

PERINATAL OUTCOME IN MECONIUM STAINED AMNIOTIC FLUIDUrvashi Sharma¹, Swati Garg², Karnika Tiwari³, Prabjot Singh Hans⁴, Babit Kumar⁵**HOW TO CITE THIS ARTICLE:**

Urvashi Sharma, Swati Garg, Karnika Tiwari, Prabjot Singh Hans, Babit Kumar. "Perinatal Outcome in Meconium Stained Amniotic Fluid". Journal of Evolution of Medical and Dental Sciences 2015; Vol. 4, Issue 48, June 15; Page: 8319-8327, DOI: 10.14260/jemds/2015/1208

ABSTRACT: Meconium staining of amniotic fluid is a common complication in labour which if left unattended can result in poor fetal and maternal outcome. MSAF is found in 10-15% of births. Prospective study conducted on 1536 consecutive live births. Out of 1536 cases, 200 cases with meconium on spontaneous/artificial rupture of membranes were selected meeting the inclusion and exclusion criteria. The present study shows that by-good intrapartum monitoring, Timely interventions, by immediate oropharyngeal suctioning of all babies and Selective approach of endotracheal intubation can reduce complications of MSAF to a great extent.

KEYWORDS: Meconium, Amniotic fluid, Perinatal.

INTRODUCTION: Meconium staining of amniotic fluid is a common complication in labour which if left unattended can result in poor fetal and maternal outcome.

Meconium is a viscous green liquid consisting of:

- Gastrointestinal secretions.
- Bile, Bile acids.
- Mucous, Panceatic Juices.
- Cellular debris.
- Amniotic fluid.
- Swallowed Vernixcaseosa.
- Lanugo.

Passage of meconium has been often used as a mark of antepartum or intrapartum asphyxia, Inutero hypoxia, → increased intestinal peristalsis resulting in meconium passage.

Many maternal factors contributes to passage of meconium before birth which includes;

- Maternal age.
- Prolonged gestation.
- Type of labour.
- Obesity.
- Anaemia.
- Hypertension, Pre-Eclampsia, Eclampsia and others.

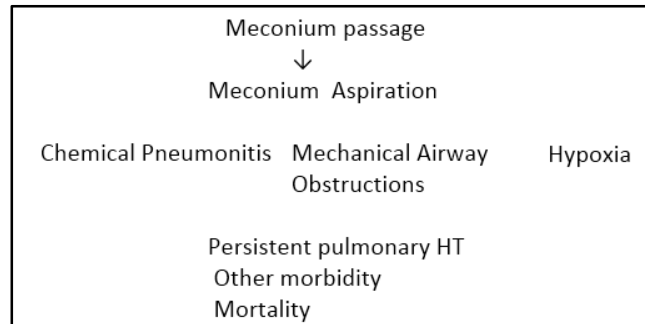
INCIDENCE: MSAF is found in 10-15% of births.¹

- Usually occurs in term of post-term neonates.
- Meconium aspiration syndrome (MAS) develops in 5% of such neonates, 30% of then require mechanical ventilation and 3-5% expire.¹
- The degree of symptoms is related to the viscosity of the substance. Presence of thick meconium is more likely to result in respiratory symptoms.

ORIGINAL ARTICLE

Etiopathogenesis:

- Physiological – Spontaneous G.I. Motility.²
- Direct hypoxic bowel stimulation.
- Sporadic and repetitive cord compression - Vagal stimulation.



PROGNOSIS: MSAF produces a wide spectrum of symptoms.

1. Asymptomatic.
2. Neonate developing respiratory distress immediately or within first few hours of birth.
3. Neonates who are depressed at birth and who do not respond to conventional therapies.

MANAGEMENT:

- Has undergone significant changes in last two decades.
- Controversies still exist regarding appropriate management of mother and delivery room management of MSAF.
- Studies have proved beyond doubt that by adequate oropharyngeal suction of the infant as well as by postnatal intubation and intratracheal suctioning, MAS can be prevented.
- Recently a selective approach to intubation of meconium stained infants is recommended in which laryngoscopy and tracheal suctioning is recommended for babies.
- Who are depressed and require positive pressure ventilation in delivery room.
- Evidence of fetal distress in utero.
- Meconium is thick/particulate.

ROLE OF AMNIOINFUSION: This aims to prevent or relieve umbilical cord compression during labour.

- Studies suggest that routine prophylactic amnioinfusion for labours complicated by meconium is not warranted.
- ACOG (2006) concluded that routine prophylactic amnioinfusion for this reasons is not recommended.)³

OBJECTIVE:

- To study the
- Incidence.
 - Antenatal factors.
 - Complications during labour.
 - Perinatal outcome in cases with MSAF.

ORIGINAL ARTICLE

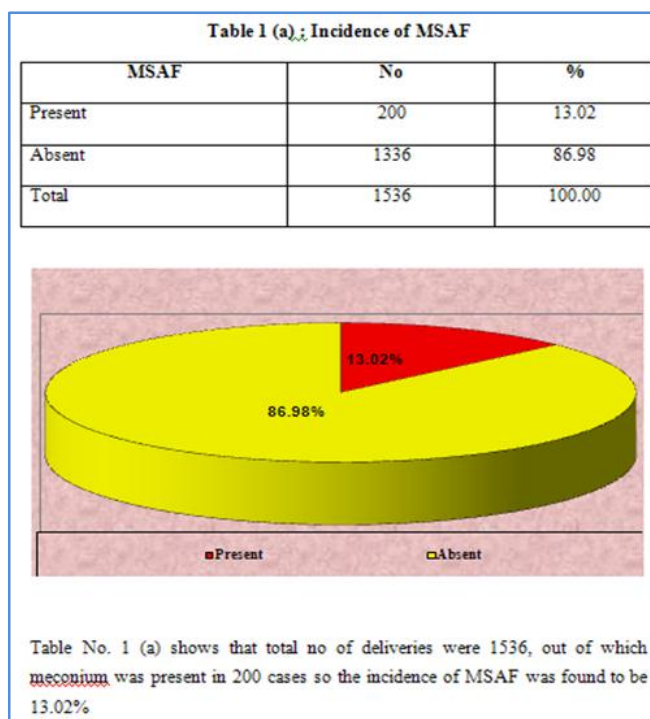
MATERIAL AND METHODS:

- Prospective study conducted on 1536 consecutive live births at Mahatma Gandhi hospital, Jaipur from June, 2012 to Dec., 2012.
- Out of 1536 cases, 200 cases with meconium on spontaneous/artificial rupture of membranes were selected meeting the inclusion and exclusion criteria.

Inclusion	Exclusion Criteria
1. Preg> 34 weeks	1. Preg< 34 weeks
2. Cephalic presentation	2. Antepartum haemorrhage
3. Singleton live pregnancy	3. Breech presentation
4. Pregnancy without any congenital malformation	4. Transverse lie
5. Pregnancy with medical disorders	5. Multiple pregnancy
	6. IUFD
	7. Pregnancy with congenital malformation

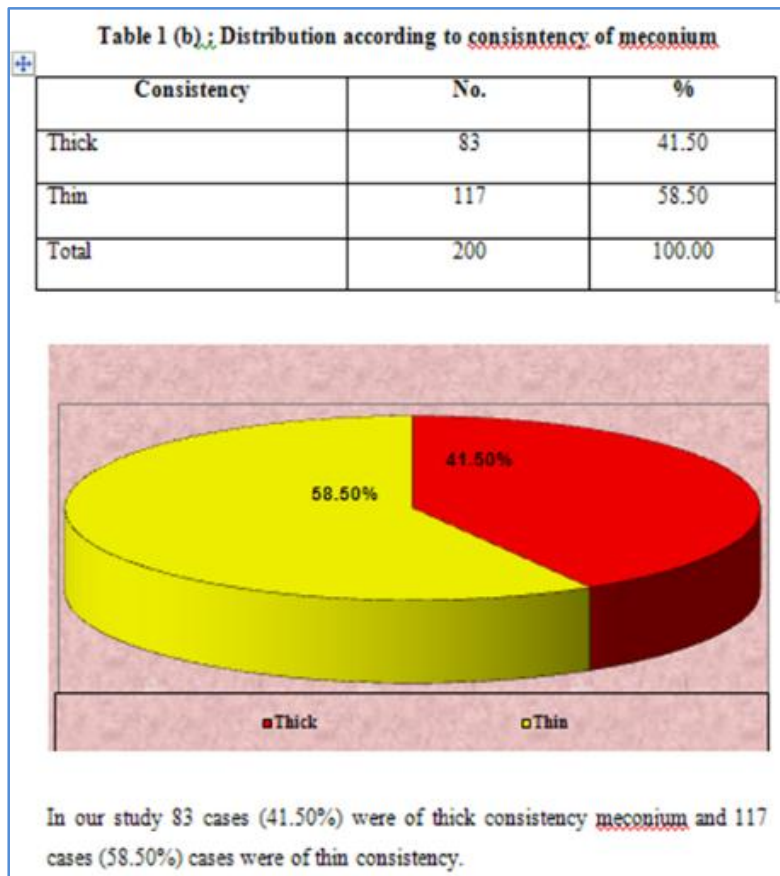
- All cases were monitored clinically and progress of labour charted on partogram.
- Any intrapartum complication noted and appropriately dealt with.
- In all babies with MSAF thorough oropharyngeal suction was done.
- Direct laryngoscopy was done in all babies with MSAF.
- Endotracheal intubation was done in depressed babies as well as those whose vocal cord was stained with meconium and all such babies were shifted to NICU.
- Rest of the babies kept under observation.

RESULT: Comparable to other studies.



This incidence is comparable to other studies.⁴

ORIGINAL ARTICLE



Gravida	No.	%
1	90	45.00
2	58	29.00
3+	52	26.00
Total	200	100.00

Table 2: Relationship of MSAF with parity of mother

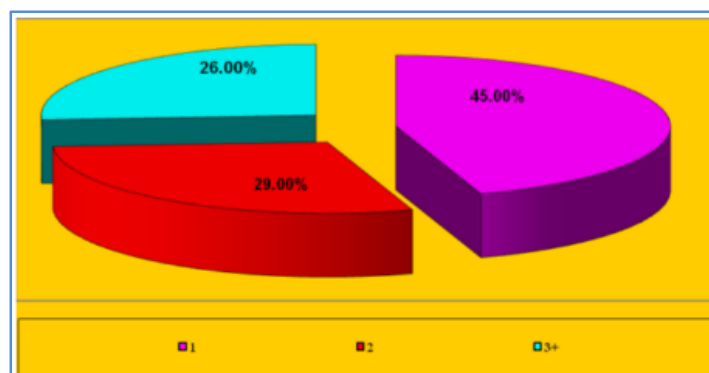


Fig. 2: Relationship of MSAF with parity of mother

ORIGINAL ARTICLE

Above table shows that out of 200 cases of MSAF 90 cases (45%) were primigravidas, 58 cases (29%) were 2ndgravidas and 52 cases (26%) were 3rd or more gravidas.

Present study shows maximum incidence of MSAF in primigravidas. This may be due to increased duration of labour in primigravidas as compared to multigravidas, incidence of pre-eclampsia and postdatism are also more common in primigravida as compared to multigravidas.

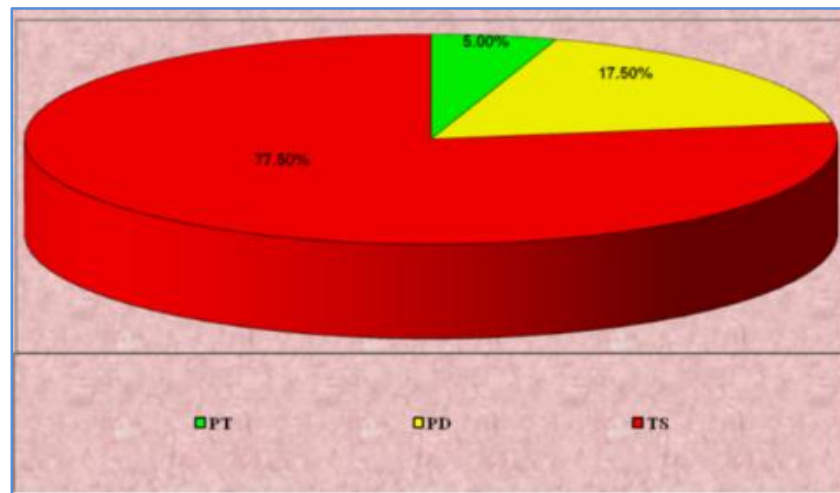
Similar incidence reported by A. Narang, PMC Nair et al.⁵

Gestational Age	No.	%
PT	10	5.00
PD	35	17.50
TS	155	77.50
Total	200	100.00

Table 3: Relationship of MSAF with gestational age

In our study, 10 cases (5%) were less than 37 wks of gestation, 155 cases (77.50%) were between 37-40 wks and 35 cases (17.50%) were more than 40 wks.

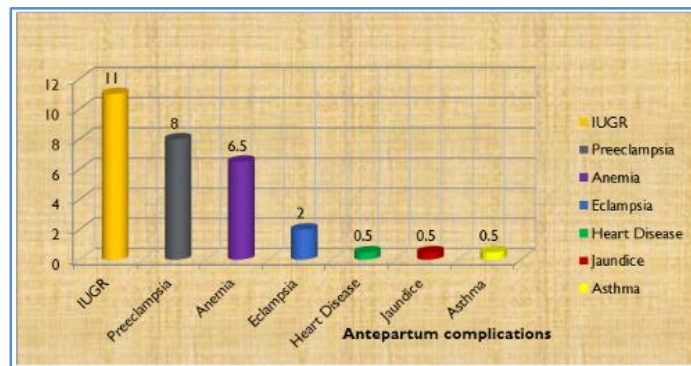
Above study shows higher incidence of MSAF in term babies.



Antepartum complication	No.(n=200)	%
IUGR	22	11%
Pre eclampsia	16	8.00
Anaemia	13	6.50
Eclampsia	4	2.00
Heart disease	1	0.50
Jaundice	1	0.50
Asthma	1	0.50

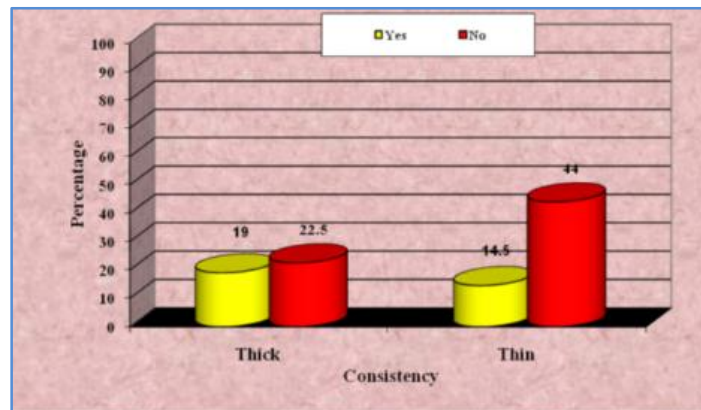
Table 4: Retation of antepartum complications with MSAF

ORIGINAL ARTICLE



Consistency	Fetal distress		Total
	Present	Absent	
Thick	38 (19.00)	45 (22.50)	83 (41.50)
Thin	29 (14.50)	88 (44.00)	117 (58.50)
Total	67 (33.50)	133 (66.50)	200 (100.00)
$\chi^2 = 9.618$	d.f. = 1	P < .005	Sig

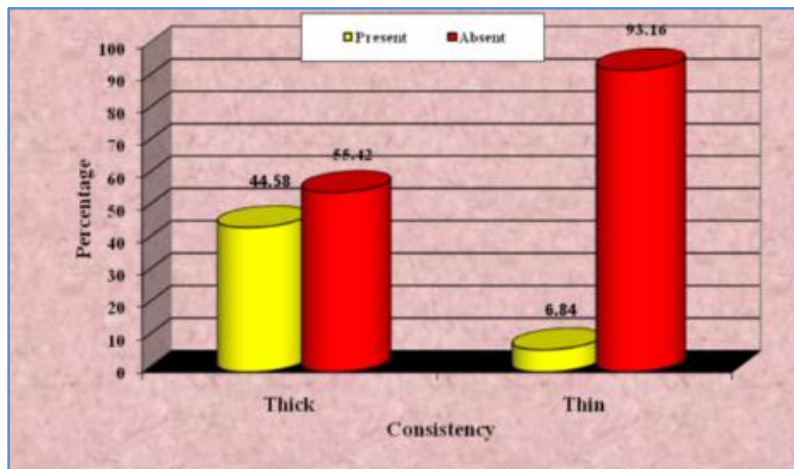
Table 5: Relationship of consistency of Meconium with fetal distress



Consistency	Meconium Aspiration		Total
	Present	Absent	
Thick	37 (44.58)	46 (55.42)	83 (100.00)
Thin	8 (6.84)	109 (93.16)	117 (100.00)
Total	45 (22.50)	155 (77.50)	200 (100.00)
$\chi^2 = 39.638$	d.f. = 1	P < .001	HS

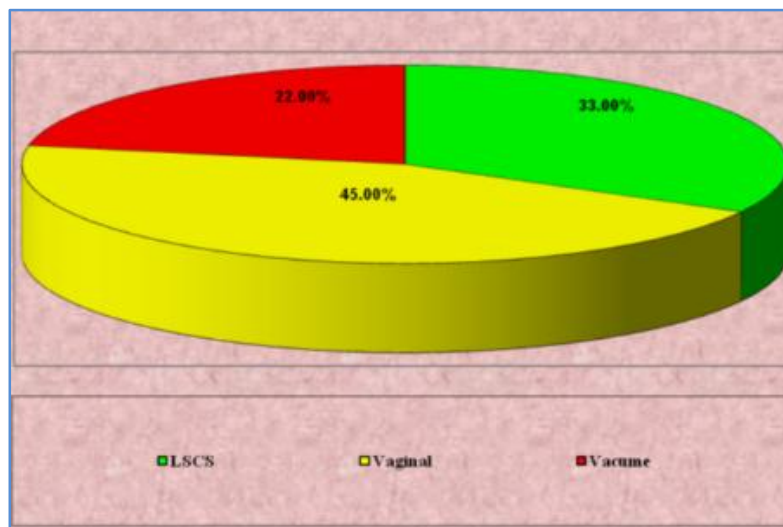
Table 6: Relationship of consistency of Meconium with Meconium aspiration

ORIGINAL ARTICLE



Mode of delivery	No	%
LSCS	66	33.00
Vaginal	90	45.00
Vacuum	44	22.00
Total	200	100.00

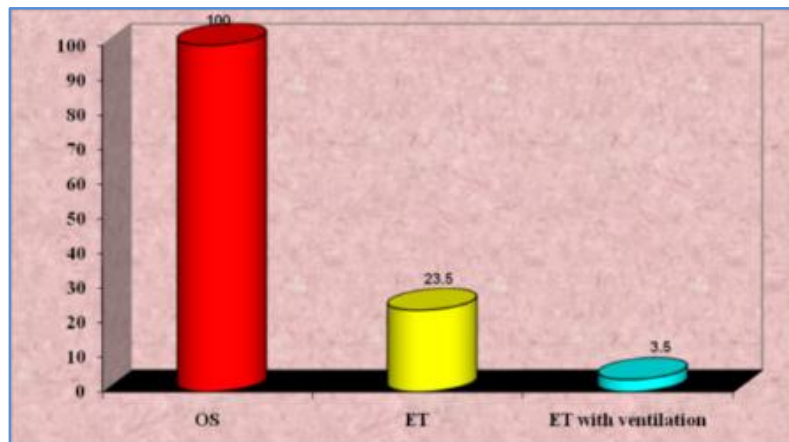
Table 7: Relationship of mode of delivery with MSAF



Method of Resuscitation	No	%
OS	200	100.00
ET	47	23.50
ET with ventilation	7	3.5%
Total	200	100.00

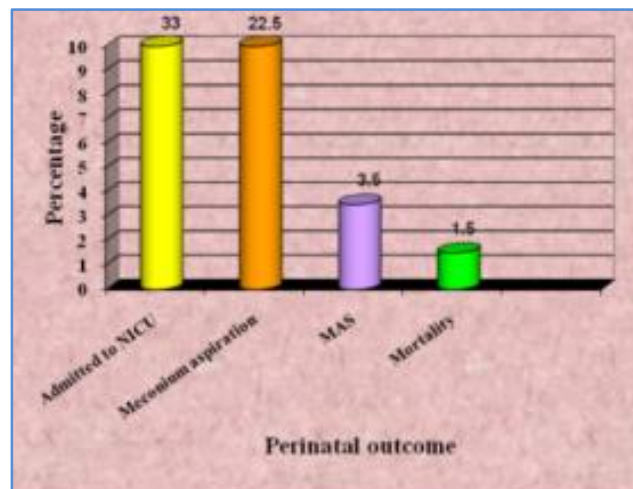
Table 8: Method of Resuscitation in MSAF

ORIGINAL ARTICLE



Perinatal outcome	No (n=200)	%
Admitted to NICU	66	33.00
Meconium aspiration	45	22.50
Meconium aspiration Syndrome	7	3.50
Mortality	3	1.50

Table 9: Perinatal outcome in MSF



CONCLUSION:

- MSF is associated with perinatal morbidity and mortality.
- It signifies the needs of prevention and appropriate management of various antepartum and intrapartum complications responsible for intrauterine hypoxia.
- Various neonates need only careful observation after thorough oropharyngeal suction.
- The present study shows that by:
 - Good intrapartum monitoring.
 - Timely interventions.

ORIGINAL ARTICLE

- By immediate oropharyngeal suctioning of all babies and.
- Selective approach of endotracheal intubation.

Complications of MSAF can be reduced to a great extent.

REFERENCES:

1. Nelson WE. Text book of Pediatrics 18th Edition. Saunders. Philadelphia.
2. Miller FC Sacks DA, Yeh SY, Paul RH, Schiffrin BS, Martin CB, Hon EH. Significance of meconium during labour. Am. J. Obstet. Gynecol. 1975; 122:573-580.
3. William Obstetric 23rd Edition Chapter 18, page 433.
4. Vineeta Gupta et al: MSAF Antenatal. Intrapartum Neonatal attributes. Indian Pediatrics 33, 1996.
5. Narang A, Nair PMC, Bhakoo ON, Vashist K.: Management of meconium stained amniotic fluid. A team approach. Indian Pediatrics. 30:9-13, 1993.

AUTHORS:

1. Urvashi Sharma
2. Swati Garg
3. Karnika Tiwari
4. Prabjot Singh Hans
5. Babit Kumar

PARTICULARS OF CONTRIBUTORS:

1. Senior Resident, Department of Obstetrics and Gynaecology, Mahatma Gandhi Medical College, Jaipur.
2. Professor & HOD, Department of Obstetrics and Gynaecology, Mahatma Gandhi Medical College, Jaipur.
3. Resident, Department of Obstetrics and Gynaecology, Mahatma Gandhi Medical College, Jaipur.

FINANCIAL OR OTHER

COMPETING INTERESTS: None

4. Resident, Department of Obstetrics and Gynaecology, Mahatma Gandhi Medical College, Jaipur.
5. Senior Resident, Department of Radiodiagnosis, Mahatma Gandhi Medical College, Jaipur.

NAME ADDRESS EMAIL ID OF THE CORRESPONDING AUTHOR:

Dr. Urvashi Sharma,
Senior Resident,
Department of Obstetrics and Gynaecology,
Mahatma Gandhi Medical College, Jaipur.
E-mail: urvashi_dr@yahoo.com

Date of Submission: 22/04/2015.

Date of Peer Review: 23/04/2015.

Date of Acceptance: 08/06/2015.

Date of Publishing: 13/06/2015.