A STUDY ON MECONIUM STAINED LIQUOR AND ITS OUTCOME ON THE FETUS

Gynaecology

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ABSTRACT

Aim: In this study the main aim is to study the outcomes on fetus and the mode of delivery in meconium stained liquor of the patients during labour.

Methods: This study was done for a period of one year from January 2016 to December 2016 in patients who were admitted for delivery in obstetrics and gynaecology department of JLNMC, Bhagalpur. Thorough examination, investigations and management were performed. A total of 100 cases were taken in the study. All Patients met the inclusion criteria of more than 37 weeks and with single pregnancy with cephalic presentation with meconium stained liquor. The data was analysed statistically. Results: most commonly primigravida with total 140 patients presented, postdate presented at 60 in number. APGAR score of the babies was more than 7 in 160 babies and less than 7 in 40 babies. 120 patients delivered by LSCS, 40 patients delivered normally, 40 patients delivered by instrumental delivery. Birth asphyxia and meconium aspiration syndrome was most common complications in fetus.

Conclusion- Meconium stained amniotic fluid is associated with increased neonatal morbidity and mortality. Caesarean sections were performed twice as frequently in women presenting with Meconium stained amniotic fluid.

KEYWORDS:
Meconium stained, amniotic fluid, Caesarean sections, APGAR

Introduction-
Meconium staining of the amniotic fluid has long been regarded as a sign of fetal distress. Although the exact cause is not known, meconium is thought to be passed from the fetal gastro-intestinal tract as a response to hypoxia, mesentric vasocostriction induced gut hyperperistalsis, falling umbilical venous saturation, vagal stimulation and normal physiological function of a mature fetus. The passage of meconium in utero has been described by various authors by different mechanisms. Three theories have been suggested for fetal passage of meconium.

1. The pathological explanation proposes that fetuses pass meconium in response to fetal hypoxia.
2. In utero passage of meconium represents normal gastrointestinal tract maturation, which is under neural control.
3. Commonly, meconium passage occurs following relaxation of anal sphincter and increased peristalsis due to vagal stimulation.

The risk factors for meconium stained amniotic fluid are both maternal and fetal. The maternal factors are hypertensio, Gestational Diabetes mellitus, maternal chronic respiratory or cardiovascular diseases, post term pregnancy, preeclampsia, eclampsia. The fetal factors include oligohydramnious, intrauterine growth restriction, poor biophysical profile. The main complications arising from MAF is MAS. The mechanical and chemical effects and the infl ammatory reactions caused by MAS may interfere with the normal transition to extrauterine life, causing airway obstructions, damage to lung tissue, inactivation of surfactants, chemical pneumonitis and decreased arterial oxygen pressure. The impact of MAS on neonatal mortality varies widely: from a mortality rate of 5/1,000 live births in a case-control study in Jordan to 96/1,000 live births in an Australian cohort with 2,490,862 live births. The presence of MSAF is believed to be one of the oldest and surest sign of fetal distress in utero due to fetal hypoxia. Foetal distress is defined as alterations in the foetal heart rate (FHR) more commonly bradycardia and the passage of meconium in response to the underlying foetal hypoxia. Variations in FHR, passage of the meconium in the amniotic fluid, pathological or abnormal CTG and decreased foetal scalp blood pH are strong indicators of fetal distress. MSAF occurs in 10% of pregnancies with most occurring at term or particularly post term. Mean APGAR scores were significantly lower and the proportion of neonates with poor APGAR scores were higher if thick meconium was present, but not for thin meconium.

Material and Methods
This study was done for a period of one year from January 2016 to December 2016 in patients who were admitted for delivery in obstetrics and gynaecology department of JLNMC, Bhagalpur. Thorough examination, investigations and management were performed. A total of 100 cases were taken in the study. All Patients met the inclusion criteria.

Inclusion criteria:
1. Patients with > 37 weeks of gestational age
2. Patients with MSL
3. Cephalic presentation;
4. Single pregnancy

Exclusion criteria:
1. Patients with other than cephalic presentation;
2. Patients with clear liquor after spontaneous or artificial rupture of membrane;
3. Preterm , intrauterine death , congenital anomalies, multiple pregnancies

Results
Most commonly primigravida with total 140 patients presented, postdate presented at 60 in number.

<table>
<thead>
<tr>
<th>Gestational age</th>
<th>Number of patients</th>
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<tbody>
<tr>
<td>Primigravida</td>
<td>140</td>
</tr>
<tr>
<td>Multigravida</td>
<td>60</td>
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APGAR score of the babies was more than 7 in 160 babies and less than 7 in 40 babies.

<table>
<thead>
<tr>
<th>APGAR score</th>
<th>Number of babies</th>
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120 patients delivered by LSCS, 40 patients delivered normally, 40 patients delivered by instrumental delivery.

<table>
<thead>
<tr>
<th>Method</th>
<th>Number of patients</th>
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<tbody>
<tr>
<td>LSCS</td>
<td>120</td>
</tr>
<tr>
<td>Normally</td>
<td>40</td>
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<tr>
<td>Instrumental</td>
<td>40</td>
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Birth asphyxia and meconium aspiration syndrome was most common complications in fetus.

Complication                  | Number of babies |
--------------------------------|------------------|
Birth asphyxia                 | 15               |
Meconium aspiration syndrome   | 18               |
Aspiration pneumonia           | 10               |
Septicemia                     | 7                |
Hyperbilirubinemia             | 5                |
Early neonatal death           | 3                |

**DISCUSSION:**

Many of the studies done in the past have identified maternal and neonatal characteristics associated with MSAF. In the study by Manganaro et al no significant difference in maternal age, parity, gestational age, sex, low 1 and 5 minute Apgar scores, metabolic acidemia, or need for endotracheal intubation was found between MSAF and non-MSAF infants. The presence of MAF during delivery varied between 10% and 16.6% in low risk pregnancies. The low incidence of MAF in our study may be explained by the fact that the majority of the women had a gestational age of 41 weeks and below. An American study observed 5.8% decline in MAS to 1.5%, attributing this to the 33% reduction in the number of deliveries at more than 41 weeks. There was a strong correlation between MAF and gestational age > 41 weeks, no correlation was noted between gestational ages < 40 weeks and MAF. The pathophysiology of MAS in prolonged pregnancies has been well established. Systematic revision found a lower perinatal mortality risk with elective induced labours; relative risk (RR): 0.30; confidence interval 95%: 0.09,0.09 and also risk of MAS (RR: 0.61; 95% CI 0.40,0.92) in pregnancies of 41 weeks or more without induction. A study of a cohort of 2,527,766 women observed that infants of pregnancies of more than 41 weeks were at greater risk of being large for their gestational age (OR = 1.27; 95% CI 1.17,1.37) and at greater risk of MAS (OR = 2.12; 95% CI 1.91,2.35). Debdas (1981) opined that in the group with thin meconium the babies are not generally depressed at birth and do not have any higher perinatal mortality rate in comparison to those with clear group. Other worker Arun (1991) observed 3.42% neonatal death. There were three neonatal death in a Patient with MSAF. The rate of neonatal asphyxia in the meconium stained cases was significantly higher than that without meconium. Early amnioinfusion could be beneficial in post dated pregnancies complicated by abnormal fetal heart rate patterns or pregnancies complicated by other high risk factors. Amnioinfusion can be used to relieve umbilical cord compression during labour, hence is useful in decreasing C-section rate. Prevention of MSA can be achieved by avoiding post maturity, as decreased term of gestation reduces perinatal mortality.

**Conclusion**

Meconium stained amniotic fluid is associated with increased neonatal morbidity and mortality. Caesarean sections were performed twice as frequently in women presenting with Meconium stained amniotic fluid. Increased incidence of MAS was found in babies who had either low Apgar score at 5 min or developed respiratory distress immediately after births.

**References**

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