

Correlation of Nature of Amniotic Fluid with Maternal Risk on Neonatal Outcome at GMC, Ratlam

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Abstract

Background: After taking ethical clearance from hospital ethical board, this prospective study is being conducted at Govt. Medical College, Ratlam with a sample size of 149. All newborn babies born through MSAF will be included. Relevant history, clinical examination and relevant investigations would be done. **Subjects and Methods:** This prospective study is being conducted from 01/06/2016 to 01/6/2017 at Govt. Medical College, Ratlam with a sample size of 149. All newborn babies born through MSAF will be included. Relevant history, clinical examination and relevant investigations would be done. **Results:** Average number of maternal risk factors is 18(12%); of which 9 cases(6.82%) belong to thin MSL and 9 cases (50%) belong to thick MSL. The mean difference between two groups is statistically significant (p value= .000). It comprises: PIH-13 cases (8.67%) of which 5 cases (3.79%) are thin MSL and 8 cases (44.4%) belong to thick MSL; Oligohydramnios-3 cases (2%), all 3 cases (2.27%) are from thin MSL and 0 case from thick MSL; GDM-2 cases(1.34%), thin MSL comprises 1 case(0.76%) and thick MSL comprises 1 case (5.55%). **Conclusion:** Meconium stained liquor is more commonly associated with PIH, post-datism, oligohydroamnios and DM, etc. Risk factors which were associated with MSAF were PIH in 8.67%, oligohydramnios in 2% of the cases, GDM in 1.34% cases. (p value= .000), which is significant.

Keywords: Amniotic Fluid, Maternal Risk, Neonatal & Outcome.

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Introduction

Lightly stained meconium had a poor correlation with fetal hypoxia.^[1] MAS is more frequently seen in post term pregnancy or in growth restricted fetuses. Factors such as placental insufficiency, maternal hypertension, pre-eclampsia, oligohydroamnios or maternal drug abuse (tobacco or cocaine) result in, in utero passage of meconium.^[2]

Amniotic fluid (AF) is a biological medium uniquely suited for the study of early exposure of the human fetus to environmental contaminants acquired by the mother before and during pregnancy. Traditional diagnostic applications of AF have focused almost exclusively on the diagnosis of genetic aberrations.^[3]

Subjects and Methods

After taking ethical clearance from hospital ethical board, this prospective study is being conducted from 01/06/2016 to 01/6/2017 at Govt. Medical College, Ratlam with a sample size of 149. All newborn babies born through MSAF will be included. Relevant history, clinical examination and relevant investigations would be done.

Inclusion Criteria:

- All singleton babies born with meconium stained liquor in the hospital during the study period.
- All those who had given consent.

Exclusion Criteria:

- Babies born at < 34 completed weeks of gestation.
- Absence of meconium in the amniotic fluid.
- Respiratory distress due to other etiologies.
- Presence of major congenital anomaly.
- Still born babies.
- Twin deliveries.

All neonates included in the study will have the following done:

1. Detailed maternal history like age, parity, LMP, EDD, LPV, BPV, immunization status, gestational age, caste, infection, hypertension, nature of amniotic fluid, drugs will be noted.
2. Details of labour, mode of delivery, presence of complications if any will also be recorded.
3. Thorough clinical examination of the neonates will be done.

Results

Average number of maternal risk factors is 18(12%); of which 9 cases(6.82%) belong to thin MSL and 9 cases (50%) belong to thick MSL. The mean difference between two groups is statistically significant (p value= .000).

It comprises: PIH-13 cases (8.67%) of which 5 cases (3.79%) are thin MSL and 8 cases (44.4%) belong to thick MSL; Oligohydramnios-3 cases (2%), all 3 cases (2.27%) are from thin MSL and 0 case from thick MSL; GDM-2 cases(1.34%), thin MSL comprises 1 case(0.76%) and thick MSL comprises 1 case (5.55%).

Table 1: Correlation of nature of amniotic fluid with maternal risk factors.

Nature of amniotic fluid	Number of cases with PIH	Percentage of cases with PIH	Number of cases with Oligohydramnios	Percentage of cases with Oligohydramnios	Number of cases with GDM	Percentage of cases with GDM	Average number of maternal risk factors	Total %
Thin MSL	5/131	3.81%	3/131	2.29%	1/131	0.76%	9/131	6.87%
Thick MSL	8/18	44.4%	0/18	0%	1/18	5.55%	9/18	50%
Total	13/149	8.72%	3/149	2.01%	2/149	1.34%	18/149	12.08%

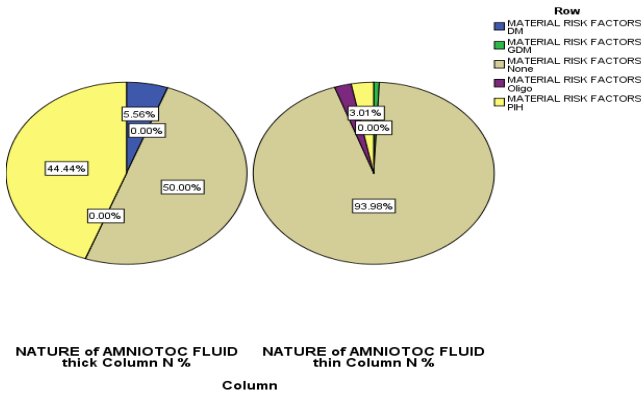


Figure 1: Correlation of nature of amniotic fluid with maternal risk factors.

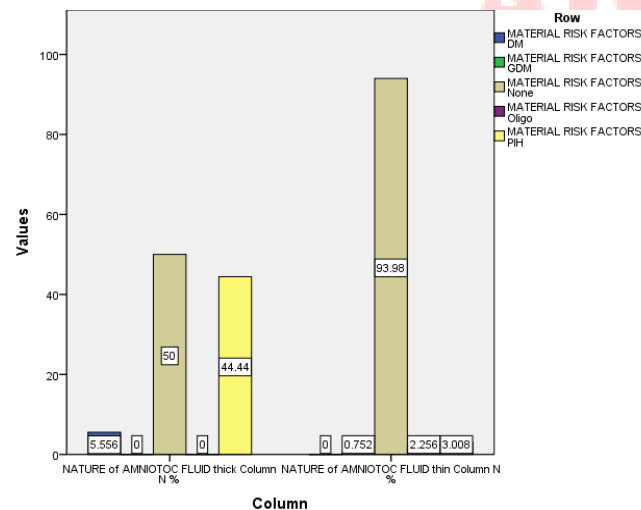


Figure 2: Correlation of nature of amniotic fluid with maternal risk factors

Discussion

Maternal risk factors: Average number of maternal risk factors is 18(12%). It comprises: PIH, Oligohydramnios,

GDM. The p value is .000 which is statistically significant. Desmond⁴, Fujikura⁵ concluded that actual causes or factors which control meconium passage are due to diminished O₂ transfer, toxemia, hypertension, anemia, obesity, type of labour, maternal age, prolonged gestation were associated with high incidence of meconium passage. Meis⁶ (1978) observed that in pre-eclampsia incidence of meconium staining was three times more than control group, in prolonged labour two fold incidence. Our findings are consistent with the findings of Fujikura and Meis.^[5,6]

In Casey et al,^[7] the mean maternal age was 23.9 years which is comparable to the present study. In Donald D et al,^[8] the incidence of oligohydramnios was 60% in primigravida which is comparable to present study as it was 52%. Sir Gangaram Hospital study shows 68% vaginal deliveries in induced patients of Oligohydramnios and 32% by caesarean section which is comparable to our study.^[9] Manzanares S et al,^[10] shows 84% vaginal deliveries in induced patients of Oligohydramnios and 16% by caesarean section. In this study, in spite of non-reactive NST 25% patients delivered vaginally. The caesarean section was done more commonly in 755 patients with non-reactive NST as seen in Charu Jandial study.^[11] As these patients had oligohydramnios, a non-reactive NST + AFI < 5 indicated fetal jeopardy as per revised Biophysical profile scoring by Clerk et al.^[12] The fetal jeopardy was reflected as increase operative interference in this study.

Conclusion

Meconium stained liquor is more commonly associated with PIH, post-datism, oligohydroamnios and DM, etc. Risk factors which were associated with MSAF were PIH in 8.67%, oligohydramnios in 2% of the cases, GDM in 1.34% cases. (p value= .000), which is significant.

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