tachycardia were picked up as fetal distress as they were on CTG. Excessive fetal movement noted only in 23% of cases. In spite of fetal tachycardia, bradycardia or passage of meconium 90% of neonates cried well at birth and had APGAR score >7. This is as if the newborns laughed at us and told we were not in distress. This is because the most accurate parameter to diagnose fetal distress i.e. fetal scalp blood pH is not done.

Table 2: Six most common etiological factors that led to fetal distress

<i>Etiological factors</i>	<i>No. of patients (n=66)</i>	<i>Percentage</i>
PIH	26	39.39%
Pre eclampsia / eclampsia	15	22.72%
Cord problems	5	7.57%
Prolonged labor	5	7.57%
Antepartum hemorrhage	3	4.54%
PROM	3	4.54%

Hypertensive groups and cord problems led to fetal distress in 69% of cases. Rest of the cases did not have any obvious etiological factor. Hypertensive group leads to IUGR.

Table 3: Interval between decision of fetal distress and delivery

Decision intervention interval (minutes)	No of patients (n=66)	%	p value
≤30	46	69.69	0.001
>30-60	20	30.31	

When fetal bradycardia occurs, according to IAN DONALD only about 30 minutes are remain with the fetus. Therefore one must not wait for fetal bradycardia took and should delivered the fetus earlier.

Table 4: Condition of newborn at birth

Condition at birth	No. of newborns (n=66)	Percentage
Cried well at birth	60	90.90%
APGAR score <7 at 1 min	19	28.78%
APGAR score at <7 at 5 min	6	9.09%
Resuscitation required	4	6.06%
Meconium at stomach wash	3	4.54%

Four newborn that required resuscitation all were taken to NICU and out of 3 were taken stomach wash in NICU. 22% of the newborn required oxygen at birth.

Table 5: Neonatal morbidity

Neonatal morbidity	No. of patients (n=66)	percentage
Birth asphyxia	3	4.54%
Respiratory distress	3	4.54%
Meconium aspiration syndrome	2	3.03%
Septicemia	1	1.51%

Table 6: Relation of timing of delivery with NICU admission

Timing of delivery	No. of patients	No. of NICU admission
Delivered at fetal tachycardia	31	2 (6%)
Delivered at fetal bradycardia	35	4 (13%)

NICU admission doubled when patients were delivered with fetal bradycardia compared with those who were delivered with fetal tachycardia.

Majority of those patients who were delivered at fetal bradycardia had either come late in labor or relative refused of LSCS or we allowed labor to progress hoping for vaginal delivery.

Only one newborn that died fell in the group who were delivered when already fetal bradycardia had occurred.

4. Conclusion

Early diagnosis and timely cesarean section in case of fetal distress decreases perinatal morbidity and mortality. Do not wait for fetal bradycardia to occurred and delivered to fetus when it shows tachycardia. This will fulfill our aim of healthy mother and healthy baby.

References

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