

A Study on Neonatal Outcome in Pregnancies with Oligohydramnios

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Abstract: *AIM: The aim of the present study is to understand the correlation of neonatal outcomes like gender, birth weight, and requirement of resuscitation, staining of liquor with meconium, duration of Nicu stay, mode of delivery required, and Apgar score at 5 minutes in pregnancies with oligohydramnios. Methods: 25 pregnancies with oligohydramnios, (Amniotic fluid index less than 5cms diagnosed on an ultra-sound) admitted at Katuri medical college was selected and detailed obstetric history of mothers was taken. Amniotic fluid index was obtained from ultra sound scanning, and thorough clinical examination of the newborn was done, and relevant history of the neonatal outcome till the stay of the mother and child in the hospital was entered in a predesigned and pre validated proforma. Patients with Multiple pregnancies and with intrauterine death were excluded from the study. Results: In the present study, 18 babies were male (60%) and 12 babies were female (40%), 14 babies were low Birth weight (56%), 3 babies were very low birth weight (12 %), and 8% (2) were extremely low birth weight. 4 babies needed resuscitation (16%), while 22 babies required no resuscitative measures (88%), 6 babies were born with thick meconium stained liquor (24%), 2 babies were born with thin meconium stained liquor (8%), and 17 babies with no meconium in liquor (68%), 19 babies were given to mother immediately (76%), while 6 babies were admitted in nicu (24%), 18 were born through caesarean section (72%) while 7 babies were born by normal vaginal delivery (28%), Apgar at 5 minutes was 0-3 in 2 cases (8%), 4-6 in 3 cases (12%) and 7-10 in 20 cases (80%). Conclusion: In mothers with oligohydramnios there is more chances of LSCS, birth asphyxia, foetal distress, low birth weight and very low birth weight leading to NICU admission, So, foetal and neonatal monitoring is associated with better perinatal outcomes.*

Keywords: oligohydramnios

1. Introduction

- Oligohydramnios is described as a condition with decreased amniotic fluid volume relative to gestational age. It may present as a threat to the foetus due to increased risk of the umbilical cord getting compressed which results in impaired blood flow to the foetus which causes foetal growth retardation and even foetal demise.
- In 1987, Phelan et al. described Amniotic Fluid Index by an ultrasound approach and defined oligohydramnios as a condition when amniotic fluid index (AFI) was ≤ 5 cm [1].
- In 1990, Manning et al. revised the criteria to a single pocket measuring 2cm in both vertical and horizontal planes [2].
- Pre - eclampsia, Intrauterine Growth Retardation (IUGR) and post - dated pregnancies are the commonest causes of reduced amniotic fluid during third trimester of pregnancy due to chronic placental insufficiency and reduced renal circulation
- Sherer et. al., in 2002, reviewed that Oligohydramnios is associated with adverse perinatal outcomes such as low birth weight, foetal distress in labour, meconium passage, low APGAR score, need of neonatal resuscitation and NICU admission. [3]

Aim

- To study the Neonatal outcome in pregnancies with oligohydramnios

Objective:

- To study the effect of oligohydramnios on birth weight
- To study the effect of oligohydramnios on APGAR score

2. Materials and Method

Study Setting: This study was conducted in the Neonatal Intensive Care Unit and Postnatal wards under Department of Paediatrics at (KMCH, GUNTUR).

- Study Design: Prospective Observational Study.
- Study period Sep 2020 - Sep 2021 (1 year).

Inclusion criteria:

Neonates born to mother with oligohydramnios

Exclusion Criteria

- 1) Patients with Multiple pregnancy
- 2) Intrauterine death.

A prospective study was conducted over a period of 1 Year in pregnancies with Oligohydramnios (Amniotic fluid index less than 5cms diagnosed on an ultra - sound) admitted in KMCH.

Informed written consent and detailed obstetric history of mothers was taken. Amniotic fluid index was obtained from ultra sound scanning.

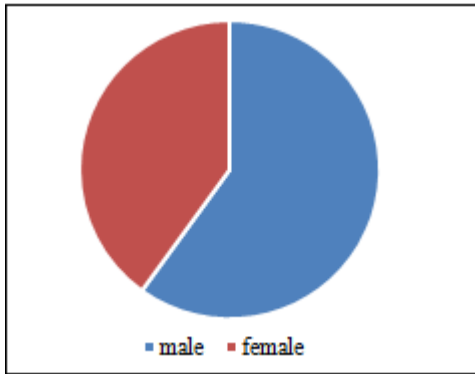
Parameters noted were: Meconium stained amniotic fluid, mode of delivery, birth weight, APGAR score at 5min, History and Investigations of the mother, Neonatal history and examination. Neonatal outcome till the stay of the mother and child in the hospital was entered in a predesigned and pre validated proforma. Data was collected and entered in an excel sheet. Appropriate statistical methods were applied to the data and the results were obtained.

Statistical Analysis

The data recorded in case proforma, tabulated and statistically analysed to find significance of association of clinical variables with outcome using inferential statistics

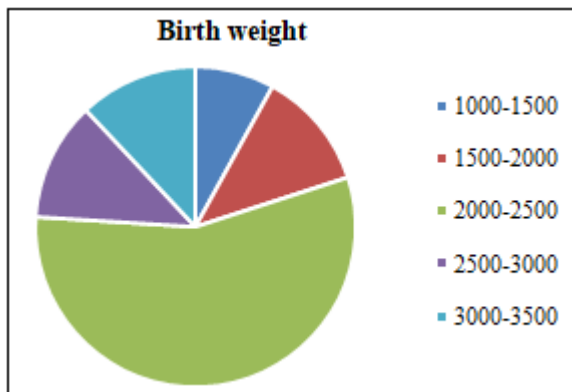
3. Results

Gender	Total number 25	Percentage
Male	18	60%
Female	12	40



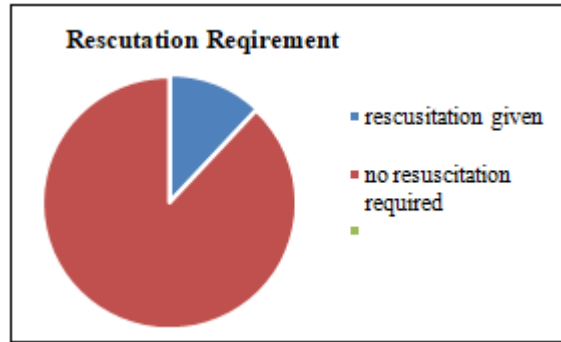
- 60% are male and 40 % are female

birthweight	Total Number 25	percentage
1000 - 1500 grams	2	8%
1500 - 2000 grams	3	12%
2000 - 2500 grams	14	56%
2500 - 3000 grams	3	12%
3000 - 3500 grams	3	12%



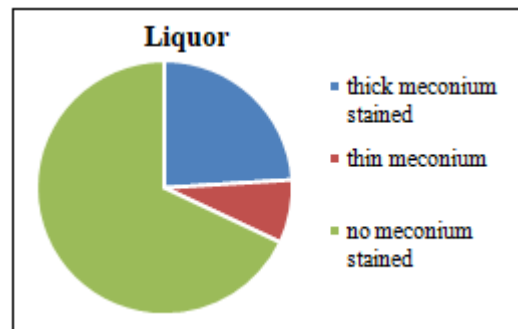
- 56% babies fall in low Birthweight, 12 % babies fall in very low birth weight, 8% fall in extremely low birth weight

Resuscitative requirement	Total number 25	Percentage
Resuscitation done	4	16%
No resuscitation required	21	84%



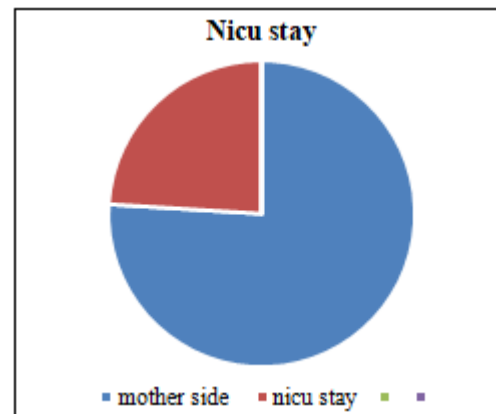
- babies needed resuscitaion (16% neonates)

Liquor	Total Number 25	Percentage
Thick Meconium stained	6	24%
Thin meconium stained	2	8%
No meconium in liquor	17	68%



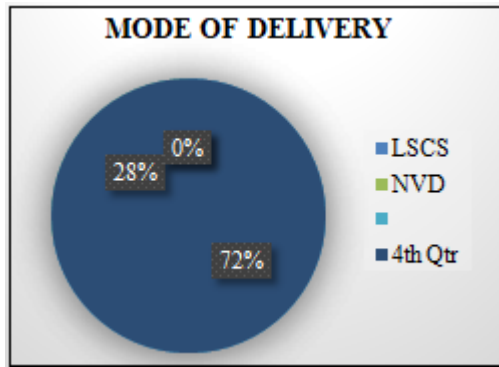
- 32% newborns have meconium stained liquor which indicates foetal distress

Nicu stay requirement	total number 25	Percentage
Mother side	19	76%
Nicu stay	6	24%



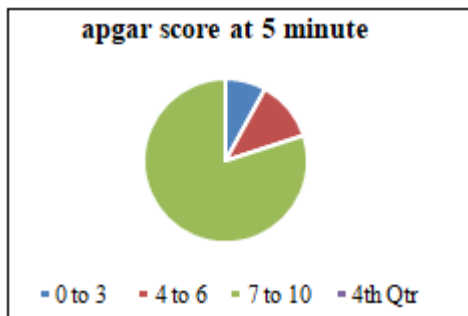
- 6 babies were admitted to NICU% (24% babies)

Mode of delivery	Total number 25	Percentage
LSCS	18	72%
Normal vaginal delivery	7	28%



- In this study Out of 25 singleton newborns born to oligohydramnios mothers . Mode of delivery is LSCS in 18 cases (72%) and normal vaginal delivery in 7 cases (28%) which suggests there is a need for LSCS in oligohydramnios which is an invasive intervention.

Apgar score at 5 minute	Total Number 25	Percentage %
0 - 3	2	8%
4 - 7	3	12%
7 - 10	20	80%



20% newborns apgar score at 5 minutes is less than 7

4. Discussion

- Amniotic Fluid serves a number of important functions in the normal development of the embryo and foetus.
- It cushions the foetus against physical trauma, allows for growth of the foetus, free from restriction or distraction by adjacent structures, provides for a thermally stable environment, allows the respiratory and gastrointestinal tract and musculoskeletal system to develop normally, and helps to prevent infection.
- Maternal Outcome is not affected adversely due to Oligohydramnios per se. However, increased intervention in the form of induction of labour and caesarean deliveries due to foetal growth restriction, and preterm delivery indirectly increase maternal morbidity.

5. Comparison

My study (n=25) AFI<5

- Around 25 women who fulfilled inclusion criteria
- Prospective observational study
- NICU stay 24% of 25 neonates
- APGAR SCORE at 5 minutes

<7 in 20% neonates

- LSCS 72% out of 25 neonates born to oligo mothers.

- 76% neonates are < 2.5 kg
- No still births

Dr Manish Sharma et. al, hindu rao hospital, delhi (n=75) AFI<5

- Around 75 women have fulfilled inclusion criteria
- Case control study
- NICU stay: 44% in cases and 13% in controls
- Apgar score at 5 min <7: 55% in cases and 13% in controls
- Lscs was mode of delivery: 85% among cases and 25% among controls
- 73% neonates are <2.5 kg among cases, 16% among controls
- 2.66% still births among cases and no in controls

In the study by Manish Sharma et. al, it was found that oligohydramnios is associated with higher rate of foetal morbidity and mortality. Oligohydramnios can be used as an aid to other foetal surveillance methods to identify foetuses with risk of poor perinatal outcome

My study (n=25) (AFI<5)

- 24% needed nicu stay
- 16% needed resuscitation
- 30% passed meconium

Krishnaveni et. al, at vanivilas hospital, Bangalore (n=67) (AFI<7)

- 24% neonates needed nicu stay
- 3% needed resuscitation
- 25% passed meconium

6. Conclusion

- So in mothers with oligohydramnios there is more chances of LSCS, birth asphyxia, fetal distress, low birth weight and very low birth weight leading to NICU admission.
- Foetal monitoring is essential as there is chance of foetal distress in these mothers with oligohydramnios.
- Neonatal monitoring will decrease perinatal morbidity in newborns born to mothers with oligohydramnios

References

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