

## STUDY ON MATERNAL RISK FACTORS AND FETAL OUTCOME IN DELIVERIES WITH MECONIUM STAINED AMNIOTIC FLUID

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### Abstract

**Background:** Meconium is a dark greenish mass of desquamated cells, mucus, and bile that accumulates in the bowel of a fetus and is typically discharged shortly after birth. Meconium-stained amniotic fluid has long been considered to be a bad predictor of fetal outcome. Presence of meconium in amniotic fluid is a potentially serious sign of fetal compromise and associated with poor perinatal outcome. This prospective observational study was undertaken to find out maternal risk factor and fetal outcome in meconium-stained deliveries. The aim of the study is to find the association of risk factors like GHTN, Postdatism, GDM, oligohydramnios, IUGR in fetus who passed meconium in utero. To evaluate fetal outcome in terms of neonatal death. **Materials and Methods:** This is a prospective observational study. Study period is 2 months (November and December 2021). Conducted at Government Dharmapuri Medical College, Obstetrics and Gynaecology department. Sample size is 100. Study was conducted in patients with cephalic presentation with meconium-stained liquor after spontaneous or artificial rupture of membranes. Amnio infusion with 1 ltr of normal saline was given for all women with Meconium-stained liquor. Labour and fetal heart rate monitoring with CTG was done using partograph and fetal outcome was noted. **Result:** We noted high risk pregnancies like gestational hypertension (10%), intrauterine growth restriction (5%), gestational diabetes mellitus (2%), oligohydramnios(15%), were associated in fetus with meconium stained liquor. 68% patients had no antenatal high risks. **Conclusion:** Meconium stained amniotic fluid in found to be associated with maternal risk factors like GHTN(PIH) , GDM, IUGR, oligohydraminos and post dated pregnancies. Meconium stained liquor is more commonly associated with caesarean delivery. Continuous intrapartum monitoring and immediate intervention with availability of operation theatre and NICu facility might lead to reduction in adverse neonatal outcome in patients with meconium stained amniotic fluid.<sup>[2,3]</sup>

## INTRODUCTION

Meconium is a dark greenish mass of desquamated cells, mucus, and bile that accumulates in the bowel of a fetus and is typically discharged shortly after birth. Meconium-stained amniotic fluid has long been considered to be a bad predictor of fetal outcome<sup>[Ref 1]</sup>. Presence of meconium in amniotic fluid is a potentially serious sign of fetal compromise and associated with poor perinatal

outcome. This prospective observational study was undertaken to find out maternal risk factor and fetal outcome in meconium-stained deliveries.<sup>[Ref 4]</sup> The incidence is less before 34 weeks of gestation and appears to increase as the gestational age increases and it is due to maturation of the fetal intestinal myelination and parasympathetic innervations. The fetus tends to aspirate when it takes the first breath after birth and results in MAS. Those babies need

immediate resuscitation to prevent the perinatal morbidity and mortality.

### Aim of Study

1. The primary objective is to find the association of risk factors like GHTN, Postdatism, GDM, oligohydramnios, IUGR in fetus who passed meconium in utero.
2. To evaluate fetal outcome in terms of neonatal death .

## MATERIALS AND METHODS

This is a prospective observational study. Study period is 2 months (November and December 2021). Conducted at Government Dharmapuri Medical College, Obstetrics and Gynecology department. Sample size is 100. Study was conducted in patients with cephalic presentation with meconium-stained liquor after spontaneous or artificial rupture of membranes. Labour and fetal heart rate monitoring with CTG was done using partograph and fetal outcome was noted. All the babies were followed continuously daily till discharge from the hospital.

## RESULTS

During the study period, out of 2179 deliveries happened in 2 Months 182(8%) of deliveries were meconium stained deliveries.

In our study about 86% belong to 20-25 years, 12% belong to <20 years and 2% belong to > 25 years.

Term patients (37-40 weeks) were 70%, post-dated patients (>40 weeks) were 26% and preterm patients (<37weeks) were 4%.

Among the 100 meconium-stained liquor cases 28 % patients delivered by labour natural, 70% patients delivered by LSCS, 2% delivered by instrumental delivery.<sup>[Ref 5,6]</sup>

We noted high risk pregnancies like gestational hypertension (10%), intrauterine growth restriction (5%), gestational diabetes mellitus (2%), oligohydramnios (15%) was found associated with meconium-stained liquor cases. 68% patients had no antenatal high risks.

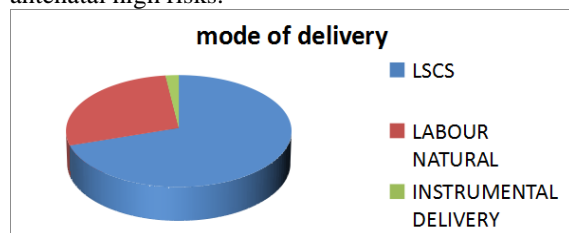


Figure 1: Mode of Delivery

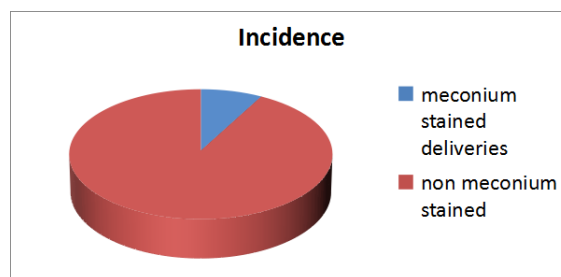


Figure 2: Incidence

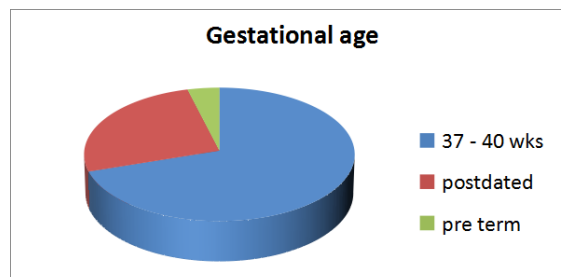


Figure 3: Gestational Age

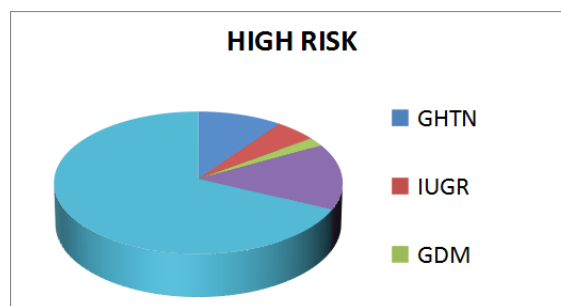


Figure 4: High risk

## DISCUSSION

- Of all the 100 MSL babies about 88% of babies discharged and 12% of babies died due to complications.
- Out of 12% babies who died, 2,% were due to MAS, 2.5% due to septicemia, 1.5% due to HIE, 4.5% due to RDS and 0.5% due to pulmonary hemorrhage.
- In our study 70% of the patients with meconium-stained liquor were term patients compared to that in the study by Vaghela et.al (67%)<sup>[Ref.7]</sup>
- With respect to the grading of meconium, out of 12% babies about 8% were thick meconium stained, 3% were moderately meconium stained and 1% were thin meconium stained.
- Out of 12% babies 8% were delivered by LSCS and 4% were delivered by labor natural.

high risk pregnancies like gestational hypertension (10%), intrauterine growth restriction (5%), gestational diabetes mellitus (2%), oligohydramnios(15%), were associated in fetus with meconium stained liquor. 68% patients had no antenatal high risks.

## CONCLUSION

- Early identification of MSAF in labouring women during intra-partum monitoring and availability of operation theatre for immediate intervention is required to reduce the perinatal morbidity and mortality.
- The study confirmed our clinical impression that meconium stained amniotic fluid adversely affect fetal outcome especially when it is thick or associated with fetal heart rate abnormality.
- Continuous intrapartum FHR monitoring, gradation of meconium, and progress of labour should be considered in the management of meconium-stained deliveries.<sup>[Ref 8,9]</sup>
- It is important to register all high-risk patients at tertiary centre with NICU availability.
- Also, it is mandatory to have NICU facilities in all maternity homes where babies with MSAF are delivered.
- This study advances our knowledge and understanding in the field of presence of MSAF in terms of need of identification of antenatal high risks, close monitoring of foetus, mindful intervention, and presence of skilled neonatologist, obstetrician and anaesthetist at the time of birth so as to decrease perinatal mortality and morbidity.

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