A PROSPECTIVE OBSERVATIONAL STUDY ON CAUSES AND EFFECTIVENESS OF OLIGOHYDRAMNIOSTREATMENT IN PREGNANT WOMEN WITH DIFFERENT COMORBIDITIES

Abstract:

It is aprospective and observational study was conducted at GMH(Government Maternity Hospital) in Hanamkonda over a period of 6 months. Weincluded 202 oligo patients in this study and in which patients were grouped as 3 categories based on amniotic fluid index (AFI)as mild, moderate, severe. Information of the patients were collected from patient case reports and face to face interactions.From our study we can conclude that low water intake, diarrhoea &Primary Rupture of Membranes (PROM) are the major causes of the development of mild & moderate oligohydramnios. Severe oligo is mostly caused by pregnancy induced hypertension. oligohydramnios medication is shown improvement in mild, moderate & severe oligohydramnios patients.

Key words: Oligohydramnios, Amniotic Fluid Index (AFI), Pregnancy – Induced Hypertension(PIH), Primary Rupture of Membranes(PROM).

INTRODUCTION

Oligohydramnios is a rare condition characterised by decreased amniotic fluid volume for gestational age which results in foetal or placental complications leading to poor foetal outcomes.The amount of amniotic fluid varies during the course of pregnancy. The clinical evaluation of AFV utilizes fundal height measures and ultrasound analysis during pregnancy. [1]
Normal amniotic fluid range is 14 – 18 cm is most common after 30 weeks. Mild oligohydramnios ranges from 8-9 cm, Moderate oligohydramnios ranges from 6-7cm and severe oligohydramnios range is less than 6 cm.
The main function of amniotic fluid is to protect the fetus from mechanical injury, it permits movement of the fetus while preventing limb contracture, it helps to develop lungs, and it prevents pressure on the umbilical cord.

CAUSES[1,2]

Maternal causes include: Maternal dehydration, Hypertension or pre-eclampsia, Uteroplacental insufficiency, Chronic hypoxia, Gestational diabetes.

Drug-induced causes include: Angiotensin-converting enzyme inhibitors, Nonsteroidal anti-inflammatory drugs.

Placental causes include: Twin-to-twin transfusion syndrome**,** Abruption.

Foetal causes include: Premature rupture of membrane**,** Chromosomal abnormalities**,** Genitourinary abnormalities – renal agenesis,Obstructive nephropathy, foetal growth restriction.

Idiopathic: The majority of oligohydramnios cases, diagnosed in the third trimester, are of unexplained etiology.

COMPLICATIONS[3]: Intrauterine uterine growth restriction, Foetal death,Contracted limbs (if oligohydramnios begins early inPregnancy),Incomplete or delayed lung development (ifoligohydramnios begins early in the pregnancy),Due to the foetus' inability to tolerate labour, a caesareandelivery is required.

PATHOPHYSIOLOGY[4]: The amniotic fluid volume rises steadily until 33 weeks of pregnancy. The amniotic fluid level peaks between weeks 33 and 38, then begin to fall; at term, it is about 500 ml. The placenta and some foetal secretions make up a minor portion of it, foetal urine production makes up the majority (e.g., respiratory).The developing foetus breathes and ingests amniotic fluid. It is processed, the bladder is filled, it is emptied, and the cycle is repeated. In this pathway, issues with any of the structures might result in either too much or not enough fluid.
Oligohydramnios can be caused by anything that lowers the amount of urine produced, prevents the foetus from releasing its waste, or ruptures the membranes, enabling amniotic fluid to leak.
TREATMENT GIVEN TO PATIENTS: L–arginine sachets, Fructodex, Alamin nutritional supplement, Astymin forte capsule, Argihope syrup.

NEED FOR THE STUDY

The study was done to assess the causes and amniotic fluid index improvement in oligohydramnios condition in pregnancy conditions and to monitor the oligohydramnios treatment effectiveness in mild, moderate, and severe conditions with comorbidities in pregnant women.

AIM: To determine the causes and effectiveness of oligohydramnios treatment in oligohydramnios pregnant women.

OBJECTIVES:

- To assess the cause of oligohydramnios in pregnancy.
- To assess the complications of oligohydramnios.
- To assess the effectiveness of oligohydramnios treatment.
- To assess the improvement of amniotic fluid after the treatment.

Methodology

Materials and Methods:

It is a prospective and observational study designed to assess the causes, complications and effectiveness of oligohydramnios treatment in pregnant women with different comorbidities. The study was conducted at Government maternity hospital (GMH) in Hanamkonda. This study was conducted over a period of 6 months from October 2022 to march 2023 on 202 patients. The subject selection of age group 16 – 35 years pregnant women with oligohydramnios and gestational age above 30 weeks were included. Subjects with Non-pregnant women, Pregnant women with IVF were excluded. Data was collected using data collection form includes information on socio-demographic details (name, age,occupation), complications during pregnancy,marital life, scans and management.

RESULTS

Table no: 1 Types of oligohydramnios

Types of oligohydramnios	No. of patients	percentage
Mild	30	14.7%
Moderate	91	44.8%
Severe	82	40.5%

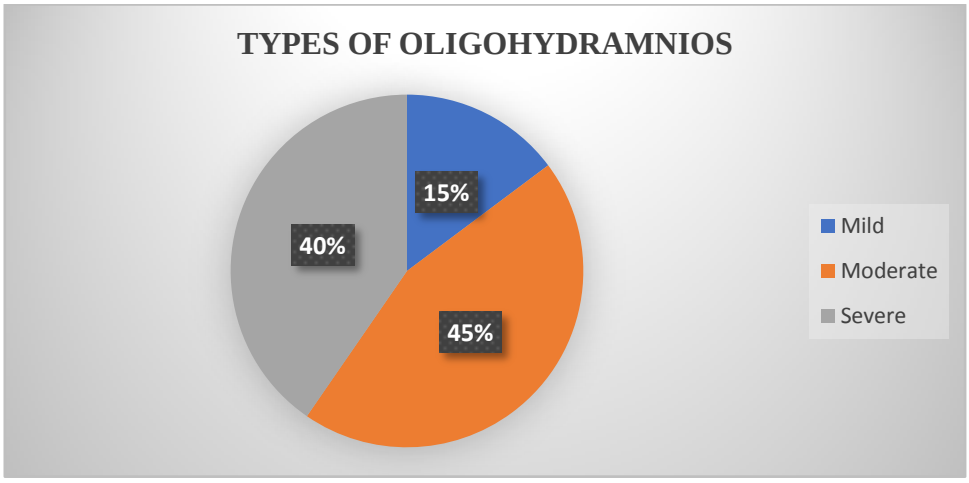

Fig no: 1 Types of oligohydramnios chart

Above graph shows oligohydramnios is divided into mild 30(14.7 %), moderate 91 (44.8%) members and severe 82 (40.5%) members

Table no: 2 Distribution of inpatient and outpatients

Patient distribution	No. of patients	percentage
Outpatients	121	59.6%
Inpatients	82	40.4%

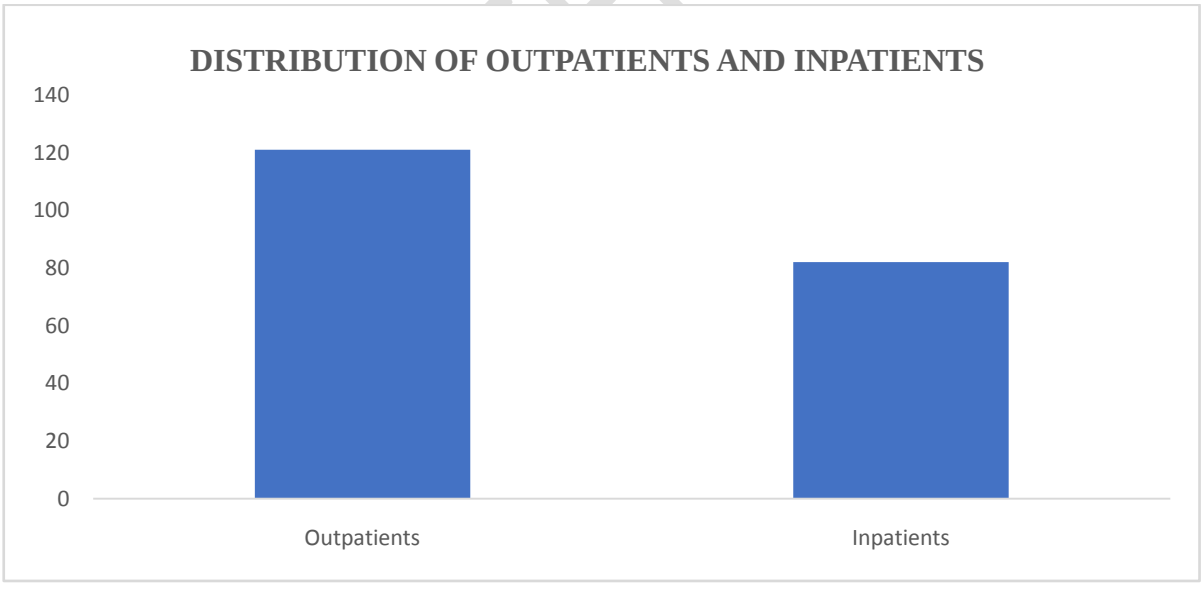

Fig no: 2 Distribution of outpatients and inpatients

Above graph shows the number of outpatients were 121(59.6 %) members and the inpatients were 82 (40.4%) member.

Table no: 3 Causes of Oligohydramnios

SNO	Causes	No. of patients	Percentage

1	GDM	32	15.7%
2	PIH	55	27%
3	Hypothyroidism	36	17.7%
4	PROM	24	11.8%
5	Low water intake	48	24%
6	others	8	3.8%

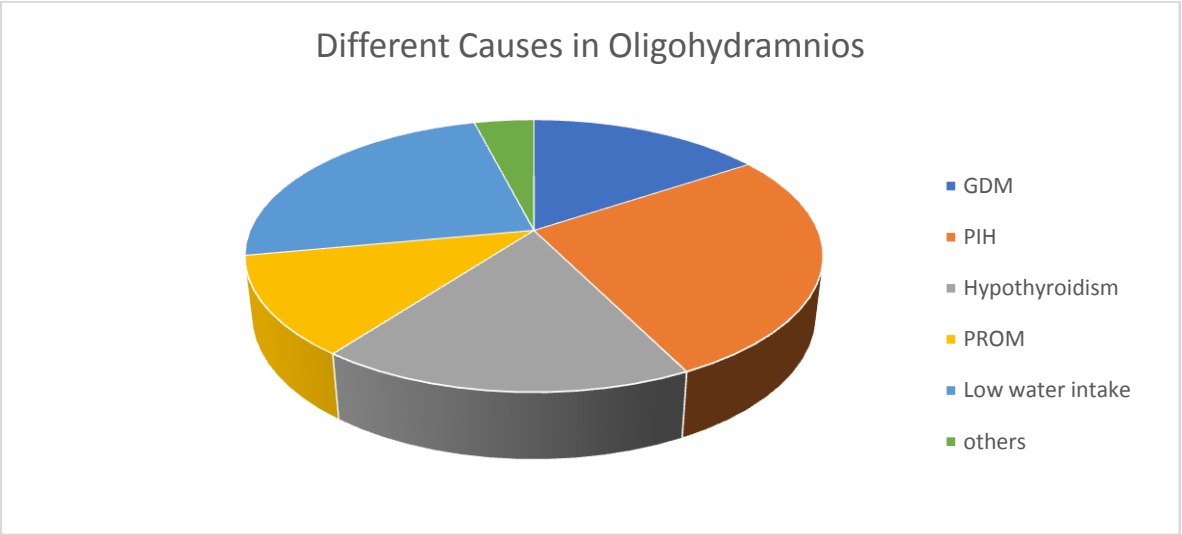

Fig no: 3 Causes of oligohydramnios

Above graph shows the number of patients with Gestational diabetes is 32(15.7%) members, pregnancy-induced hypertension is 55(27%) members, Hypothyroidism is 36(17.7%) members, PROM are 24(11.8%) members, Low water intake is 48(23%) members and others(include diarrhoea) are 8(3.8%) members.

Table no:4 Total no of inpatients on medication and on emergency LSCS

Total no of inpatients	Inpatients on medication	Inpatient on emergency LSCS
82	60 (73.2%)	22(26.8%)

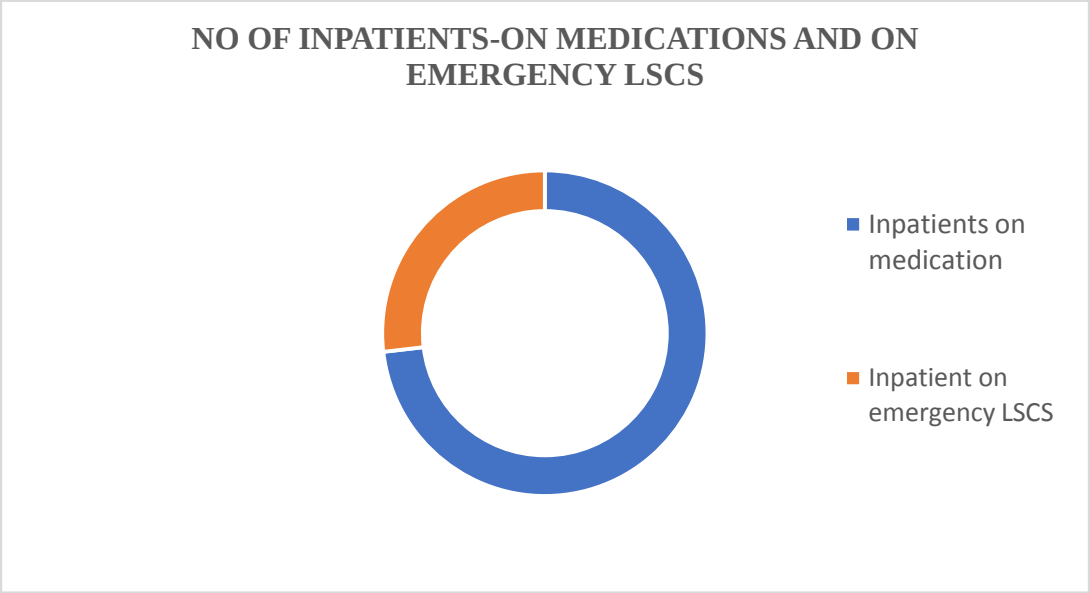

Fig no: 4 No of inpatients -on medications and on emergencyLSCS

Based on this graph, the number of total inpatients were 82, in which 60(73.2%) of patients were receiving medication, whereas 22(26.8%) of patients were on emergency LSCS.

Table no: 5 Mild Oligohydramnios treatment

No of mild oligo patients	L- Arginine sachets	High water intake
30	20	10

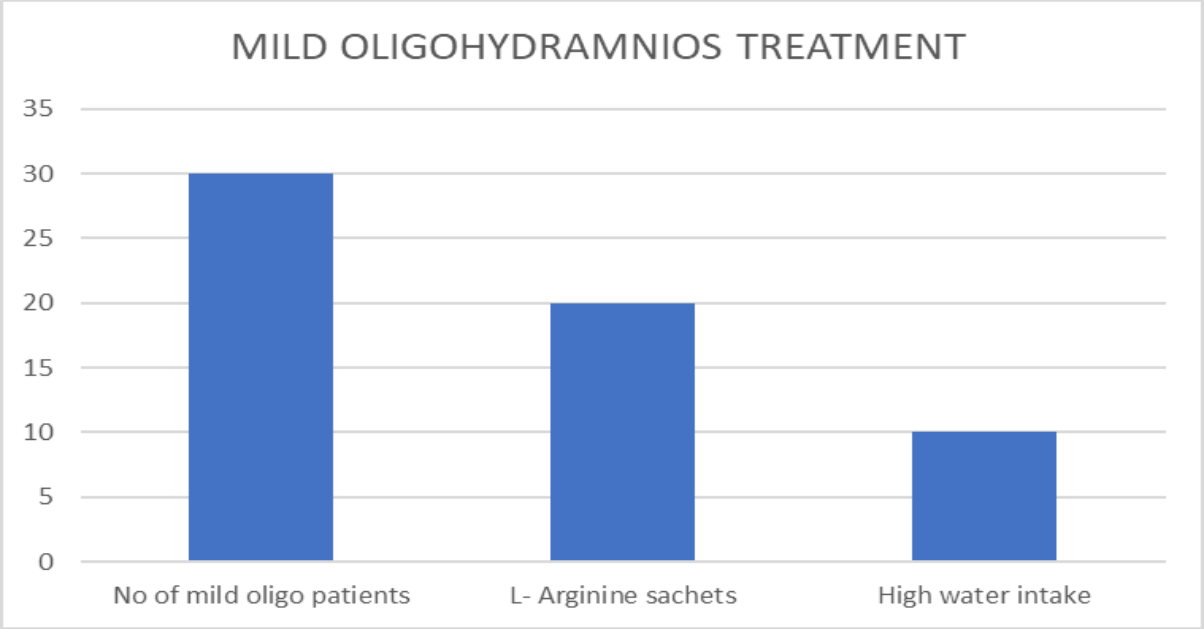

Fig no:5 Mild oligohydramnios treatment chart

- Above graph shows the number of patients with mild oligo (8-9 cm) in which 20 members were advised to take L-arginine sachets.
- And the number of patients with mild oligo (10-11cm) i.e. 10 members were advised to consume more water.

Table no:6 Total no of patients with mild oligohydramnios -improved and not improved

SNO	Patient distribution	No of patients	Percentage
1	Improved patients	24	80%
2	Not improved	6	20%

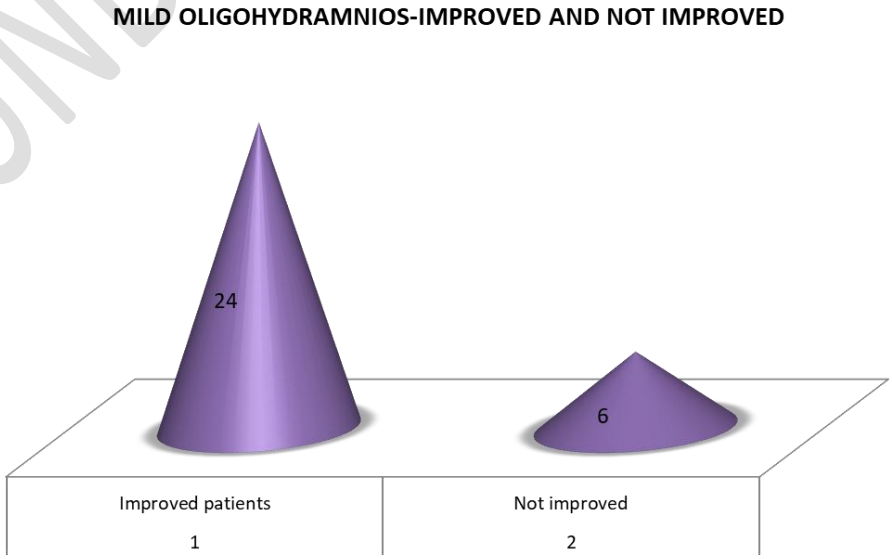

Fig no: 6 Mild–oligo: improved and not improved patients

From the above graph 80% (24 members) were improved from mild oligohydramnios whereas 20% (6 members) were not improved.

Table no :7 Total no of patients with moderate oligo-improved and not improved

S.NO	Patient distribution	No of patients	Percentage
1	Improved	61	67%
2	Not improved	30	33%

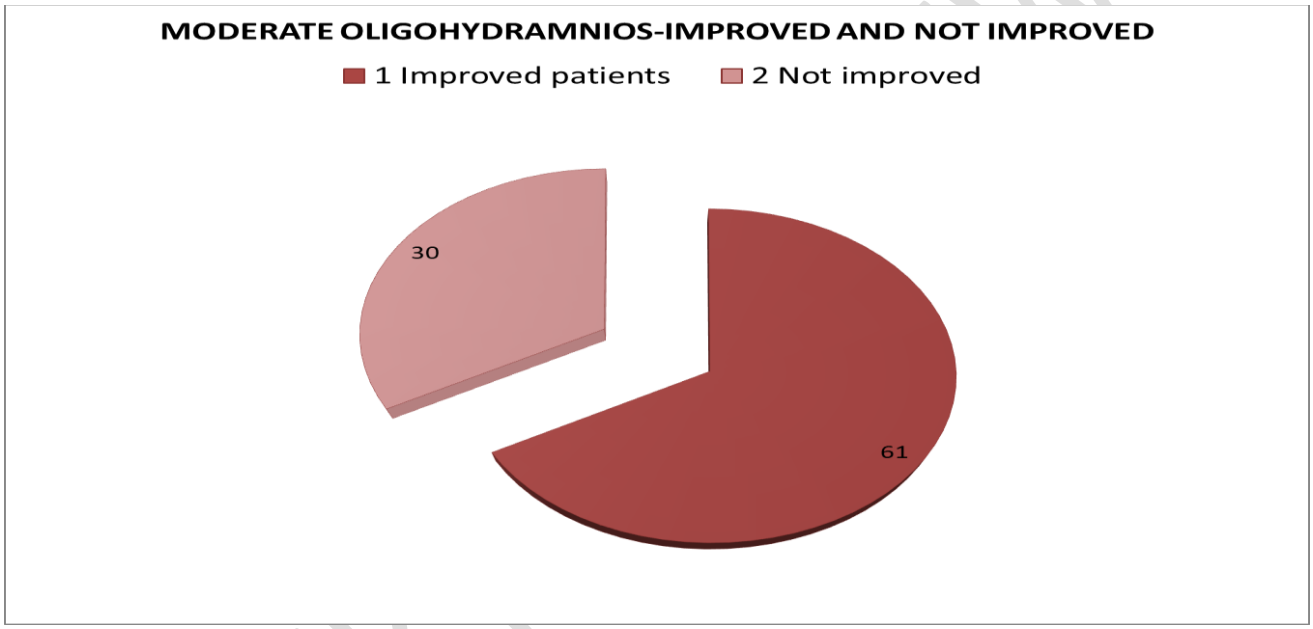

Fig no: 7 Moderate oligo-Improved and not Improved

Above graph shows, the number of improved patients with moderate oligohydramnios were 61(67%) members and the number of not improved patients are 30(33%) members.

Table no 8. Total no of patients with severe oligo-improved and not improved

SNO	Patient distribution	No of patients	Percentage
1	Improved patients	52	64%
2	Not improved	30	36%

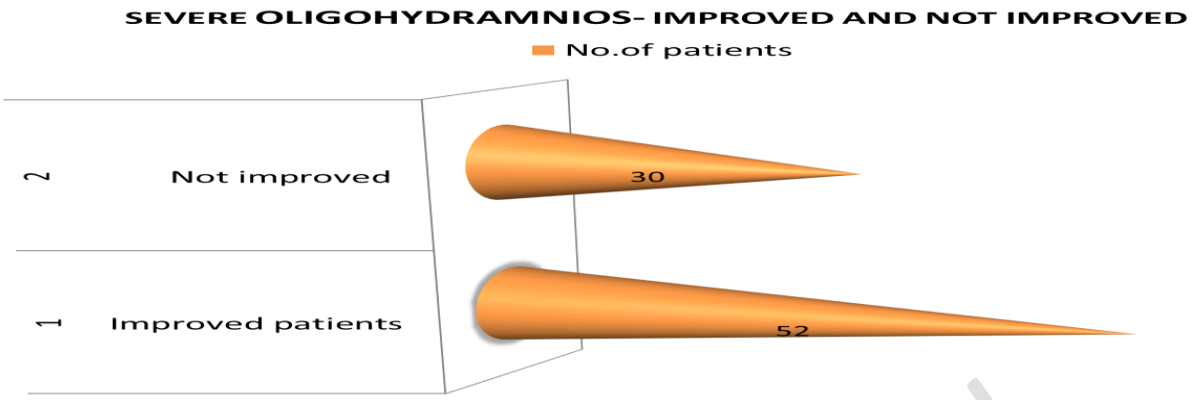

Fig no: 8 Severe oligohydramnios -Improved and not Improved

Above graph shows the number of improved patients in severe oligohydramnios is 52(64%) members, and the number of not improved patients in severe oligohydramnios is 30(36%) members.

Table no9. Total no of patients with PIH and without PIH

SNO	Patient distribution	No of patients	Percentage
1	With PIH	55	27%
2	Without PIH	148	73%

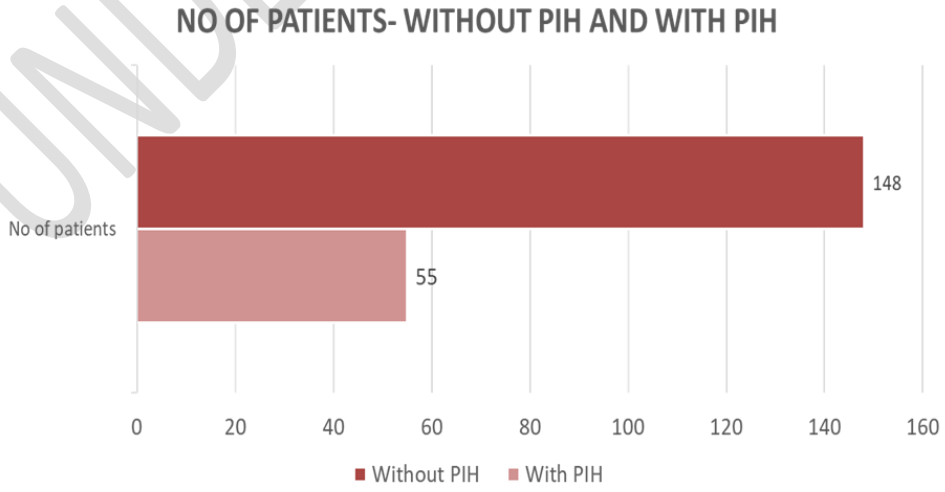

Fig no: 9 No of patients with PIH and without PIH

Above graph shows the number of patients with pregnancy induced hypertension are 55 (27 %) members, the number of patients without hypertension are 148 (73%) members.

Table no:10. Total no of patients with controlled PIH and uncontrolled PIH

SNO	Patient distribution	No of patients	Percentage
1	Controlled PIH	45	81%
2	Uncontrolled PIH	10	19%

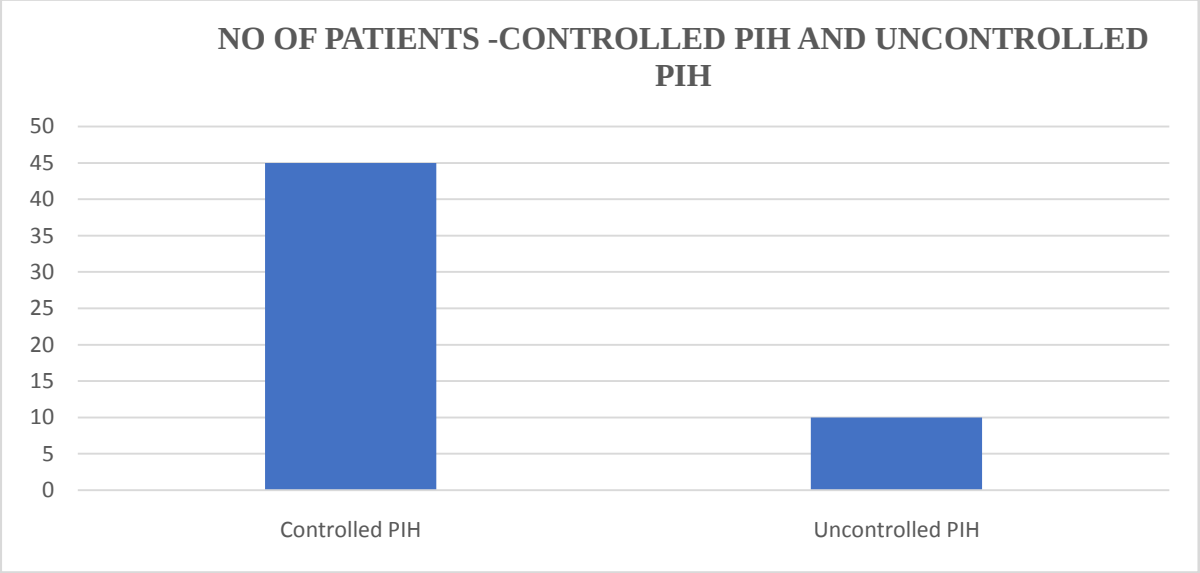

Fig no:10 No of patients- controlled PIH and uncontrolled PIH

Above graph shows thenumber of patients with controlled hypertension were 45 (81%) members and uncontrolled hypertension were 10 (19%) members.

Table no11. complications of oligohydramnios.

Complications	IUGR	Decreased foetal movements	IUD	Emergency LSCS	Abdominal tightness
No of patients	30	20	0	22	10

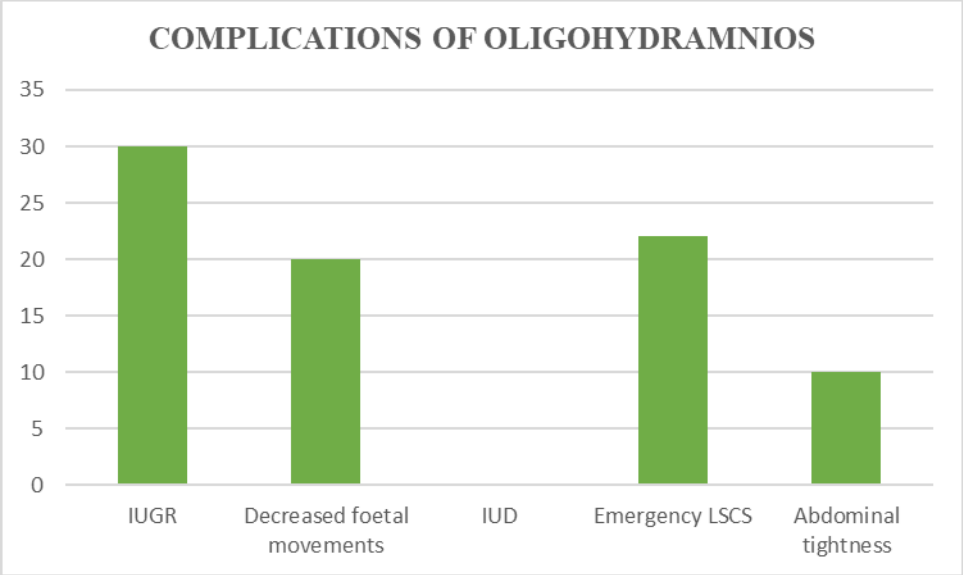

Fig no:11 Complications of oligohydramnios

Above graph shows the complications of oligohydramnios: IUGR-30 members, Decreased Fetal Movements-20members, IUD-0 members, Emergency LSCS -22members,Abdominal tightness -10 members.

Table no: 12 Oligohydramnios improvement duration monitoring

SEVERE OLIGO	MODERATE OLIGO	MILD OLIGO
3 DAYS	1 WEEK	10 DAYS

After taking the treatment patients were analysed with a doppler scan in that severe oligo patients rechecked after threedays, moderate oligo patients rechecked after one week and mild oligo patients rechecked after ten days.

Table no: 13 Before liquor treatment and After liquor treatment

TYPES OF OLIGOHYDRAMNIOS	LIQUOR VALUE BEFORE TREATMENT	LIQUOR VALUE AFTER TREATMENT	DURATION
MILD OLIGO	8 TO 9 CM	11 TO 12 CM	10 DAYS
MODERATE OLIGO	7 TO 8 CM	10 TO 11 CM	1 WEEK
SEVERE OLIGO	2 TO 4 CM	5 TO 6 CM	3 DAYS

Table no: 14. Types of PIH -before liquor treatment and after liquor treatment

TYPES OF PIH	LIQUOR VALUE BEFORE TREATMENT	LIQUOR VALUE AFTER TREATMENT
CONTROLLED PIH	2 TO 3 CM	5 TO 6 CM
UNCONTROLLED PIH	2 TO 3 CM	2 TO 3 CM

DISCUSSION

In our study, 203 patients were recruited based on inclusion criteria. PIH with oligo were 55 members (27%), GDM with oligo was 32 members (15.7%), Hypothyroidism with oligo was 36 members (17.7%), and PROM with oligo was 24 members (11.8%).

Out of 203 members, 121 members were admitted to the hospital because of abdominal tightness, decreased foetal movements, absence of foetal movements, uncontrolled blood pressure and uncontrolled sugar patients.

According to our study, the oligohydramnios occur with causes of PIH 55 (27%), PROM 24(11.8%) , low water intake 48(24%), and diarrhoea 8 (3.8%) members. The patients with PIH were 55(27%) members in that controlled blood pressure are 45(81%) members after the treatment are improving well which is monitored by doppler scan. In uncontrolled blood pressure, patients 10 (19%) members were not improving because of decreased placental perfusion. Unimproved post for emergency LSCS. severe oligo patients were treated with Fructodex, Alamin, L- arginine sachets and Argihope syrup for 3 days, after 3 days they were monitored with a doppler scan. Prom was another cause of severe oligo that people are posted for LSCS.

In mild oligohydramnios patients, 30 (14.7%) members were treated with L-arginine sachets and highwater intake after 10 days, the liquor was monitored with a doppler scan. Out of 30 members, 24 members improved. Based on this, water intake is the major factor affecting the womb's liquor.

91 (44.8%) members of moderate oligohydramnios patients were treated with L- arginine sachets and capsule Astymin forte. Their liquor improved was monitored after 1 week due to regular intake of medication and highwater intake and 61 members' liquor improved.

The complications we monitored for mild and moderate patients were abdominal tightness, decrease foetal movements and fewer causes of IUGR. Most of the IUGR cases are associated with severe oligohydramnios.

CONCLUSION

The conclusion of the study is that oligohydramnios treatment is showing improvement in mild, moderate and severe oligohydramnios patients. But patients with uncontrolled hypertension were not showing liquor improvement because of their decreased placental perfusion. Low water intake, diarrhoea and primary rupture of membranes are the major cause of the development of mild and moderate oligohydramnios. Sever oligo is mostly caused by pregnancy-induced hypertension. Gestational diabetes and thyroid do not cause oligohydramnios in pregnancy condition.

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