

Study of Fetal Outcomes in Patients with Meconium Stained Liquor**Dr. Heenal Vaghela***, **Dr. Kokila Chaudhary****, **Dr. Vandana K. Saini*****

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KEY WORDS : Meconium , Respiratory Distress Syndrome**ABSTRACT****INTRODUCTION** : Meconium stained liquor is a sign of intrauterine fetal jeopardy. Meconium aspiration syndrome is the aspiration of stained amniotic fluid which can occur before, during or immediately after birth. Aspiration causing pulmonary infection , decreasing oxygen saturation, cyanosis and respiratory distress syndrome.**MATERIALS AND METHODS** : IN prospective observational study was done in a tertiary care hospital including 100 women laboring in 1 year of duration and who had developed meconium stained liquor. delivered by normal delivery or cesarean section. The neonatal outcome is observed for 1 year.**RESULTS** : IN this study meconium stained liquor was more common in primigravidas within the age group of 21-30 years of age with moderate type of meconium being more common .**CONCLUSION** : in this study we concluded that meconium stained liquor more commonly seen in primigravidas which have associated risk factors like preclampsia, malposition, prolonged labour and abnormal uterine inertia.**INTRODUCTION**

Meconium the gastrointestinal excreta of the foetus is a green admixture of intestinal epithelial cells , lanugo, vernix, mucous and gastrointestinal secretion such as bile , liver enzymes and pancreatic juice. The passage of meconium is regulated by the hormone named MOTILIN responsible for bowel peristalsis and defecation. It causes contraction of smooth muscle in the gut wall.

Meconium directly alter amniotic fluid decrease antibacterial activity and increased risk of perinatal bacterial infection and meconium is irritating to fetal skin increase the incidence of erythema toxicum. However the most severe complication of meconium aspiration is meconium aspiration syndrome.

Meconium aspiration occurs due to foetal breathing movement causing inhalation of meconium into the lungs causing partial or complete airway obstruction, surfactant dysfunction and chemical pneumonitis.

MECONIUM ASPIRATION SYNDROME

MAS it is diagnosed if any of 2 criteria are present Meconium staining of liquor or meconium staining of nails\toes\umbilical cord

Respiratory distress soon after birth within one hour.

Radiological evidence of aspiration pneumonitis (atelectasis or hyperinflation)

Severe meconium aspiration syndrome is associated with profound hypoxia, persistent foetal circulation, resistant pulmonary hypertension, pulmonary hemorrhage and necrosis of pulmonary vessels. It also enhances bacterial growth and is associated with intrauterine infection and can lead to infectious pneumonitis.

MATERIAL AND METHODS

Sample size 100

Study population laboring mothers with meconium stained fluid who delivered or underwent cesarean section in the institute.

Study period 1 year

Type of study Prospective Observational study

Study location Obstetrics and Gynecology department of Tertiary Care Hospital , Ahmedabad.

Inclusion criteria

1. Laboring mothers with Meconium Stained Liquor who gave permission to participate in the study
2. Cephalic presentation
3. Live singleton pregnancy
4. Pregnancy without any congenital malformation

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EXCLUSION CRITERIA

Mothers in labour were excluded from study with following criteria

1. Pre-term labour (<34 completed weeks)
2. Antepartum hemorrhage
3. Breech presentation
4. Transverse lie
5. Multiple pregnancy
6. Pregnancy with congenital malformation
7. Intrauterine death

RESULTS AND DISCUSSION

Table 1 : Age wise Distribution of Patients

AGE(YEARS)	NO. OF CASES	PERCENTAGE
<20	19	19
21-25	57	57
26-30	17	17
31-35	6	6
>35	1	1
TOTAL	100	

Majority of the patients were in the age group of 21-30 year i.e. 74%. This could be because in our maximum number of deliveries occur in this group.

Mean maternal age was 24+5 years in which meconium in liquor was observed

Table 2 : Correlation Between Parity and Meconium Stained Liquor

PARITY	NO. OF CASES	PERCENTAGE
Primipara	58	58
Multipara	42	42
TOTAL	100	

From the above table, it seems that maximum incidence of meconium stained amniotic fluid was found in primigravida i.e. 58%. This may be due to associated risk factors like PIH. Prolonged labour due to minor degree of cephalopelvic disproportion, malposition and uterine inertia is also more common in primies.

70 % of patients with meconium stained amniotic fluid were registered and rest 30% patients were emergency cases. Out of 30 emergency cases, most were referred from private hospital or coming from remote areas. Many of them having associated maternal illness like pre-

eclampsia, anemia, fever, jaundice, etc. So number of cases having thick meconium and perinatal mortality was also higher in emergency cases.

Table 3 : Correlation Between type of Admission, Character of Meconium and Perinatal Mortality

Type of Admi-Ssion	No. of Cases	No. of Cases with thick Meconium	Perinatal Mortality (No. of cases)	Perinatal Mortality (%)
Registered	70	11	1	1.42
Emergency	30	17	4	13.33
TOTAL	100	28	5	

Table 4 : Correlation Between Meconium Staining and Foetal Distress

Type of Meconium	No. of babies with foetal distress	Percentage
Thin (38)	3	12
Moderate(34)	9	36
Thick(28)	13	52
TOTAL	25	

Foetal distress may be alone or associated with obstructed labour, failed progress and cord problems like tight loop around neck of foetus.

The overall incidence of foetal distress in meconium stained amniotic fluid was 25%. Out of which, 52% cases with thick meconium liquor developed foetal distress as compared to 36% cases with moderate and only 12% with thin meconium stained liquor.

Table 5 : Mode Of Delivery And Meconium Stained Amniotic Fluid

Type of meconium	Vaginal Delivery	LSCS	Vaccum (Instrumental Delivery)
Thin(38)	24(63.15%)	12(31.57%)	2(5.26%)
Moderate(34)	15(44.11%)	17(50%)	2(5.88%)
Thick(28)	2(7.14%)	25(89.28%)	1(3.57)
TOTAL	41	54	5

46% of patients delivered vaginally (spontaneous 41 %, instrumental 5%) and 54% underwent cesarean section.

NICU admission was required in 30 cases , 13 cases had thick meconium. Moderate and thin meconium was noted in 13 cases and 4 cases respectively.

All 4 cases with thin meconium recovered well with oxygen therapy and hence were kept with mother.

Table 6 : Meconium Stained Liquor and Nicu Admission

TYPE OF MECONIUM	NO. OF CASES	NICU Admission
Thin	38	04
Moderate	34	13
Thick	28	13
TOTAL	100	30

CONCLUSION

Meconium staining of amniotic fluid and meconium aspiration syndrome are not uncommon problem.

There were association of maternal age, parity, gestational age more at term pregnancy and predisposing factors like postdate, oligohydramnios, hypertensive disorder, preterm delivery with meconium stained liquor. So incidence of msl causing neonatal morbidity and mortality was higher in those who had completed their birth term and had appropriate birth weight for gestational age with more incidence of grade 1 MSL.

There were significant association with different method induction of labour, non-reactive NST with higher grade of MSL 2 and 3. MSL alone was not associated with adverse neonatal outcome.

Perinatal mortality more with grade 3 had MAS, required intervention like CPAP, ventilator support had mortality rate 3.5%. So, grade 3 MSL had major impact on both mode of delivery and neonatal outcome than other grade of msl. So, required early and timely diagnosis, close monitoring and timely obstetrical intervention and appropriate postnatal care to minimize meconium complication and improve fetal outcome.

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