ORIGINAL RESEARCH PAPER
VOLUME-6 | ISSUE-7 | JULY-2017 | ISSN No 2277 - 8179 | IF : 4.176 | IC Value : 78.46
INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

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 JLNMCH, 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 vasoconstriction 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 hpertension, Gestational Diabetes mellitus, maternal chronic respiratory or cardiovascular diseases, post term pregnancy, preeclampsia, eclampsia. The fetal factors include oligohydramnios, 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 surfactats, 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 is associated with higher rate of caesarean delivery, increased need for neonatal resuscitation and meconium aspiration syndrome. The incidence of meconium aspiration syndrome increases in case of non-reassuring FHR and clinical condition of the newborn at birth. The meconium aspiration syndrome can cause or contribute to neonatal death and in addition upto one-third of all cases in which aspiration occurs, develop long term respiratory compromise. The meconium stained amniotic fluid is a clinical diagnosis with no practical confirmatory test. However, various methods have been tried to detect the presence of meconium in liquor and to prevent meconium aspiration syndrome. These methods include Amnioscopy during early labour and oropharyngeal suction and endotracheal intubation after birth. The perinatal morbidity and mortality associated with meconium aspiration syndrome can be brought down if the high risks are identified in the antenatal period and careful decisions are made about the timing and mode of delivery and vigilant monitoring of the labour. The incidence of admission to newborn intensive care unit with, respiratory distress syndrome, meconium aspiration syndrome, neonatal asphyxia, chorioamnionitis, foetal distress or foetal acidosis were higher in pregnancies complicated by meconium stained liquor. 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 JLNMCH, 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

Gestational age	Number of patients
Primigravida	140
Multigravida	60

APGAR score of the babies was more than 7 in 160 babies and less than 7 in 40 babies.

APGAR score	Number of babies

>7	160
<7	40

120 patients delivered by LSCS, 40 patients delivered normally, 40 patients delivered by instrumental delivery.

	Number of patients
LSCS	120
Normally	40
Instrumental	40

Birth asphyxia and meconium aspiration syndrome was most common complications in fetus.

Complication	Number of babies
Birth asphyxia	15
Meconium aspitration 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; confi dence interval 95%: 0.09;0.99 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 big 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 amniotomy could be beneficial in post dated pregnancies complicated by abnormal foetal 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 CSection 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

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