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AMINO ACID INFUSION EFFECTS ON AFI & IUGR IN OLIGOHYDRAMNIOS

Obstetrics & Gynaecology

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ABSTRACT

OBJECTIVES: To verify and evaluate the role of maternal intravenous infusion of fluids in increasing the liquor amount and fetal weight in IUGR and oligohydramnios.

METHODS: In the present study 59 cases of Oligohydramnios in the third trimester were given intravenous amino acid in 1000cc of 10% fructodex drip on 1st day and the amino acid infusion drip in 500 ml of 10% fructodex daily till 6 days. After that biweekly till patient deliver or till term.

RESULTS: In study 47 cases of moderate Oligohydramnios and 12 cases of severe Oligohydramnios at the time of their first visit. After amino acid infusion therapy, on repeat ultrasonography, 22(37%) cases patients with moderate Oligohydramnios had improved amniotic fluid index (AFI) to normal. 5(8%) patients with severe Oligohydramnios had improved A.F.I. to moderate Oligohydramnios and remaining 25(42%) and 7(12%) patients of moderate and severe Oligohydramnios group patients A.F.I. is not change. Maximum cases delivered by vaginal route with minimum perinatal morbidity and mortality.

KEYWORDS

Oligohydramnios, Iugr, Amino Acid Infusion, Third Trimester Pregnancy.

INTRODUCTION:

Pregnancy is a unique experience in every woman's life. The thought of a growing fetus with adequate amniotic fluid volume (according to gestational age) in the mother's womb, indeed is nature's way of expressing the attributes of motherhood, so adequate amniotic fluid volume is essential for the normal growth and well-being of the fetus. Oligohydramnios is a late sign of fetal malnutrition (Fernando arias 1998)[1] fetal wellbeing depends to a great extent upon appropriate volume of amniotic fluid. Diminished liquor or oligohydramnios is quite often associated with impaired fetal growth, fetal anomalies and malpresentations. Even a moderate reduction in amniotic fluid volume is associated with abnormal FHR, meconium stained liquor, which often requires cesarean section and result in perinatal morbidity and mortality.

Over the years many different medical and interventional methods have been done. In the present study 59 cases of Oligohydramnios in third trimester, were given intravenous amino-acid infusion and conditional of the neonate along with associated complications were recorded.

MATERIAL AND METHODS:

The present study was conducted in the Department of Obstetrics and Gynecology, DR. S.N. Medical college, Jodhpur in Paota Hospital, Jodhpur. The study group comprised of 59 clinically and sonographically proven cases of Oligohydramnios in third trimester attending antenatal clinic and those admitted in wards and clean labour room at random.

Table 1: Diagnostic criteria for AFI (Jeng et al. 1992).[2]

AF volume	AFI values
Oligohydramnios	≤5cm
Borderline oligohydramnios	5.1 – 8 cm
Normal	Normal 8.1 – 24 cm
Polyhydramnios	>24 cm

INCLUSION CRITERIA

- Pregnant women with 28 - 37 weeks of gestational age.
- Amniotic fluid index of ≤8 cm.
- Intact membranes.
- Patients without true labour pains.

EXCLUSION CRITERIA

- Associated fetal malformations.
- Ruptured membranes.
- Multifetal gestation.
- Polyhydramnios.

After taking detailed general and obstetrical history including any pregnancy associated complication, past or present history of any infection or medical disorders, personal and family history were recorded on Performa.

General systemic and obstetric examination including abdominal girth, fundal height and maternal weight recorded weekly or fortnightly. Fetal movement and FHR record is maintained.

Essential Investigations of blood with urine examination were done. After initial ultrasonography, patients included in the study group were subjected to repeat sonography. The AFI, was determined with a B-mode real time scanner with linear accelerator operated at 3.5 MHZ

The study group patients were given intravenous amino acid infusion in 1000 C.C. of 10% Fructodex drip on first day and then amino acid infusion drip in 500 ml 0f 10% fructodex daily till 6 days. After that biweekly till patients deliver or till term. Oral iron, calcium and multi vitamins were also given. Patients were followed up till their delivery.

Pregnancy outcome was assessed with respect to;

- Incidence of meconium stained liquor
- Intrapartum fetal distress
- Mode of delivery
- Indication of LSCS was noted
- Fetal outcome was studied with regards to birth weight.

OBSERVATIONS:

Patients were distributed according to the amniotic fluid index on entry and at time of delivery as those with moderate Oligohydramnios (AFI 5.1–8cm) and those with severe Oligohydramnios (AFI < 5 cm). **(Jeng et al. 1992).[2]**

TABLE 2: PATIENT'S DISTRIBUTION ACCORDING TO AFI AND 1ST VISIT AND AT TIME OF DELIVERY

AFI	On 1st visit	At time of delivery
Severe Oligohydramnios ≤ 5 cm	12(20)	7 (12 %)
Moderate Oligohydramnios 5.1-8cm	47(80 %)	30 (51 %)
Normal> 8 cm	-	22 (37 %)
Total No. of patients	59 (100 %)	(100%)

Above table shows that there were 12 cases of severe Oligohydramnios and 47 cases of moderate Oligohydramnios at time of 1st visit. On repeat USG after amino acid infusion 22(37%) cases patients with moderate Oligohydramnios had improved AFI normal. 5(12%) patients with severe Oligohydramnios had improved A.F.I. to moderate Oligohydramnios.

TABLE 3: RELATIONSHIP BETWEEN AFI AND MODE OF DELIVERY

Pregnancy outcome	AFI≤ 5cm (7)	5.1- 8 cm (30)	> 8cm (22)
Vaginal Delivery 43 (73 %)			
Preterm delivery (2)	2	-	
Normal Delivery (41)		21	20
Cesarean section 16 (27%) indications			
Fetal distress	-	-	1
PIH	-	2	1
IUGR	5	-	-
Failed Induction	-	3	-
OTHERS		4	

Above table shows 27% patients had LSCS, while 73% delivered vaginally, 21 Patients with moderate oligohydramnios and 20 Patients with normal AFI along with two pre-term delivered by normal veginal route. Major indication is severe oligohydramnios for LSCS.

TABLE 4: RELATIONSHIP BETWEEN AFI AND FOETAL OUTCOME

AFI after amino acid infusion	IUGR	Weight of baby at birth >2.5 kg	Weight of baby at birth < 2.5 kg
≤ 5cm (7) 12%	7 (100%)	-	7 (100%)
5.1- 8 cm (30) 51%	11 (36%)	19(64%)	11 (36%)
> 8 cm (22) 37%	12 (56%)	10 (44%)	12 (56%)
Total no. of babies 59 (100%)	30 (48%)	29 (52%)	33 (48 %)

Above table shows 7 babies of severe oligohydramnios were IUGR (100%), 19 (64%) babies of moderate Oligohydramnios had weight ≥ 2.5 kg and 11 (35.7%) were IUGR. 10 babies with improved > 10 cm had normal weight and 12 (56%) were IUGR. So overall, 48% babies IUGR even after intravenous amino acid infusion.

DISCUSSION:

Oligohydramnios is late sign of fetal malnutrition. Inadequate nutrition is the second important cause of IUGR and associated complication [3]. *Ante partum* fetal surveillance by assessment of amniotic fluid has become an integral component in the management of amniotic fluid. Improvement in maternal nutritional status and weight gain in pregnancy is associated with better pregnancy outcomes. Intravenous infusion of large amount of glucose and many amino acids to the mother have been tried. Hyper alimentation in mothers carrying growth retarded fetus by intravenous route, 10% fructodex, amino acid solution, vitamins are usually given [4].

Improvement in AFI by intravenous amino acid infusion appears to act through improved maternal nutritional status, which could not have been achieved by diet because of non-compliance and socioeconomic factors.

CONCLUSION:

In this study, it is suggested Oligohydramnios intravenous amino acid infusion may prove useful in reducing maternal morbidity and perinatal mortality and morbidity and improving pregnancy outcome in developing countries.

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