

## Neonatal outcome of suspected fetal distress cases

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### Abstract

**Background:** Perinatal mortality is closely related to the early and accurate recognition of foetal distress. Objective of the study was to find out neonatal outcome in suspected fetal distress cases. **Methods:** This was a cross sectional study done in ShSMCH. Purposively 38 samples were taken in three weeks time and clinical state related to fetal distress and neonatal outcome of them were observed. **Results:** Fetal movement were less in 36.8% cases. Abnormal fetal heart rate were present in 89.4% cases and in 47.4% cases amniotic fluid was meconium stained. First minute Apgar score was low in 36.8% cases and 47.4% were admitted in paediatric ward. The clinical profile for diagnosis of fetal distress was not significantly associated with low apgar scores. **Conclusion:** There was very little appreciation for assumption of fetal distress clinically. [J Shaheed Suhrawardy Med Coll 2016;8(1): 23-25]

**Keywords:** Fetal distress, Neonatal outcome

### Introduction

Fetal distress is a widely used but poorly defined term. The diagnosis is usually based on characteristic changes in fetal heart rate assessed by auscultation or electronic recording with, in some cases, low pH in a fetal blood sample<sup>1-3</sup>. Suspected fetal distress during labour is always considered an emergency. The importance attached to it derives from the perceived association of fetal hypoxia (low oxygen levels) with perinatal morbidity/mortality and long term disability<sup>4</sup>. Intrapartum hypoxia complicates about 1% of labour and results in death in about 0.5 in 1000 pregnancies and cerebral palsy in 1 in 1000 pregnancies<sup>5</sup>. The pathogenesis of intrapartum hypoxia is often multifactorial but poorly understood. Processes such as uteroplacental vascular disease, reduced uterine perfusion, fetal sepsis, reduced fetal reserves, and cord compression can be involved alone or in combination, and gestational and antepartum factors can modify the fetal response<sup>6</sup>. Methods of screening and diagnosing the condition have limitations<sup>7</sup>. When it is diagnosed clinically as “fetal distress” swift delivery is the aim, and the standard has become delivery within 30 minutes of diagnosing fetal distress<sup>8</sup>. In practice emergency caesarean

section for fetal distress should be undertaken as quickly as possible and ideally within 30 minutes<sup>9</sup>.

### Methodology

Term pregnant women admitted in antenatal ward who fulfill the inclusion criteria were enrolled in the study. At the onset thorough history was taken and physical examination including obstetrical examinations were done. Gestational age was assessed by date of LMP, clinical examination and USG report at early weeks of pregnancy. Fetal distress was detected by history of fetal movement, detection of FHR & rhythm, colour of liquor amni. Fetal movement was normal if it was more than 10 times in 12 hours period. Fetal heart rate was assumed to be normal if it was within 120-180 beats per minute and rhythm was taken as normal if the heart beats were in regular interval. If the fetal movement was less than 10 times in 12 hours period, intermittently auscultated fetal heart rate was more or less than normal, beats were irregular and amniotic fluid colour was meconium stained than the condition was diagnosed as fetal distress. Neonatal outcome was determined by Apgar score in 1 and 5 minute, birth weight & admission in pediatric ward.

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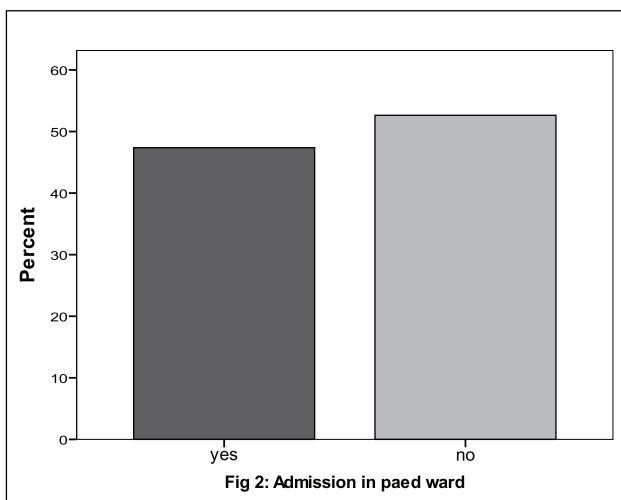
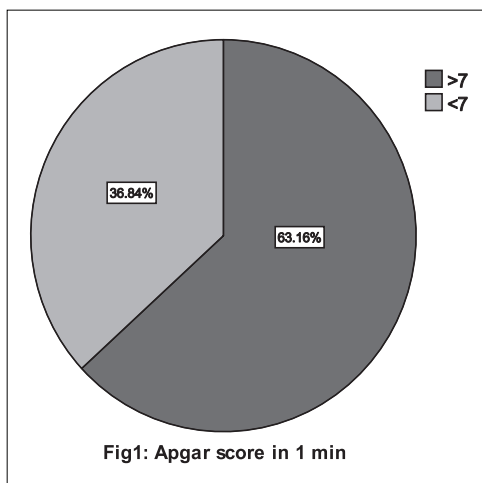
**Contributions by authors:**

**Results:**

Purposively 38 samples were taken in three weeks time. About 53% cases maternal age group was within 15-19 years. Monthly expenditure revealed almost 42% were low socioeconomic group. Only 10.5% mother was service holder. Maternal perception of fetal movement were less in 36.8% cases. Abnormal fetal heart rate were present in 89.5% cases and in 47.4% cases amniotic fluid was meconium stained. First minute Apgar score was low in 36.8% cases and 47.4% were admitted in paediatric ward. The clinical profile for diagnosis of fetal distress was not significantly associated with low apgar scores.

**Table1: Clinical State related to Fetal Distress (n=38)**

Clinical state related to fetal distress		Frequency	Percent
Fetal Movement	Normal	24	63.2
Fetal Movement	Less Fetal Movement	14	36.8
Fetal Heart Rate	Normal	4	10.5
Fetal Heart Rate	Abnormal	34	89.5
Fetal Heart Rhythm	Regular	32	84.2
Fetal Heart Rhythm	Irregular	6	15.8
Color of Amniotic Fluid	Clear	20	52.6
Color of Amniotic Fluid	Meconium Stained	18	47.4



**Table 2: Clinical profile of fetal distress compared with Apgar score in 1 min**

Clinical profile of fetal distress		Apgar score in 1 min		p value
		low	good	
Fetal Movement	Normal	14	10	0.501ns
	Less than normal	10	4	
Fetal heart rate	Normal	10	22	0.167ns
	Abnormal	4	2	
Colour of Amniotic Fluid	Clear	8	18	0.253ns
	Meconium Stained	6	6	

**Discussion**

For the present study only the clinical parameters were used for detecting fetal distress and also to assess neonatal outcome. We found that maternal history about fetal movement, fetal heart rate and rhythm and amniotic fluid colour were not significantly associated with low apgar scores. Another study also concluded that diagnosis of fetal heart rate was not significantly associated with low apgar scores so auscultation of fetal heart rate was an insensitive method of assessing the fetal condition and should not be used alone to diagnose fetal distress<sup>10</sup>.

In this study, in 52.6% cases colour of the amniotic fluid was clear. Miller FC et al found that although there was a 31/2 fold increase in incidence of low 5 min Apgar score in the meconium group but signs of fetal distress not significantly associated with colour of amniotic fluid<sup>11</sup>.

In many studies, both biochemical and clinical variables were used to assess the condition of newborn infants<sup>10</sup>. But in this set up only the Apgar scoring system is used. While Apgar scoring system is a popular method of assessing asphyxia, low scores relate poorly to fetal acidosis in labour<sup>12</sup> and at delivery<sup>13</sup> and to cerebral palsy in infancy<sup>14</sup>.

The pH is considered to be the most objective indication of fetal hypoxia during labour but the prognostic developmental implications of severe acidosis at birth have not been adequately evaluated<sup>10</sup>. A healthy fetus with an activated sympathetic nervous system may be able to respond successfully to a difficult labour, resulting in severe acidosis which is then rapidly reversed after delivery<sup>15</sup>. On the other hand, a fetus compromised or with retarded growth before the onset of even a normal labour may not be able to adapt adequately<sup>16</sup>.

Deliveries by caesarean section might have been avoided on those occasions when there was not severe acidosis at birth had fetal blood sampling been used more often to assess the implication of the abnormal fetal heart rate patterns<sup>10</sup>.

In this study there was very little appreciation by clinicians for the dynamic nature of fetal adaptability to compromise and its reversibility. This study was done within a very short time and sample size was small. But this results may represent the obstetric practice of many hospitals in Bangladesh.

It is the responsibility of individual obstetric units to formulate their own policies as governed by their own

resources and populations and to audit the value of their own obstetric management. This is particularly important in modern obstetrics, where induction and augmentations are common.

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