ISSN : 2350-0743

www.ijramr.com

International Journal of Recent Advances in Multidisciplinary Research

Vol. 02, Issue 11, pp.0985-0988, November, 2015

RESEARCH ARTICLE

A PROSPECTIVE STUDY OF MATERNAL AND FETAL OUTCOME IN OLIGOHYDRAMNIOS IN RURAL AREA

***Hindumathi, M., Karthiki, J., Ramamani and Sivajyothi**

Department of OBG, Santhiram Medical College, Nandyal 518501, Kurnool Dist, Andhra Pradesh

ARTICLE INFO

Article History:

Received 27th, August 2015
Received in revised form
09th, September 2015
Accepted 25th, October 2015
Published online 30th, November 2015

Keywords:

Maternal,
Fetal,
Oligohydramnios.

ABSTRACT

Oligohydramnios is one of the common complications diagnosed more frequently these days due to usage of ultrasonography. The aims of the study are to study the maternal and f*et al.,* effects of Oligohydramnios, to evaluate the causes Oligohydramnios, to evaluate the perinatal morbidity and mortality

Material and Methods: The study was conducted in Santhiram medical college, in rural area of nandyal from January 2014 to June 2015 after satisfying inclusion and exclusion criteria. 100 cases of Oligohydramnios were randomly selected. Borderline Oligohydramnios are monitored by f *et al.* surveillance test on out patient basis. All cases of severe Oligohydramnios are admitted and evaluated by NST and Doppler study. Maternal and perinatal out come is assessed.

Results: Results were analysed based on percentages and proportions. In our study majority of cases are from rural areas (92%). There is no difference in booked or unbooked status of patients. Common age group is 20 to 25 years. The incidence of Oligohydramnios in our study is 4%. Most common cause of Oligohydramnios is idiopathic. Other common causes are PIH(20%)post dates (12%)and congenital anamolies(2%). 47% of patients had caserean section. common indication being f*et al.,* distress(17%) neonatal admissions were 13% and meconium aspiration syndrome in 6% of babies. Perinatal mortality rate is 6%in our study.

Conclusion: Every case of Oligohydramnios needs evalutions of gestational age, cause of Oligohydramnios, monitoring of fetus in the antepartum and intra partum for optimum perinatal out come.

INTRODUCTION

The fluid that collects within the amniotic cavity surrounding the embryo is called amniotic fluid or liquor amni.In early pregnancy amniotic fluid is an ulrafiltrate of maternal plasma. After 20 weeks, increasing stratification and cornification of the skin prevents diffusion, the f*et al.,* urine then becomes the main contributor to the amnoitic fluid and f*et al.,* swallowing is probably the major route of fluid removal. The f*et al.,* kidneys start producing urine at 12 weeks of gestation.Towards term, saliva and lung fluid may also contribute towards the composition of the fluid. Amniotic fluid during pregnancy functions mainly to protect the fetus, maintains temperature, growth and development of fetus and have nutritive value .During labour helps in dilatation of cervix, reduction of impact of uterine contractions ,prevents cord compression. So study of amniotic fluid provides useful information about the well being of fetus and also maturity of fetus. Excess or less volume of liquor amni is assesed by amniotic fluid index. Maternal abdomen is divided into four quadrants taking umbilicus,symphsis pubis and fundus of uterus as the reference points .With ultrasound largest vertical pocket in each quadrant is measured .The sum of four measurement is the AFI as per described by phelan *et al.* in 1997 sonographycally.

****Corresponding author: Hindumathi, M.,***
Department of OBG, Santhiram Medical College, Nandyal 518501, Kurnool Dist, Andhra Pradesh

Oligohydramnios is defined as severe when AFI is less than 5 cm. AFI between 5 to 8 is termed as borderline oligohydramnios. Oligohydramnios can develop in any trimester but more common in third trimestar. About 12% woman develop Oligohydramnios after 42 weeks (Park, 2009) due to declining placental function .Decrease in AFI has been correlated with increased risk of intrauterine growth retardation (Dasari *et al.,* 2007), meconium aspiration syndrome ,birth asphyxia, low APGAR SCORES & congenital anomalies (Sultana *et al.,* 2008). Oligohydramnios is also associated with maternal morbidity in the form of increased rates of induction and /or operative interferences (). Increased induction of labour and caesarean deliveries are currently practiced for better perinatal out come. Early detection of oligohydramnios and its management may help in reduction of perinatal morbidity and mortality and decreased caesarean deliveries also. The total number of deliveries in our institute for 1 and ½ years were 4250, the incidence of Oligohydramnios is 4% and specially high in rural areas. This prompted us to study the effects of oligohydramnios.

MATERIALS AND METHODS

Present study was conducted in rural area Santhiram medical college in nandyal from Jan 2014 to Jun 2015. 100 patients of Oligohydramnios were randomly selected after satisfying inclusion and exclusion criteria.

Inclusion Criteria

Antenatal patients with intact membranes of second & third trimestar

Exclusion Criteria

Antenatal patients with premature rupture of membranes Twins and multiple pregnancies polyhydramias heart disease post caserean pregnancy study was conducted to observe outcome of perinatal morbidity and mortality. Maternal out come in the form of induction and deliveries.f*et al.,* out come in the form of (Phelan *et al.,* 1987) f*et al.,* distress (Park, 2009) neconium stained liquor (Dasari *et al.,* 2007) NICU admission (Sultana *et al.,* 2008) growth retardation (Rainford *et al.,* 2001) apgar scores (Chauhan *et al.,* 1997) perinatal mortality. All the patients with severe Oligohydramnios are admitted irrespective of gestational age. Borderline Oligohydramnios patients with no other risk factors like pregnancy induced hypertension, postdates etc. and with normal f*et al.,* surveillance test in form of weekly Doppler, modified biophyscical profile and weekly ultrasound are managed on out patient basis after explaining Dialy f*et al.,* movement count. Patients are adviced to meet the obstetrician immediately even if the f*et al.,* kick count is low.

Patient with severe Oligohydramnios are admitted. Detailed history and physical examination done, to rule out risk factors. All the routine investigations and necessary investigations pertaining to risk factor are done. Routine management in the form of rest in left lateral position, hyper alimeantation specially in cases of idiopathic IUGR with maternal malnutrition done, control of etiological factors like pregnancy induced hypertension was done. F*et al.,* surveillance done with modified Biophysical profile, daily f*et al.,* movement count, weekly USG and doppler study. Tests were repeated more frequently as and when necessary. Decision for delivery was taken if there is associated congenital anomalies of fetus, non reactive NST with abnormal doppler indices in the form of absent or reversed flow in umbilical artery .cases were then studied for maternal and f*et al.,* out come.

RESULTS

Most of the patients were in the age group 20 to 25 years and the mean maternal age is 22.5 years. Most of the cases are from rural areas than in urban population. Incidence being 92 out of 100 cases. There was no difference in incidence of Oligohydramnios in booked or unbooked cases. Incidence of Oligohydramnios is high in primiparity group (59%). Most common cause of Oligohydramnios in our study is idiopathic. Incidence being 62 out of 100 cases. Next common cause is PIH followed by post dates. Few patients had multiple risk factors. Oligohydramnios is common in gestational age > 34 weeks with incidence being 73 out of 100 cases. least common in <28 weeks. Incidence being 2% in our study. In all patients NST and doppler study are done.11 patients are taken up for lower segment caesarean section directly due to severe Oligohydramnios with abnormal doppler and NST. Four cases had breech presentation and taken up for elective LSCS .Two cases of severe preeclampsia with IUGR terminated and had still birth .Two cases terminated with ethacrydyl lactate for congenital anomalies and had still birth. Two cases of idiopathic IUGR terminated and had still birth. There are 6 still births in our study.18 cases of preeclampsia were induced with misoprostol 25 micro grams vaginal. 12 cases of post dates were induced with misoprostol. 25 micro grams vaginal. remaining 49 patients attended the hospital in spontaneous labour. 7 patients had spontaneous preterm labour and in 2 patients vacuum applied, one due to failed maternal forces and other due to f*et al.,* distress.

Age wise distribution of oligohydramnios

Age	No of patients
<20	4
20-25	79
26-30	15
>30	2
Total	100

Area wise distribution of oligohydramnios cases

RURAL	92
URBAN	8
TOTAL	100

BOOKED	44
UNBOOKED	56
TOTAL	100

Age and Maternal out Come

Age	Normal	Abnormal	Lscs	Total
<20	-	1	2	3
20-25	31	14	35	80
26-30	7	-	8	15
>30	-	-	2	2
Total				100

Parity and Maternal Out Come

Parity	Normal	Abnormal	Lscs
Primi	17	10	32
Multy	21	5	15
Total	38	15	47

Risk Factor and Maternal Out Come

Risk factor	Normal	Abnormal	Lscs	Total
Pih	4	6	10	20
Post dates	5	-	7	12
Idiopathic	29	7	30	66
Congental anamalies	-	2	-	2

NST and OUT COME

Nst	Normal	Abnormal	Lscs
Reactive	38	7	28
Non –reactive	0	8	19

Rate of caesarean section and normal vaginal delivery is all most the same in age group of 20 to 25 years.i.e 35 and 31 caesarean and normal vaginal delivery respectively. There is increase in incidence of caesarean in primiparity than in multiparity group i.e 32 and 15 respectively. Rate of caesarean section is also high in primi group than normal vaginal delivery i.e 32 and 17 respectively. Incidence of caesarean section is also high when associated with risk factors like preeclampsia and postdates. Incidence of caesarean section is also high when AFI<5 cm i.e 32 out of 47 caesarean section .Most common indications for caesarean section is f*et al.,* distress. In 81 cases APGAR score was normal and 13 cases had NICU admission.

Doppler and maternal out come

Doppler	Normal	Abnormal	Lscs
Normal	38	7	28
Abnormal	0	8	19

Indications of caesarean section

Indication	Number
F*et al.,* distress	17
Meconium stained liquor	7
Breech	4
Cpd	8
Severe oligohydramnios	11

DISCUSSION

The mean maternal age in our study is 22.5 years. Studies by (Chauhan *et al.,* 1997; Jun zhang *et al.,* 2004 and Everett *et al.,* 1992) found that mean maternal age were 23.6±6.5years .28.4 ±.4 years and 23.8 ± 5.7 years respectively. In (Casey *et al.,* 2000) study it was 23.9 years in (Krishna jagatia *et al.,* 2013) study 23.9 years. In our study the incidence of primiparity is high (59%) when compared to multiparity. In (Donald d *et al.,* 2011) the incidence of oligohydraminias in primi was 60%. The gestational age was 73 out of 100cases in ≥ 34 weeks .similar studies by (Jun zhang *et al.,* 2004; Casey *et al.,* 2000; Evertt *et al.,* 1992 and Iffath *et al.,* 1991) found that the mean gestational age were 38.1 ± 3.3 weeks, 37.5± 2weeks, 34.3± 2.1 week and 36.3± 2 weeks respectively .This indicates oligohydramnias is more common in third trimestar. In our study the incidence of oligohydramnias was 4%, in (Bangal *et al.,* ?) study it was 0.67%, similar study by (Jun zhang *et al.,*2004) reported incidence as 1.5%.Divon M *et al.,*(14) found oligohydraminias in 1.2% of cases (Casey *et al.,* 2000)found that 2.3 % of cases oligohydraminias. (Elliot *et al.* 1983) found that incidence of oligohydraminias as 3.9%. Varma TR *et al.,*(16)found that incidence was 3.1% in their study.

In our study the vaginal deliveries were 53% & caesarian section was 47% which is comparable to Sir Gangaram hospital study (Umber, 2009) which shows 68%vaginal delevaries 32% by ceserian section. (Manzanvar *et al.,* 2007) show 84%veginal delevary & 16% cesearian section .In our study 11 patients are directly taken up for caesarian because of non reactive NST abnormal Doppler and severe oligohydraminias which is comparable to charu jandial study (Jandial *et al.,* 2007).The operative morbidity is high in primiparity group. In our study it is 32%which comparable to Krishna jagatia *et al.,* study (Krishna *et al.,* 2013) it was 29%. Most common indication for ceserian section was f *et al.,* distress in our study, incidence being 17% which comparable to Krishna jagatia study it was 21%. (Jun zhang *et al.,* 2007) found thar over all cesearian section rates are similar between women with oligohydramnios and controls (24% vs 19%). (Golan *et al.,* 1994) found that cesearian section was done in 32.5% of cases. PIH was present in 20% of cases in our study Bangal VB *et al.,* study it was 16% of cases .Golana *et al.,* study(20)found 22.1% had maternal hypertension. Mercer L J *et al.,*(21)found that preelampsia was present in 24.7% of cases. study by (Chowhan *et al.,* 1997)reported preeclampsia in 12% of cases. In our study 12%of cases had postdate. In Bangal *et al.,* ? it was 16% of cases. (Clement *et al.,* 1987) (23)studied 6 cases of postdatism in which AFI diminished abruptly over 24 hours. In our study 42%of patients had birth wight < 2.5kg. Mean birth weight was 2.33kg which is similar to the study conducted by (William ott *et al.,*2005)with mean birth weight 2.4 kg .The incidence of low birth weight is high especially when patient is associated with high risk factors like severe preeclampsia ,congenital anomalies, severe oligohydramnias AFI< 2 cm or anhydramnias. Birth weight is normal in postmaturity. In our study 25% babies are SGA and 75%AGA. In (Julie Johnson *et al.,* 2007) 92.6%babies were AGA &7% were SGA. In (Brajnm casey *et al.,* 2000) 75.5% AGA&24% SGA which is comparable to our study.

In (Philipson *et al.,* 1983) 60%of AGA and 40% SGA babies. In (Raju sriya *et al.,* 2007)83.4% of AGA 16.6% of SGA babies. In our study 15% of babies had APGAR score <7 which comparable to (Manning *et al.,* 1981) it was the same 15% . In Raj suriya *et al.,* study it was 38%.In (Jun zhang *et al.,* 2004) found that APGAR score <7 at 1 mint in 15 babies. In similar study by (Locatelli *et al.,* 2004) 341 patients with oligohydramnias found no significant difference in APGAR score of less than 7 at 5 mins in study & control group. In our study it was 13% of the babies which required NICU admission. In (Julie Johnson *et al.,* 2007) 20% of babies had NICU admission. Golan *et al.,* 20 showed 6.3% neonatal deaths which is also similar to our study. (Bangal *et al.,* ?) study it was 24%, wolff *et al.,* (30)found perinatal mortaliy as 7.2%. (Apel arid *et al.,*2009)found it has 9.9%.

Conclusion

Oligohydramnias is being detected more frequently these days due to routine usage of ultrasonography. Diagnosis of severity of oligohydramnias, evaluating the cause of oligohydramnias and assement of gestation age are essential for management of oligohydramnias .Early onset oligohydramnias are associated with highest perinatal mortality. Late onset oligohydramnias are associated with better maternal and f*et al.,* out come with intensive f*et al.,* surveillance in antepartum period. Intensive f*et al.,* monitoring is essential for patients in labour. Due to increased risk of neonatal complications in severe oligohydramnias the rate of caesarean section is also increasing but decision between vaginal delivery and caesarean section should be well balanced so that unnecessary maternal morbidity prevented .Timely intervention is also required to balance between pre maturity and hostile intrauterine environment, to reduce the perinatal morbidity and mortality.

REFERENCES

Apel-Sarid, L., Levy, A. 2009. Placental pathologies associated f*et al.,* growth restriction; complicated with and without oligohydramnios. Arch Gynecol Obstet Feb 2009.

Bangal, V. B. et al. ?. Incidence of oligohydramnios during pregnancy and its effects on maternal and perinatal outcome *Journal of Pharmaceutical and Biomedical Sciences (JPBMS),* Vol. 12, Issue 12

Casey Brian, M., Donald, D. 2000. McIntire: Pregnancy outcomes after antepartum diagnosis of oligohydramnios at or beyond 34 weeks' gestation. *Am J Obstet Gynecol,* April 182(4): 909-912.

Chauhan, S. P., Hendrix, N. W. 1997. Intrapartum oligohydramnios does not predict adverse peripartum

outcome among high risk parturient. *Am J Obstet Gynecol*, 176(6):1130-1136.

Chauhan, S. P., Hendrix, N. W. 1997. Intrapartum oligohydramnios does not predict adverse peripartum outcome among high risk parturient. *Am J Obstet Gynecol*, 176(6):1130-1136.

Clement, D., Barry, M. D. 1987. Acute oligohydramnios in postdate pregnancy. Am J Obstet Gynecol, 157:884-886.

Dasari, P., Niveditta, G., Raghavan, S. 2007. The maximal vertical pocket and amniotic fluid index in predicting f*et al.,* distress in prolonged pregnancy. *Int J Gynaecol Obstet* 96(2):89-93.

Divon, M. Y., Marks, Henderson, C. E. 1995. Longitudinal measurement of amniotic fluid index in post term pregnancies and its association with f*et al.,* outcome. *Am J Obstet Gynecol*, 172:142.

Elliot, H. Phillipson, Robert, J. Sokol, 1983. Oligohydramnios – Clinical association and predictive value for intrauterine growth retardation. *Am J Obstet Gynecol* 146:271.

Everett, F. M., Thomas, E. N. 1992. Measurement of amniotic fluid volume-Accuracy of ultrasonography technique. *Am J Obstet Gynecol* 167:1533-7.

Golan, A., Lin, G. 1994. Oligohydramnios - maternal complications and f*et al.,* outcome in 145 cases. Gynecol Obstet Invest 37(2):91-5.

Hoskins, I. A., Friden, F J. 1991. Variable deceleration in reactive non stress test with decreased amniotic fluid index predicts f*et al.,* compromises. *Am J Obstet Gynecol*, 165(4):1094-1098.

Jandial, C., Gupta, S., Sharma, S., Gupta, M. 2007. Perinatal Outcome After Antepartum Diagnosis of Oligohydramnios at or Beyond 34 Weeks of Gestation. *JK SCIENCE* 9(4):213-14.

Johnson, J. M., Chauhan, S. P., Ennen, C. S., Niederhauser, A., Magann, E. F. 2007. A comparison of 3 criteria of oligohydramnios in identifying peripartum complications: a secondary analysis. *Am J Obstet Gynecol.,* 197(2):207.e1-7.

Jun Zhang, James Troendle: Isolated oligohydramnios is not associated with adverse perinatal outcome. *Int J Gynaecol Obstet Mar* 2004;3:220-225.

Krishna Jagatia, et al. 2013. Maternal and F*et al.,* Outcome in Oligohydramnios, *Int.J Medical Science and Public Health*, Vol 2: Issue 3.

Locatelli, A., Vergani, P. et al., 2004. Perinatal outcome associated with oligohydramnios in uncomplicated term pregnancies. Arch Gynecol Obstet 269(2):130-133.

Manning, F. A., Hill, L. M., Platt, L. D. 1981. Qualitative amniotic fluid volume determination by ultrasound: Antepartum detection of intrauterine growth retardation. *Am J Obstet Gynecol,* 139(3):254-58.

Manzanares, S., Carrillo, M. P., González-Perán, E., Puertas, A., Montoya, F. 2007. Isolated oligohydramnios in term pregnancy as an indication for induction of labor. J Matern F*et al.,* Neonatal Med., 20(3):221-4.

Mercer Lane, L. G. 1984. Brown A survey of pregnancies complicated by decreased amniotic fluid. *Am J Obstet Gynecol* 149:355-361.

Ott, W. J. 2005. Reevaluation of the relationship between amniotic fluid volume and perinatal outcome. Am J Obstet Gynecol, 192(6):1803-9.

Park, K. 2009. Preventive medicine in obstetric, Paediatrics and geriatrics: Park's Text Book of Preventive and Social Medicine. 20th edition. Jabalpur: M/S Banarasi Das Bhanot, 479-483.

Petrozella, L. N., Dashe, J. S., McIntire, D. D., Leveno, K. J. 2011. Clinical Significance of Borderline Amniotic Fluid Index and Oligohydramnios in Preterm Pregnancy. Obstetrics & Gynecology, 117(2 Pt 1):338-42.

Phelan, J. P., Smith, C. V., Broussard, P., Small, M. 1987. Amniotic fluid volume assessment using the four-quadrant technique in the pregnancy at 36-42 weeks gestation. *J Reprod Med.,* 32(7):540-2.

Philipson, E. H., Sokol, R. J., Williams, T. 1983. Oligohydramnios: Clinical Associations and Predictive Value for Intrauterine Growth Retardation. *Am J Obstet Gynecol* 146(3):271-278.

Rainford, M., Adair, R., Scialli, A. R., Ghidini, A., Spong, C. Y. 2001. Amniotic fluid index in the uncomplicated term pregnancy. Prediction of outcome. *J Reprod Med*., 46 (6):589-92.

Sriya R, Singhai S. Perinatal outcome in patients with amniotic fluid index < 5cm. J Obstet Gynaecol India 2001;51:98-100.

Sultana, S., Akbar Khan, M. N., Khanum Akhtar, K. A., Aslam, M. 2008. Low amniotic fluid index in high-risk pregnancy and poor apgar score at birth. J Coll Physicians Surg Pak 18(10):630-4.

Umber, A. 2009. Perinatal Outcome in Pregnancies Complicated by Isolated Oligohydramnios at Term. Annals 15:35-37.

Varma, T. R., Bateman, S. 1988. Ultrasound evaluation of amniotic fluid -outcome of pregnancies with severe oligohydramnios. Int J Gynaecol Obstet Oct, 27(2):185-92.

Wolff, F., Schaefer, R. 1994. Oligohydramnios-perinatal complications and diseases in mother and child. Geburtshilfe Frauenheilkd Mar., 54(3):139-43.

****