



## TO STUDY ON INCIDENCE OF NORMAL, DECREASE AMNIOTIC FLUID IN THIRD TRIMESTER OF PREGNANCY AND ITS RESULT.

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### ABSTRACT

The amniotic fluid is a protective liquid present in the amniotic sac. Two types of amniotic fluid disorders have been identified. First refers to polyhydramnios, which is an immoderate volume of amniotic fluid with an Amniotic Fluid Index (AFI) greater than 24 cm. Second includes oligohydramnios, i.e., less than 5 cm. The main objective is to study on incidence of normal, decrease amniotic fluid in third trimester of pregnancy and its result. A prospective observational study was carried out in obstetrics and gynecology. 150 patients with gestational age from 30-40 weeks with Amniotic Fluid index AFI < 5 cm with intact membranes were analysed for perinatal outcome. Out of 150 patients, 40% patients were reported to be with oligohydramnios. More patients were reported in the age group of 24-26 years. 73% of patients showed primigravida and 27% of patients showed multigravida. 53% of people showed gestational period of 35-37 weeks. All patients showed AFI ≤ 25%. The incidence of different risk factors in pregnancy included preeclampsia (27%), premature rupture (22%), gestational diabetes mellitus (GDM) (10%), anemia (11%), and with non-maternal factors (25%). Lower Segment caesarian Section (LSCS) was done in 95% of patients and 5% of patient's undergone normal vaginal delivery. The LSCS was highly indicated due to oligohydromnios in 50% of cases and its associated causes such as fetal distress 18.4%, intrauterine growth retardation 13.1%, malformation 16% and failed induction 2.6%. All 40 babies of oligohydramnios patient showed Appearance, Pulse, Grimace, Activity, and Respiration (APGAR) score of above ≥ 7 and associated fetal outcomes such as Respiratory Distress Syndrome 27.5%, and Preterm 7.5%. The patients in primigravida are more prone to oligohydramnios with associated factors such as GDM and anemia. In the third trimester, the complications resulting in the caesarian section was high in order to improve the fetal outcome. Well timed screening for Amniotic fluid index (AFI) among intrapartum and postpartum pregnancy, right antenatal checkup and way of life changes in patients enables to lessen the maternal chance factors and enhance the fetal final results.

**Key words:** Fetal and maternal outcome, Oligohydramnios, AFI < 5 cm, Intrauterine Growth Retardati.

### INTRODUCTION

The amniotic fluid is the protecting liquid present inside the amniotic sac which accrued of water, solids together with proteins, carbohydrates, lipids and phospholipids, enzymes, hormones and chemical substances urea, uric acid, creatinine, electrolytes. It is evolved from the membrane plasma with the aid of the improvement of fetus and serves as a defensive cushion for the growing fetus. It has antibacterial homes to protect the

developing fetus from contamination; additionally it allows the trade of vitamins, water and biochemical products involving mother and fetus. Different kinds of fetal cells are further present which incorporates; skin, respiratory, intestinal, urinary tract and stem cells, hair and blood cells, all of which resource within the increase of fetus.)

AFV(Amniotic Fluid Volume) does no longer trade significantly from day to day, but commonly it will increase with the increase of fetus achieving a height at 34 weeks of gestation (over 800 mL), after which it could start to lower.<sup>1</sup> Though insure cases Amniotic Fluid Index (AFI) of the amniotic fluid extent is greater than 24 cm, the phenomenon is referred as polyhydramnios.<sup>2</sup> Risk elements of polyhydramnios consist of: maternal diabetes, fetal heart failure, abnormal swallowing and congenital infection.<sup>3</sup> The degree of growth within the AFV is at once associated with the growth in detrimental hazard elements on mother and fetus prenatally. Some of these prenatally results encompass preterm beginning, cesarean delivery, placental abruption, fetal malposition, macrosomia, umbilical cord prolapse and maternal breathing compromise.<sup>4</sup>

If the AFI (Amniotic Fluid Index) is much less than 5cm the circumstance is called oligohydramnios. This is an everyday issue of all pregnancies and the occurrence of that is reported to be around five% of pregnancy. In a few segment, the boom in oligohydramnios became because of extended environmental temperature which ends up in maternal dehydration that reasons fetal dehydration and urine output decreases which bring about decreased amniotic fluid extent.<sup>5</sup> Abnormality of fluid extent can intervene directly with fetal improvement inflicting structural anomalies which include pulmonary hypoplasia, fetal hypoxia, neural tube illness, and gastrointestinal obstruction.<sup>6</sup>The circumstance associated with oligohydramnios are premature rupture of the membrane, intrauterine growth retardation, maternal elements along with Gestational Diabetes Mellitus (GDM), preeclampsia, maternal hydration, anemia, and idiopathic. This leads to fetal complications which include low delivery weight, fetal distress, and fetal loss of life, Intrauterine Growth Retardation (IUGR) and extended Neonatal Intensive Care Unit (NICU) admission.<sup>7</sup>The maternal outcomes including preterm transport and exertions induction in ladies with borderline AFI were notably better than the ones in the ordinary institution. Birth asphyxia turned into extra commonplace in babies brought to patients with oligohydramnios. Neonatal morbidity turned into in particular because of meconium aspiration and neonatal sepsis.<sup>8</sup>This leads to extended

LSCS and instrumental shipping in the mother in the course of the being pregnant. The submit-dated being pregnant, pregnancy-triggered hypertension and fetal congenital anomalies were the common headaches associated with oligohydramnios. Pregnancy-brought on hypertension and publish-dated pregnancies are the commonest causes of decreased amniotic fluid in the course of the third trimester of being pregnant.<sup>9</sup>The present study examine aims to study on incidence of normal, decrease amniotic fluid in third trimester of pregnancy and its result.

**MATERIAL METHODS**

A potential observational have a look at becoming done in obstetrics and gynecology health facility in in Great Maharaja Institute of medical sciences, nellimarla, AP and Sri Satya Sai Medical college and Hospital. Tamilnadu. Ethical approval becomes acquired from the institutional evaluation board. In this study, 150 patients with gestational age from 30-40 weeks with AFI <5cms with intact membranes had been analyzed for perinatal outcome throughout the period.All sufferers in the third trimester with AFI less than or equal to 5cm, preeclampsia, gestational diabetes, maternal dehydration, eclampsia, anemia, ruptured membranes were included within the study. Exclusion standards were patients with more than one gestation, intrauterine death of the fetus, polyhydramnios, thyroid disorder, Cardiovascular Disease, bleeding, and recognized case of diabetes. Other than the ones, patient demographics, gravida, gestational week, menstrual records, mode of shipping, and outcomes of both mom and fetus have been studied. As in keeping with our know-how, there's no look at conducted in our observe place to evaluate the superiority of oligohydramnios and their related causes. They have a look at may be beneficial to discover the prevalence in our vicinity.

**Results:**

Out of 150 patients, 40 patients were reported with oligohydramnios (26.6%) and 110 patients were reported with no oligohydramnios (73.3%). The 48% of patients with oligohydramnios belong to the age group of 21-25 years as mentioned in table

**Table 1: Age wise distribution of study subjects**

S.No	Age	No of patients(n=40)	Total percentage
1	21-23	5	12.5%
2	24-26	16	40%
3	27-30	12	30%
4	30-35	4	10%
5	36-40	3	7.5%

**Table 2: Distribution of patients according to gravid**

S.No	Gravida	No of patients(n=40)	Total percentage
1	Primar	29	72.5%
2	Multi gravida	11	27.5%

**Table 3: Distribution of patients according to Gestational weeks**

S.No	Gestational Period (weeks)	No of patients(n=40)	Total percentage
1	29-31	2	5%
2	32-34	4	10%
3	35-37	21	52.5%
4	37-40	13	32.5%

**Total 4: Classification of patients based on Amniotic Fluid Index**

S.No	Amniotic fluid index	No of patients(n=40)	Total percentage
1	Normal (>10cm)	-	0
2	Borderline (>5 to ≤10cm)	-	0
3	Low (≤5cm)	40	40%

**Total 5: Risk factors associated during pregnancy**

S.No	Risk factors	Oligohydramnios n=40(27%)	No Oligohydramnios n=110(73%)	Total number of cases n = 150(100%)
1	GDM	4(10%)	6(5.4%)	10(7%)
2	Anemia	4(10%)	5(4.5%)	9(6%)
3	PROM	9(22.5%)	32(29%)	41(27.3%)
4	Preeclampsia	11(27.5%)	24(21.8%)	35(23.3%)
5	GDM+Preeclampsia	2(5%)	3(2.7%)	5(3.3%)
6	GDM+BOH	1(2.5%)	0	1(0.6%)
7	Eclampsia	0	1(0.9%)	1(0.6%)
8	Non- Maternal Factors	10(25%)	39(35.4%)	49(32.6%)

**Total 6: Mode of delivery**

S.No	Type of delivery	No of patients(n=40)	Total percentage
1	LSCS	38	95%
2	NVD	2	5%

**Total 7: Indications for LSCS in oligohydramnios**

S.No	Indications	No of patients(n=38)	Total percentage
1	Oligohydramnios	19	50%
2	Fetal distress+Oligohydramnios	7	18.4%
3	IUGR+Oligohydramnios	5	13.1%
4	Malformation+Oligohydramnios	6	15.7%
5	Failed Induction + Oligohydramnios	1	2.6%

**Total 8: Fetal outcomes of babies**

S.No	Fetal outcomes	Oligohydramnios (n=40)	No Oligohydramnios (n=110)	Total number of cases n=100 (%)
1	Alive and healthy	21(52.5%)	41(27.3%)	62(41.3%)
2	RDS	11(27.5%)	22(20%)	33(30%)
3	Preterm birth	3(7.5%)	31(28.1%)	34(30.9%)
4	LBW	4(10%)	5(4.5%)	9(8.18)

5	Meconium Stained	1(2.5%)	2(1.8%)	3(2.7%)
6	Death	0	1(0.9%)	1(0.6%)

## DISCUSSION

Present were evidences that show considerable increase in perinatal morbidity and mortality in patients

with oligohydramnios at term. The most of the patients with age group of 24-26 yrs showed increased risk to oligohydramnios as most women have their normal menstrual cycle between the age group of 21-26 which is similar reported by Ramachandra DC *et al.*,<sup>10</sup> The frequency of oligohydramnios were greatly reported in patients having primigravida which is correlated with Mathuriya G *et al.* study,<sup>11</sup>.

The predominance of oligohydramnios is reported highly in patients with gestational age of 35-37 weeks followed by 37-40 weeks. This is similar to the study reported by Moses V *et al.*,<sup>12</sup> which may be due to either reduced fetal urine production or uterine insufficiency. Excluding that maternal fluid balance plays an important role through the late gestation weeks.

The amniotic fluid index were classified into normal (>10cm), borderline (>5cm to ≤10cm) and low (≤5 cm) in in present study showed that 40% patients low AFI. AFI less than 5 cm is measured as oligohydramnios shows more risk this is correlated with Padma S *et al.* study,<sup>13</sup>. The cause in the rear the decreased AFI is maternal dehydration, placental insufficiency, preeclampsia, gestational diabetes etc.

The patient with Preeclampsia and PROM showed more danger to oligohydramnios in present study at par with the study conducted by Sasahara J *et al.*,<sup>14</sup> due to

Preeclampsia and PROM show more risk to oligohydramnios than gestational diabetes mellitus.

The thirty eight patients with oligohydramnios shows higher risk to caesarian section which is in concordance with the study conducted by Sathyapriya K *et al.*,<sup>15</sup> established that increased prevalence of LSCS are reported in patients with oligohydramnios. In order to improve maternal and fetal outcome c- section were greatly favorite. Sathyapriya k et al found that increased prevalence of LSCS was because oligohydramnios followed by fetal distress which is comparable with present study.

The study conducted by Chaitra *et al.*,<sup>16</sup> reported that fetal outcome was good in babies score ≥7 which is correlated with this study. In present study, the maximum babies were alive and healthy. Though, the admission of neonatal care due to respiratory distress syndrome was present which is comparable with the study conducted by Ghimire S.<sup>17</sup>

## CONCLUSION

Oligohydramnios is being detected greater frequently in recent times because of the ready availability of ultrasonography in recent times. An AFI ≤5 cm detected at time period this is at or after 37 completed weeks of gestation in a low-chance pregnancy is an indicator of bad perinatal outcome. Intensive fetal monitoring is essential for sufferers in exertions. Due to the increased risk of neonatal headaches in oligohydramnios, the charge of LSCS is likewise growing however the choice between vaginal shipping and cesarean phase should be nicely balanced so that unnecessary maternal morbidity is prevented. Timely intervention is likewise required to lessen perinatal morbidity and mortality.

## REFERENCE:

- Ross MG, Beall MH. Physiology of amniotic fluid volume regulation. teksmedik.com. 2018. <https://teksmedik.com/uptodate19/d/topic.htm?path=physiology-of-amniotic-fluid-volume-regulation>. Accessed 26 Mar 2020.
- Beloosesky R, Ross MG. Polyhydramnios. 2018. <https://teksmedik.com/uptodate19/d/topic.htm?path=polyhydramnios>. Accessed 26 Mar 2020
- Amniotic Fluid Problems/Hydramnios/Oligohydramnios. Children's Hospital of Philadelphia. <https://www.chop.edu/conditions-diseases/amniotic-fluid-problems-hydramnios-oligohydramnios>. Accessed 26 Mar 2020.
- Mathew M, Saquib S, Rizvi SG. Risk factors and outcome. Saudi Med J. 2008;29(2):256–60
- Ahmar R, Parween S, Kumari S, Kumar M. Neonatal and maternal outcome in oligohydramnios: a prospective study. Int J Contemp Pediatr. 2018;5(4):1409. DOI:10.18203/2349-3291.ijcp20182537
- Sinhasane H, Halkai J. A study of impact of oligohydramnios on fetal outcome. J Evol Med Dent Sci. 2015;04(14):2399–402. DOI:10.14260/jemds/2015/345
- Akhter H, Guha K DK. Amniotic Fluid Index in High Risk Pregnancies and Pregnancy Outcome. Dinajpur Med Coll Journal. 2010;3(1):1–5.
- Maryam A, Roya F, Fatemah S BA. Perinatal outcomes of Pregnancies with borderline versus normal amniotic fluid index. Iran J Reprod Med [Internet]. 2013;11(9):705–10.
- Petrozella LN, Dashe JS, McIntire DD, Leveno KJ. Clinical Significance of Borderline Amniotic Fluid Index and Oligohydramnios in Preterm Pregnancy. Obstet Gynecol. 2011;117.

10. Ramachandra DC. Study of Maternal and Foetal Outcome in Normal term Pregnancy with Isolated Oligohydramnios. J Med Sci Clin Res. 2016.DOI:10.18535/jmscr/v4i6.09.
11. Mathuriya G, Verma M, Rajpoot S. Comparative study of maternal and fetal outcome between low and normal amniotic fluid index at term. Int J Reprod Contraception, Obstet Gynecol.2017;6(2):640.
12. Moses V, Thakre S. A study of maternal and fetal outcome in third trimester diagnose case of oligohydramnios. Int J Reprod Contraception, Obstet Gynecol.2016;2944-8.DOI:10.18203/2320-1770.ijrcog20162969.
13. Padma S, Sarada, Krishna V SD. Third Trimester Oligohydramnios with Maternaland Fetal Outcome: Study of 75 cases.Indian J Appl Res. 2016;6(3):455–7.
14. Sasahara J, Ishii K, Umehara N, Oba M,Kiyoshi K, Murakoshi T, et al. Significance of oligohydramnios in preterm small-for-gestational-age infants for outcome at 18months of age. J Obstet Gynaecol Res.2016;42(11):1451-6. DOI:10.1111/jog.13074.
15. Sathyapriya K, Sonal Anto, Venkateswaramurthy Nand Sambathkumar R Research On Prevalence Of Oligohydramnios In Thirdtrimester Of Pregnancy And Its Outcome International Journal Of Life Science And Pharma Research 2019 Oct; 9(4): (P) 7-13
16. Chaitra *et al.*, Study of Maternal and Foetal Outcome in Normal term Pregnancy with Isolated Oligohydramnios. 2016J Med Sci Clin Res. DOI:10.18535/jmscr/v4i6.09.
17. Ghimire S, Ghimire A, Chapagain S, Paudel S. Pregnancy outcome in cases of oligohydramnios after 28 weeks of gestation. Int J Adv Med Heal Res. 2016;3(2):68.DOI:10.4103/2349-4220.195939