



INCIDENCE OF CONGENITAL ANOMALIES ASSOCIATED WITH OLIGOHYDRAMNIOS- A HOSPITAL BASED STUDY IN A TERTIARY CARE HOSPITAL OF RURAL MAHARASHTRA

Paediatrics

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ABSTRACT

Background: 3rd trimester Oligohydramnios is associated with poor maternal and fetal outcome. Oligohydramnios is associated with congenital anomalies of genitourinary system, dehydration, preeclampsia, placental abruption etc. The more frequent malformations associated with oligohydramnios were urinary, musculoskeletal, digestive and cardiac. (1) **Objective:** To find the incidence of congenital anomalies in neonates born to mother diagnosed with oligohydramnios in 3rd trimester of pregnancy. **Method:** The present prospective study was conducted in department of Pediatrics, Dr. Vitthalrao Vikhe Patil Pravara Rural Hospital, Loni. All the babies born to mother diagnosed with oligohydramnios in the 3rd trimester of the pregnancy were included and on 4th day of life USG abdomen and kidney, ureter and bladder and 2D ECHO were done to diagnose congenital anomalies. IUD and Still birth babies were excluded. **Time period:** July 2021 to November 2022 **Results:** Among 100 cases studied, 14 (14%) cases have congenital anomalies, out of which 7 (7%) were involving renal system and 7 (7%) were involving other systems. **Conclusion:** Our study demonstrated that careful fetal examination has to be performed when oligohydramnios is diagnosed as congenital malformations are often associated with oligohydramnios.

KEYWORDS

Oligohydramnios, renal anomalies, congenital anomalies, neonatal intensive care unit

INTRODUCTION

Oligohydramnios occurs in approximately 4.5% of all pregnancies and severe oligohydramnios occurs in 0.7% of all pregnancies. Oligohydramnios is more common in pregnancies beyond term as the AFI normally decreases at term. Oligohydramnios complicates as many as 12% of pregnancies that last beyond 41 weeks. (2)

Oligohydramnios in contrast to polyhydramnios is always a cause of concern. The underlying cause for Oligohydramnios is very much essential criterion for evaluating the prognosis and it guides in clinical management. The causes for Oligohydramnios are many.

1. Fetal Anomalies especially renal anomalies comprise some of the causes; Bilateral renal agenesis, unilateral renal agenesis with contralateral multicystic dysplastic kidney, Bilateral multicystic dysplastic kidneys, infantile form of autosomal recessive polycystic kidney disease is some of the renal anomalies.
2. Causes of bladder outlet obstruction namely urethral stenosis or atresia, posterior urethral valves, megacystis microcolon, intestinal hyperperistalsis syndrome can cause oligohydramnios.
3. Persistent cloaca and syringomyelia may also lead to oligohydramnios. Fetal therapies such as vesico amniotic shunt may relieve such causes; drugs such as ACE inhibitors, Angiotensin receptor blockers and Nonsteroidal Anti-inflammatory drugs have also been implicated in causing Oligohydramnios. NSAIDs cause fetal ductus arteriosus constriction and thus reduced fetal urine production; It can cause acute and chronic renal insufficiency in neonates. ARBs cause fetal hypotension, renal hypoperfusion and thus ischemic anuric renal failure.
4. Oligohydramnios commonly occurs in post term pregnancies. Magann and coworkers in 1997 proposed that the volume of amniotic fluid reduced by 8 percent per week beyond 40 weeks.
5. Ruptured membranes, placental abnormality can also cause Oligohydramnios.
6. Oligohydramnios is often associated with fetal growth restriction, maternal complication such as preeclampsia or vascular disease wherein uteroplacental insufficiency can impair fetal growth and thus result in reduced fetal urine output.

Congenital anomalies associated with Oligohydramnios:

1. Amniotic band syndrome
2. Cardiac:
 - Fallot's tetralogy
 - Septal defects

3. CNS:

- Holoprosencephaly
- Meningocele
- Encephalocele
- Microcephaly
- 4. Cloacal dysgenesis
- 5. Cystic Hygroma
- 6. Chromosomal:
 - Triploidy
 - Trisomy 18
 - Turner Syndrome
- 7. Diaphragmatic Hernia
- 8. Hypothyroidism
- 9. Skeletal dysplasia
- 10. Genitourinary anomalies
 - Renal agenesis
 - Renal dysplasia
 - Urethral obstruction
 - Potter syndrome
 - Meckel Gruber syndrome
 - Prune belly syndrome
- 11. VACTERL anomaly (Vertebral, Anal, Cardiac, Tracheoesophageal, Renal, Limb)

Pathology:

Oligohydramnios occurs due to either excessive fluid loss or due to decreased fetal urine production or excretion.

Oligohydramnios occurs in following conditions:

- Rupture of amniotic membranes
- Congenital absence of functional renal tissue or obstructive uropathy
- Decreased renal perfusion leading to decreased urine production;
- Due to hypoxemia induced redistribution of fetal cardiac output as occurring in fetal growth restricted babies.
- Post term gestation

METHOD AND MATERIAL

- Informed written consent was obtained from the parents.
- Neonate born to mother in whom oligohydramnios/ anhydramnios was diagnosed in last USG scan (3rd trimester) was enrolled in a study.
- Detailed maternal data was taken from medical records and missing data was obtained from mother.
- USG -Kidney Ureter Bladder (KUB) was done by Radiology Department on 4th day of life in healthy neonates and at the end of

treatment in neonates requiring intensive care management, to find out kidney size and structural abnormality/es if any. Neonates were investigated and treated for presenting clinical problem. Information i.e., Demographic details, clinical profile of healthy neonates and clinical details, investigations done. All the details were collected in predesigned Performa.

- Reports of laboratory tests and USG findings were noted.
- Data was entered in Excel sheet.
- Data analysis was done by using SPSS software and p Values less than or equal to 0.05 ($p \leq 0.05$) were considered as statistically significant.

RESULTS

Table 1. Congenital Anomalies found in Total cases.

Total no of cases	Congenital Anomalies	Percentage (%)
100	14	14%

In our study Out of 100 cases 14(14%) cases had Congenital anomalies.

Table 2. Various anomalies found in our study.

Renal Anomalies	No of cases	Percentage (%)
Hydronephrosis	3	21.5%
Posterior Urethral Valve	2	14.3%
Renal Pyelectasis	1	7.1%
Unilateral Renal Agenesis	1	7.1%
CNS (Meningocele)	1	7.1%
Congenital Diaphragmatic Hernia	2	14.3%
Congenital Talipes Equinovarus	4	28.6%
Total	14	100%

In our study 14(14%) cases were found to have congenital anomalies. Out of those 3(21.5%) were **Hydronephrosis**, 2(14.3%) were **Posterior Urethral Valve**, 1(7.1%) was **Renal Pyelectasis**, 1(7.1%) was **Unilateral Renal Agenesis (Right sided)**, 1(7.1%) was **Meningocele**, 2(14.3%) were **Congenital Diaphragmatic Hernia** and 4(28.6%) were **Congenital Talipes Equinovarus**.

DISCUSSION

In our study 14% cases were found to have congenital anomalies. Other similar study done by **Bansal et al (17%)**, **M Qadir et al (9.3%)** and **KC S et al (11%)** had similar results as compared to our present study. Most common anomalies found in our study were renal malformations which is similar to study done by Subash K.C et.al⁵ and Shipp TD et.al⁶.

CONCLUSION

Mothers having an amniotic fluid index of ≤ 5 cm (Oligohydramnios) in 3rd trimester of pregnancy is associated with congenital anomalies in babies born to them. 14% cases had congenital anomalies, most of them involving renal system i.e 7%.Hence ,detailed ultrasound scan to look for any congenital malformations should be done whenever there is oligohydramnios so that timely intervention may be done if deemed necessary.

Recommendations

Amniotic Fluid Index should be used in addition to other fetal surveillance methods.It helps to identify infants who are at risk of poor perinatal outcome. Close antenatal and perinatal monitoring are mandatory for every mother diagnosed with oligohydramnios to decrease the maternal and neonatal risks associated with oligohydramnios. Manual of instructions to increase maternal awareness regarding oligohydramnios and its management to be created.Referred to tertiary care hospitals of mother diagnosed with oligohydramnios for further examination and management.

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