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Effect of Oral Hydration Therapy On Oligohydramniotic Pregnancies and Perinatal Outcome



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A B S T R A C T

Introduction: *Oligohydramnios is associated with increased perinatal morbidity and mortality and increased operative interference. It is a known fact that amniotic fluid volume correlates with the state of maternal hydration. AFI (Amniotic Fluid Index) diagnosed antenatally by conventional ultrasonography helps a lot to know the complimentary clinical status of pregnancy and to plan its outcome. Transabdominal amnioinfusion and transvaginal amnioinfusion are the interventional methods for oligohydramnios but they have their own limitations. An alternative noninvasive, simple to perform, nonexpensive, magic option of increasing Amniotic fluid volume is by maternal oral hydration. It increases the Amniotic Fluid Index (AFI) by improving uteroplacental perfusion and changes in maternal plasma osmolarity.*

Method & Material: The study of 100 cases of pregnancies complicated by oligohydramnios was done from July 2006 to June 2009 in Department of OB & GY. Of DHIRAJ GENERAL HOSPITAL, PIPARIA.

Results & Discussion: The study of 100 patients having oligohydramnios of mean age of 18-25 years of which 38% were complicated with IUGR and 28% with PET. Resulting status was marked increase of AFI diagnosed by USG after oral hydration therapy. In our study mean increase in AFI was 2.155 cm and SD was 1.2

Conclusion: There occurs improvement in perinatal outcome and reduction in operative interference in pregnancies complicated by

INTRODUCTION

Liquor Amnie is the dynamic fluid. Its vol-

ume and composition changes with the progress of pregnancy. The alteration in volume either above or below normal: increases incidence of fetal mortality and morbidity. Maintenance of Amniotic fluid volume within normal is important for promoting fetal well being.

Oligohydramnios occurs in a few patients as term approaches. It is associated with increased incidence of fetal and maternal mortality and morbidity. Hence, it is of utmost importance, to detect and treat this complication as early as possible. It can be managed either by **Transabdominal amnioinfusion or Transvaginal amnioinfusion**, but they have their own limitations. India is a developing country, and except in few metropolitan cities, there is lack of ideal setup for management of oligohydroamnios.

Hence, **Oral hydration therapy**, which can be an easy approach to the patient forms a Gold standard for the management of Oligohydramnios.

Oral hydration therapy for oligohydramnios is noninvasive, nonexpensive, simple to perform, easy to accept and **magic** option of increasing Amniotic fluid index by improving uteroplacental perfusion and changes in maternal plasma osmolarity. After that, patient compliance is excellent and no disadvantages are associated.

AIMS AND OBJECTIVES

1. To identify the patient with decreased Amniotic fluid index.
2. To identify the risk factors associated with oligohydramnios.
3. To know the perinatal outcome of pregnancy after oral hydration therapy in oligohydroamnios.
4. To know the increased rate of operative interference or maternal morbidity due to it.
5. To determine whether maternal hydration therapy increases amniotic fluid index.

METHOD AND MATERIALS

In this study spanning period of 3 years, from July 2006 to June 2009 in Department of OB & Gy. Of DHIRAJ GENERAL HOSPITAL, PIPARIA. We studied 100 cases of pregnancies

complicated by oligohydroamnios. Women with oligohydramnios were recruited from those antenatal OPD patients who were suspected of having oligohydramnios clinically and then confirmed by ultrasonography. Each patient was studied on the same day between 1 pm to 6pm and oral hydration period was given from 2pm to 4pm. Once basal Amniotic fluid index was taken, women were instructed to drink 250 ml of water every 15 minutes for total of 2 litre in 2 hours. After 2 hours of oral hydration, Amniotic fluid index was measured by dividing the uterus into four quadrants, using the maternal sagittal midline vertically and an arbitrary transverse line, at half way between the symphysis pubis and upper edge of uterine fundus. Transducer was kept parallel to the maternal sagittal plane and perpendicular to maternal coronal plane throughout.

RESULTS AND DISCUSSION:

Table :1 DEMOGRAPHIC PROFILE

Antenatal Care		SocioEconomic Status		Age Group	
Regular	44%	Middle	78%	18 - 25	76%
Irregular	40%	Lower	22%	26 - 30	18%
Emergency	16%			31 - 36	06%
		Primigravida	68%		
		Multigravida	32%		

Table :2 DISTRIBUTION OF PATIENTS ACCORDING TO GESTATIONAL AGE

Gestational age (weeks)	Numbers	%
>28 weeks	02	02
29-32	06	06
33-36	34	34
37-40	42	42
41-43	16	16

In present study, the gestational age at delivery ranges from 26 -42 weeks, while in the comparative study it is 27 - 44 weeks. In both the studies most of the patients delivered at or after 36 weeks of pregnancy. In present study, 16% of the patients were postdated, while in the comparative study they were 23.9%. The incidence is higher in comparative study of Adrian Bastide et al. in 1986.

Table :3 ASSOCIATED OF NONSTRESS TEST

Non stress test	Number	%
Reactive	80	80
Non reactive	16	16
Not possible	04	04

Table : 4. RISK FACTORS ASSOCIATED WITH OLIGOHYDRAMNIOS

Primary high risk factor	Comparative study by Adrian Bastide et al. Canada 1986		Present study	
	No. (113)	%	No.	%
PET	13	(11.5)	28	(28)
IUGR	48	(42.5)	38	(38)
Postdate(>42wk)	27	(23.9)	16	(16)
APH	02	(1.8)	02	(02)
Suspected Cong. Anomalies	04	(3.5)	00	(00)
Maternal Medical disease	07	(6.2)	02	(02)
Decreased FM			16	(16)

In our study incidence of PET (28%) was higher than comparative study (11.5%), as our institute is a reference centre. The incidence of postdatism, IUGR and Cong. Anomalies was higher in the comparative study than in our present study which were 23.9 %, 48% and 04% respectively. In our study we had included the patients who had decreased fetal movement (16%). In our study mean increase in AFI was 2.155 cm and SD was 1.252. While in the study of Nicola Y. Flank et al in 1995, mean rise AFI was 3.2 cm which was nearly 1 cm more as compared to our study. In 1991 in study of Kilpatrick et al. rise in AFI occurred 30% after oral hydration therapy.

Table : 5. DISTRIBUTION OF PATIENTS ACCORDING TO AMNIOTIC FLUID INDEX

AFI	No	%
Severe<5cms	38	38%
Mild5-7cms	52	52%
Borderline 7-8cms	10	10%

Table : 6 RISE IN AFI AFTER ORAL HYDRATION THERAPY

Rise in AFI	No	%
1-2 cm	04	04
2.1-3	30	30
3.1-4	36	36
<4cm	14	14
No rise	16	16

Table :7 ASSOCIATION OF PET & IUGR WITH OLIGOHYDRAMNIOS

AFI	PET	IUGR
<5cm	16(57%)	10(52.6%)
5.7cm	12(33%)	08(42.1%)
7.8 cm	00(00)	01(5.2%)
Total	28(28%)	19(38%)

In our study, 28 patients out of 100 had PET, of them 57% were associated with severe oligohydramnios while 33% had mild oligohydramnios. In the study of Golen et al. in 1984, incidence of PET in oligohydramniotic pregnancies was 22%. The association of PET with Oligohydramnios supports the theory of abnormal placental perfusion in patients with PET & Oligohydramnios. In our study, 38 out of 100 patients had IUGR. While in the comparative study Adrien Bastide et al. in 1986, had incidence of IUGR of 42.3 % which was higher than the present study. In present study, 38% patients delivered by caesarean section, while 62% were delivered vaginally. In Collen Baron Study in 1986, the indication for caesarean section had mentioned only two, fetal distress 4.1% and failure to progress 4.7% , while in our study incidence of foetal distress was 18%. Gross perinatal mortality corrected in our study was 20/1000 live births. Two deaths due to severe IUGR, prematurity and Respiratory Distress Syndrome. While gross perinatal mortality in comparative study was 17.7/1000. Two deaths out of 113 cases.

CONCLUSION-Oligohydroamnios is one of

Table : 8 DELIVERY OUTCOME

VARIABLE

Mode of Delivery	Comparative study Collen Baron et al. No.170	Present Study No.50
VAGINAL DELIVERY		
Spontaneous	127(75%)	30 (60%)
Forceps	11 (6.5%)	01 (02%)
Vaccum	13 (7.6%)	00 (00%)
CAESAREAN SECTION		
Fetal distress	29 (17%)	19 (38%)
Meconium in 1 st stage	-	03 (06%)
Failure to progress	08 (4.7%)	07 (14%)
CPD	-	01 (02%)
Primi breech	-	01 (02%)

Table :9 PERINATAL MORBIDITY

Perinatal Morbidity variable	In present study	In study of John Morrison et al. 1986
Fetal distress	20%	38.4%
Low 5 minute Apgar Score	12%	15.2%
IUGR	38%	36.5%
Cong. Anomalies	00%	13.3%
Neonatal intensive care	28%	43.3%
prematurity	22%	Not mentioned

Table :10 PERINATAL MORTALITY / 1000

	PNM/1000 in present study	In study of John C.Morrison et al.
Gross perinatal mortality rate per 1000 births	20 (n=100)	17.7 (n=113)

the complications of pregnancy, which increases the perinatal mortality and morbidity and operative interference. Oral hydration therapy is simple

to perform, noninvasive, nonexpensive, and easy to accept which increase Amniotic Fluid index, by increasing uteroplacental perfusion and decreasing maternal osmolarity. In our study with this therapy, there is improvement in perinatal outcome and decrease in operative interference and maternal morbidity in which AFI rises after

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