

## Perinatal Outcome in Meconium stained liquor

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### Abstract

#### Aims and Objectives

To determine the effect on mode of delivery and fetal outcome in meconium stained liquor.

#### Materials and Methods

This is a retrospective study conducted from July 2019 to December 2019 on patients admitted to Labour room, VGH. Out of 2340 deliveries 267 patients who met the inclusion criteria were enrolled in our study. The data was collected in a pre-designed proforma.

#### Results

Out of 267 cases 80 patients (29.9%) had grade 1 meconium stained liquor, 125 patients (46.8%) had grade 2 meconium stained liquor and 62 patients (23%) had grade 3 meconium stained liquor. Out of 267 cases 165 cases (61%) delivered by caesarean section remaining 102 cases delivered vaginally. APGAR at 1min and 5 min were low in grade 2 and grade 3 meconium stained liquor. Meconium aspiration syndrome was seen in 37% cases associated more with grade 3 meconium stained liquor. There is significant association of past dates and gestational hypertension with meconium stained liquor.

#### Conclusion

86.8% cases of meconium stained amniotic fluid remained asymptomatic thus meconium stained liquor alone is not associated with an adverse outcome. Increase in grades of meconium stained liquor is associated with increase in Caesarean section rate, neonatal resuscitation, meconium aspiration syndrome and birth asphyxia.

#### Keywords

Meconium stained amniotic fluid, Meconium aspiration syndrome, APGAR SCORE, Caesarean section rate, Birth asphyxia.

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### I. Introduction

Naturally meconium passage occurs with in the first 24-48 hours after birth. Meconium passage is rare before 34 weeks of gestation. Incidence increase after 37 weeks steadily with increase in gestational age. Exact aetiology is not known, meconium is thought to be passed from fetal gut as a response to hypoxia – mesenteric vasoconstriction induce gut hyper peristalsis before birth of baby. The incidence is 10% of all pregnancies. In 5% of these, the meconium is aspirated into the lungs of neonate resulting in severe respiratory distress, meconium aspiration syndrome. Maternal risk factors are postdated, pre-eclampsia, gestational diabetes, cardiovascular and chronic respiratory disease. Fetal risk factors are IUGR, Oligoamnios, poor biophysical profile etc. Intrapartum factors such as prolonged labour significantly associated with meconium stained liquor. To detect the presence of meconium in liquor and to prevent meconium aspiration syndrome several methods have been tried of which amniotomy in early labour is one. Incidence of SNCU admissions with respiratory distress syndrome, meconium aspiration syndrome, chorioamnionitis, fetal distress, asphyxia were higher in pregnancies with meconium stained liquor. The perinatal morbidity and mortality associated with meconium aspiration syndrome can be brought down if high risk factors are identified in the antenatal period and careful monitoring of labour, timing and mode of delivery. This study was conducted out to determine fetal outcome and mode of delivery in pregnant women with meconium stained liquor.

### AIMS AND OBJECTIVES

To determine the mode of delivery and fetal outcome in meconium stained liquor during labour.

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**INCLUSION CRITERIA AND EXCLUSION CRITERIA**

Inclusion criteria are singleton pregnancy, cephalic, >37weeks in patients with meconium stained liquor after spontaneous or artificial rupture of membranes during labour.

Exclusion criteria are multiple pregnancy, non cephalic presentation like breech, transverse lie, compound presentation, previous caesarean section.

**II. Materials And Methods**

This retrospective study was conducted on patients admitted to Laborroom , VGH from July 2019 to December 2019. The patients who fulfilled the inclusion criteria were enrolled in our study. Out of 2340 deliveries 267 cases had meconium stained liquor. All patients detailed history, gestational age, per abdomen , per vaginal examination findings were recorded. Meconium was classified into three grades by visual examination during spontaneous or artificial rupture of membranes.

Grade 1-Translucent, light yellow green in color

Grade2-Opalcent with deep green and light yellow in color

Grade 3 – Opaque and deep green in color.

Patients were carefully monitored for progress of labour by plotting the parameters on partograph . All patients underwent trail of labour and cesarean section rate was done only if trail of labour was unsuccessful or if any obstetric indications including fetal distress.Neonate information such as APGAR at 1min and 5min, birth weight, NICU admissions and neonates who had meconium aspiration syndrome and birth asphyxia.

**III. Results And Observations**

**Table 1:**

| TOTAL NO. OF DELIVERIES | GRADE 1 MSL | GRADE 2 MSL | GRADE 3 MSL |
|-------------------------|-------------|-------------|-------------|
| 2340                    | 80 (29.9%)  | 125 (46.8%) | 62 (23.2%)  |

**Table 2: Mode of delivery in different grades of MSL**

| GRADES OF MSL | VAGINAL DELIVERY | INSTRUMENTAL DELIVERY | CESAREAN SECTION | TOTAL |
|---------------|------------------|-----------------------|------------------|-------|
| GRADE 1       | 51(63.75%)       | 02(2.5%)              | 27(33.75%)       | 80    |
| GRADE 2       | 35(28%)          | 06(4.8%)              | 84(67.2%)        | 125   |
| GRADE 3       | 06(9.6%)         | 02(3.22%)             | 54(87.09%)       | 62    |
|               | 92(34.4%)        | 10(3.74%)             | 165(61.79%)      | 267   |

**TABLE 3 : APGAR SCORE AND GRADES OF MSL**

| GRADES OF MSL | <7         | >7         | TOTAL |
|---------------|------------|------------|-------|
| GRADE 1       | 01(1.17%)  | 79(98.75%) | 80    |
| GRADE2        | 08(6.4%)   | 117(93.6%) | 125   |
| GRADE 3       | 10(16.12%) | 52(83.8%)  | 62    |
| TOTAL         | 19         | 248        | 267   |

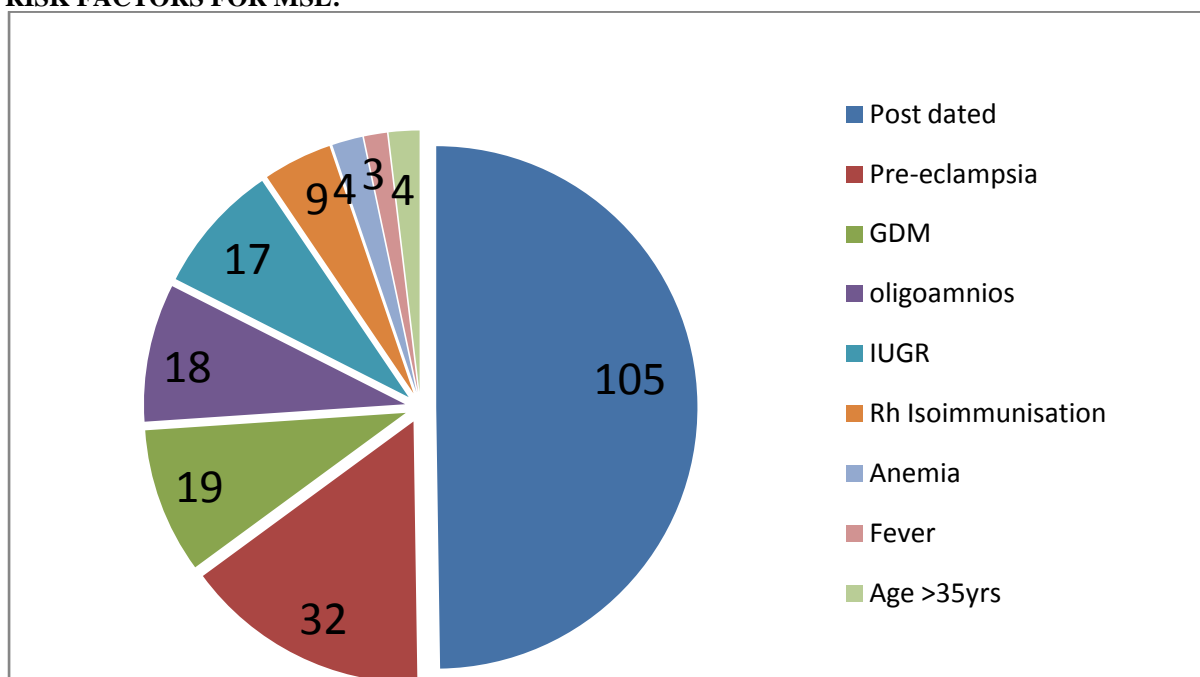
**TABLE 4 : BIRTH WEIGHT AND GRADES OF MSL**

| GRADES OF MSL | BIRTH WEIGHT <2.5KG | BIRTH WEIGHT >2.5KG |
|---------------|---------------------|---------------------|
| GRADE 1       | 15(57.69%)          | 65(26.9%)           |
| GRADE 2       | 04(15.38%)          | 121(50.20%)         |
| GRADE3        | 07(26.92%)          | 55(22.82%)          |
| TOTAL         | 26(9.73%)           | 241(90.26%)         |

**TABLE 5 : NEONATAL OUTCOME ACCORDING TO GRADES OF MSL**

| GRADES OF MSL | ASYMPTOMATIC ROUTINE CARE | NICU ADMISSIONS (n=35) | VENTILATOR | MECONIUM ASPIRATION SYNDROME | BIRTH ASPHYXIA |
|---------------|---------------------------|------------------------|------------|------------------------------|----------------|
| GRADE 1       | 75                        | 05                     | 1          | 1                            | 1              |
| GRADE 2       | 116                       | 09                     | 4          | 2                            | 1              |
| GRADE 3       | 41                        | 21                     | 13         | 10                           | 2              |
| TOTAL         | 232(86.8%)                | 35(13.1%)              | 18(51.42%) | 13(37.1%)                    | 04(11.4%)      |

**RISK FACTORS FOR MSL:**



**IV. Discussion**

The exact reason for passage of meconium poorly understood. It is physiological event reflecting fetal maturity after delivery. In utero passage of meconium is thought to be due to fetal distress. Incidence increases with increase in gestational age. Acute or chronic early hypoxia can result in meconium passage in utero. Complications of meconium stained liquor - fetal distress, meconium aspiration syndrome and increased operative intervention. Infants with APGAR <7 at 5 min are 3 times more likely to have neurological abnormalities. Low APGAR may be due to direct vasoconstrictor effect of meconium on umbilical vein results in vasospasm in turn leading to impaired placental flow. In our study out of 2340 deliveries 267 cases had meconium stained amniotic fluid of which grade 1 are 80(29.9%), grade 2 are 125(46.8%), grade 3 are 62(23.2%). Outcome of 267 deliveries -102 VAGINAL DELIVERIES, 165 C-SECTION higher with grade 3 MSL. 19 babies were with APGAR <7- GRADE 1-1, GRADE 2-8, GRADE 3 -10. Low birth weight Babies were 26 - GRADE 1-15, GRADE 2-4, GRADE 3-7.

**V. Conclusion**

86.8% cases were asymptomatic required routine care at Birth thus meconium stained amniotic fluid alone is not associated with an adverse outcome.

Increase in grades of meconium stained liquor is associated with increase in cesarean section rate, neonatal resuscitation, meconium aspiration syndrome and birth asphyxia.

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