

## TO DETERMINE THE INCIDENCE OF MECONIUM STAINED LIQUOR (THIN / THICK) DURING LABOR

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### Abstract

**Background & Method:** The present study was conducted in the Department of Obstetrics and Gynaecology, Amaltas Institute of Medical Sciences, Dewas. 904 cases with OR without Intra-partum meconium staining were selected for the study, following exclusion criteria. Study Group (Group1), comprised of 100 cases with Intra-partum meconium stained liquor.

**Result:** The mean age is 25.94 and stand deviation is 4.78. In table – 3 in the study group of age 20 years and below had MSL in 11 cases (9.73%), 49 cases (24.13%) in the age group of 21 years to 25 years, In the 26 years to 29 years of age group there were 17 patients (6.80%) with meconium stained liquor. 14 cases (9.21%) were in the age group of 30 to 34 years. The age group of 35 years and above had 9 patients (10.46%). The mean age is 25.94 and  $\pm$  SD 4.78. no significant was found.

**Conclusion:** Thin MSL was present in 50% of cases where as 50% had moderate and thick staining which had significant adverse perinatal outcome. A selective aggressive approach to the neonate, exposed to MSL resulting in reduction of neonatal intubation and reduces MAS. Thick MSL alone should alert the physician to high risk fetal condition.

**Keywords:** meconium, labor, liquor

### Introduction

Meconium is derived from the Greek word “mekonion” meaning poppy juice or opium. Aristotle is credited for noting the relationship between the presence of meconium in amniotic fluid and a sleepy fetal state in utero. Meconium stained amniotic fluid, as a result of the passage of fetal colonic contents into the amniotic cavity, is noted in approximately 7% to 20% of live birth<sup>[1]</sup>. Meconium aspiration syndrome (MAS) is noted in 5% of these infants and more than 4% of neonates die of MAS<sup>[2]</sup>, accounting for 2% of all perinatal deaths<sup>[3]</sup>.

In utero, meconium passage rarely occurs before 34 weeks of gestation and most babies with meconium stained amniotic fluid are 37 weeks or older. The incidence of meconium stained amniotic fluid increases with the gestational age, reaching as high as 30% in post-term pregnancies. An increased incidence of meconium passage, independent of fetal maturation, into the amniotic cavity is also noted in the presence of fetomaternal stress factors such as hypoxia and infection<sup>[4]</sup>.

Meconium itself may have potentially detrimental effects on fetal tissues and organs, although fetuses with meconium-stained amniotic fluid are commonly born without any adverse sequelae. Among the adverse effects, meconium in the amniotic fluid has been suggested to stimulate umbilical vessel constriction, vessel necrosis, and

production of thrombi, potentially associated with ischemic cerebral palsy<sup>6</sup>. Meconium alters the level of zinc in amniotic fluid, which may reduce the antibacterial properties and possibly facilitate intra-amniotic infection<sup>[5]</sup>.

### Material & Method

The present study was conducted in the Department of Obstetrics and Gynaecology, Amaltas Institute of Medical Sciences, Dewas (M.P) during the period from August 2018 to July 2019. Cases were selected from expectant mothers who were admitted for confinement in the department of Obstetrics & Gynaecology.

### Inclusion Criteria

- Patient in active phase of labor
- Term pregnancy
- Post-term pregnancy
- Singleton fetus-Cephalic presentation

### Exclusion Criteria

- Post-term Pregnancy( more than 42 weeks)
- Pregnancy with hypertension
- Post caesarean pregnancy
- Multiple pregnancy
- Ante partum hemorrhage

- Diabetes in pregnancy
- Abnormal presentation.
- Cephalic-pelvic disproportion
- PROM

During the study period, 904 cases with OR without Intrapartum meconium staining were selected for the study, following exclusion criteria. Study Group (Group1), comprised of 100 cases with Intrapartum meconium stained liquor.

Control Group (2), comprised of 804 cases with clear liquor in the intrapartum period. Following selection of the cases, a detailed history was obtained as per proforma recorded in the labour room including age, parity, past obstetrical, medical, surgical history, history of present pregnancy for any abnormality and whether the labour was spontaneous or induced. General and systemic examination was done to rule out antecedent/ gestationally induced complication. Thorough per abdominal examination was done to find out the height of fundus, presentation, position, amount of liquor, expected fetal weight and gestational age of fetus. Assessment of cervix and pelvis; and station of head were also recorded. Use of any medication like Antibiotic, oxytocin, analgesics and sedatives were noted.

## Results

**Table 1:** Incidence of intrapartum meconium stained liquor

Liquor colour	Number of patients	Percentage
Clear	804	88.90%
Meconium stained	100	11.10%

The number of cases which fulfilled the inclusion and exclusion criteria was

904. Therefore result and analysis was done of these 904 patients. Table – 1 shows that out of 904 deliveries, meconium stained liquor was seen in 100 cases. So the incidence of intrapartum meconium stained liquor in our study was 11.10%.

**Table 2:** Clinical gradation of meconium staining according to color and consistency (study group)

Gradation of meconium	Number of cases(n=100)	Percentage
Thinly stained liquor	50	50%
Moderately stained liquor	26	26%
Thickly stained liquor	24	24%

Table - 2 shows that of those 100 cases with meconium stained liquor, 50 cases (50%) had thin staining (light green), 26 patients (26%) had moderately stained meconium (yellow) and 24 of them (24%) had thickly stained liquor.

**Table 3:** Incidence of meconium stained liquor in different maternal age group

AGE Group in years	Control group (Clear liquor)		Study group (MSL)	
	N	%	N	%
≤ 20 (n-124)	113	8.87	11	9.73
21-25 (n-252)	203	19.44	49	24.13
26-29 (n-267)	250	6.36	17	6.8
30-34 (n-166)	152	8.43	14	9.21
≥ 35 (n-95)	86	9.47	9	10.46
Total	804	11.06	100	12.43

The mean age is 25.94 and stand deviation is 4.78. In table – 3 in the study group of age 20 years and below had MSL in 11 cases (9.73%), 49 cases (24.13%) in the age group of 21 years to 25 years, In the 26 years to 29 years of age group there were 17 patients (6.80%) with meconium stained liquor. 14 cases (9.21%) were in the age group of 30 to 34 years. The age group of 35 years and above had 9 patients (10.46%). The mean age is 25.94 and ± SD 4.78. no significant was found.

## Discussion

Thin MSL was in present in 50% of cases where as 50% had moderate and thick staining which had significant adverse perinatal outcome. Consistency of meconium staining Barham (1969)<sup>[6]</sup> classified meconium stained liquor into three groups according to different colours – light (50.82%), yellow (19.3%) and dark green (29.85%). In the present study, meconium stained liquor was classified into three grades. Which was thinly stained in 50%, moderately stained was 26% and thickly stained were 24%. Priyadarshini et al<sup>[7]</sup> found thin MSL = 86(34.4%), moderate MSL = 102(40.8%), thick MSL =62 (24.8%). Our study was consistent with the study of Barham et al<sup>[6]</sup>.

There was no statistically significant correlation between maternal age and meconium stained liquor, although incidence was relatively higher in maternal age group of 35 years and more which is comparable to Mahapatro et al (2014)<sup>[5]</sup> who also found increased incidence of thick meconium, 11.43%, when maternal age group was above 30 years. Mundhara et al<sup>[8]</sup> 2013 also found higher incidence of thick MSL in mothers with advance maternal age. Similarly to our study Osava RH et al<sup>[9]</sup> did not find correlation between maternal age and meconium stained liquor.

### Conclusion

Thin MSL was present in 50% of cases whereas 50% had moderate and thick staining which had significant adverse perinatal outcome. A selective aggressive approach to the neonate, exposed to MSL resulting in reduction of neonatal intubation and reduces MAS. Thick MSL alone should alert the physician to high risk fetal condition.

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