DOI Number: 10.5958/2321-1032.2019.00012.3

Study of Hypothyroidism in Pregnancy of Punjab Women

Hemant Gopal[1], Harkiran Kaur Khaira[2], Smita Sinha[3], Saranpal Singh[4]

[1]Associate Professor, Department of Medicine, [2]Professor, Department of Obstetrics & Gynaecology, [3]Associate Professor, Department of Obstetrics & Gynaecology, [4]Professor, Department of Biochemistry, Adesh Institute of Medical Sciences and Research, Bathinda, Punjab

ABSTRACT

Out of 95 pregnant women 18 women had hypothyroidism .The profile of Thyroid was -TSH- was 3.40.± 7.74 in first trimester ,3.18±5.52 in second trimester ,2.95±2.32 in third trimester of pregnancy free T4The values were 1.13 ±0.20 in first trimester ,1.12 ±o .20 in second trimester ,1.08±o.19 in third trimester of pregnancy. TPAb values were 42.58±122.58 in first trimester ,44.37±123.75 in second trimester ,49.65±150.74 in third trimester .In addition to this ,the correlated clinical study ,BMI was 23.4±4-2. Cholesterol value was 202.3±32.3(mg/dl), Triglyceride value was 182.2±90.1,(mg/dl)ESR -22.18±11,Hb-11.12±1.30 (g/dl).This study will certainly help the gynaecologist,physician,and nutritional expert to take preventive measures to avoid the adverse effects to mother and child by providing pharmacological and nutritional supplement agents because hypothyroidism and hyper thyroidisam are the global problem and it is under the surveillance of WHO Program.

Keywords *-- Roch modular kit, ECLIA Technology , Trimster, Auto immune.*

INTRODUCTION

Thyroid disorders are the second most common disorders during pregnancy after diabetes mellitus. ([1]) ([2])..The incidence of sub-clinical hypothyroidism is 2 to 3% but overt hypothyroidism is 0.3 to 0.5% and hyper thyroidism is 0.1 to 0.4% during pregnancy ([3]).Indian study of hypothyroidism varied from 8.59 to 39 (from Kashmir to TamilNadu)([4]).but many study have shown that, even mild hypothyroidism during pregnancy is potential responsible for psycho neurological deficits in fetus .Many signs and symptoms of hypothyroidism may go un noticed during pregnancy be attributed to pregnancy itself ([5])..Thus only Thyroid function test may be useful in diagnosing this disorder and in providing relevant information to obstrecian and gynecologist because TSH levels are suppressed by elevated concentration of human chorionic gonadotrophin (HCG) .Hence attempt was made to study the hypothyroidism in all the three phases of pregnancy so that proper treatment can be given to pregnant mother so that fetus to be born healthy physically and mentally because untreated hypothyroidic mothers will have profound effect on intellectual development on their children

Corresponding author:
Dr Harkiran Kaur Khaira
Professor, Department of Obstetrics & Gynaecology,
Adesh Institute of Medical Sciences and Research,
Bathinda -151001 Punjab

MATERIAL AND METHOD

Out of 95 pregnant women aged between 20-28 years old, regularly visiting to Adesh institute of medical sciences and research hospital Bathinda -151001 punjab. 18 (Eighteen) were selected for study .As they were suffering with Hypothyroidism and referred by Obg& Gynecology department. Their BMI, Cholesterol ,Triglyceride, ESR, Hb %,was studied. TSH, FT4,TPOAb, carried out by using Roch modular kit using ECLIA technology. Type -2 diabetic and epileptic pregnant women were excluded from this study. The duration of this study was about Three years.

OBSERVATION AND RESULTS

Out of 95 pregnant women 18 had Hypo thyroidic problem

Table -1: Clinical correlations in Hypothyroidism women in pregnancy

No of Patients - 18

Sl.no	Particulars	Mean values
1	B M I (Body mass index)	23.4 ± 4.2
2	Cholesterol (mg/dl)	202.3 ± 32.3
3	Trygly ceride (mg/dl)	182.2 ± 90.1
4	ESR	22.18 ± 11
5	H b (g/dl)	11.12 ± 1.30

Table- 1 Mean value of BMI was 23.4±4.2

2- Cholesterol -- 202.3±32.3 (mg/dl) ,3- Triglyceride --182.2±901 ,ESR -22.18±11 ,Hb% --11.12±1.30 (mg/dl)

Table-2: Profile of Thyroid in pregnant women of Punjab

No of Patients - 18

Sl.no	Names of parameters	First Trimester of pregnancy	Second Trimester of pregnancy	Third Trimester of pregnancy
1	TSH	3.40 ± 7.74	3.18 ± 5.52	2.95 ± 2.32
2	FT4	1.13 ± 0.20	1. 12 ± 0.20	1.08 ± 0.19
3	TPOAb	42.58 ± 122.58	44.37 ± 123.75	49.65 ± 150.74

Table -2 Profile of Thyroid in pregnant Women

a - TSH -First trimester of pregnancy -3-40±7.74 ,Second Trimester of pregnancy --3.18±5.52, Third Trimester of pregnancy -2.95±2.32.

b--FT4-- First trimester of pregnancy -1.13±0.20, Second trimester of pregnancy -1.12±0.20 ,Third trimester of pregnancy 1.o8±o.19.

c--TPOb--First trimester of pregnancy 42.58±122.58 ,Second trimester of pregnancy -44.37±123 .75 . Third trimester of pregnancy -49.65 ±150.74.

DISCUSSION

In the present study of Hypothyroidism of pregnancy in Punjab women .Out of 95 pregnant women 18 were suffering with Hypothyroidism .Apart from Hypothyroidism other clinical problems were high BMI (Body mass index) mean value was 23.4±4.2, Cholesterol value was 202.3±32.3 and Triglyceride value was 182.2±90.1 (mg/dl),ESR was 22.18±11 and Hb% was 11.12±1.30.(Table-1) .It indicates that Hypothyroidism was correlated to multiple clinical problems or these abnormal findings could be the result of Hypothyroidism .The Thyroid profile TSH was 3.40±7.74 in first trimester ,3.18±5.52 in second trimester, and 2.95±2.32 in third trimester of pregnancy .Similarly ,Free T4 was 1.13±0.20 in first trimester ,1.12±0.20 in second trimster,1.o8 ±0.19 in third trimester of pregnancy. Moreover TPOAb value was 42.58±122.58 in first trimester ,44.37±123.75 in second trimester ,49.65±150.74 in third trimester of pregnancy. These above mentioned profile shows that,TSH and T4 were highly deficit in second and third trimester of pregnancy .It was also observed in previous studies of India and abroad also [6][7][8].Auto immune hypothyroidism or hyper thyroidism frequent show familial aggregation [9].and 85% cases of Hashmito thyroiditis remain cause of hypothyroidism .Endemic iodine deficiency also a common cause of

hypothyroidism during pregnancy .Therefore iodine status should be normalized in the regions of iodine deficiency .The WHO recommends 200 micrograms of daily iodine intake by the mother. The fetal thyroid gland begins to produce thyroid hormone at about 10 to 12 weeks of gestation ,so during the end of first trimester of pregnancy fetus depends on maternal supply of thyroid hormones which is necessary for fetal growth .From second trimester onwards the demands are met by the mother and fetus [10].but in present study there was acute deficiency in Third trimester also because pregnant women were anemic as Hb% was 11.1±1.30 ,and elevated level of cholesterol (202.3±32.3) ,high level of Triglyceride (182.2±90.1) therefore there was no proper blood circulation between maternal and fetus Hence during the study of hypothyroidism of pregnancy the evacuation of lipid profile and Hb% should be ruled out to confirm the placental blood circulation so that proper treatment can be given to lessen the cholesterol and Triglyceride levels to enhance the blood supply to stabilize the placental barrier to provide proper nutrition ,gaseous exchange ,metabolites the growing fetus .As in fetus thyroxin hormone develops from the neurons if the neurons are healthy and matured in stipulated period of fetal growth .Under such condition if there is alteration in maternal thyroid function ,overt or sub-clinical affect the fetus directly by the way of trans placental passage abnormal level of maternal hormone ,thyroid antibodies (TPOAb) or prescribed medication or in directly by altered gravid physiology. Moreover various maternal and fetal adverse effect due to hypothyroidism results into abortion, prematurity ,preeclampsia,anaemia,placental abruption ,post-partum hemorrhage ,IUGR ,neo-natal respiratory distress ,low IQ of new born etc.[11]

SUMMARY AND CONCLUSION

The present study of hypothyroidism in pregnancy of Punjab women will certainly help the Obstrecian and gynecologist, pediatrician, and physician to rule out the various clinical problems due to hypothyroidism in pregnancy Apart from medication nutritional status in pregnancy is also important to avoid the adverse effect for both mother and child. The study further demands nutritional and genetic study. Type, quality and quantity of diet plays vital role for development of fetus and keeps mother healthy. Genetic study t0 rule out or predict the health status of fetus because exact mechanism of secretion and quantum of hormone, duration of secretion is still un-clear.

This research paper is approved by ethical committee of Adesh Institute of medical science and research centre Bathinda -151001.Punjab

No **Conflict of Interest**

No **Funding**

REFERENCES

1- Betforr,M A,-Thyroid and endocrine emergencies .Obst.intensive care .manual 2nd edition, 2005, page-120-42..Tata Mc grow new Delhi publication

2- Sahasra buddhe .A ,Pitale .S--Screening for thyroid dysfunction during pregnancy. Thyroid .Res .pract.2012,vol.9.15-17

3- Joshi .S, Raut .V- -Thyroid .Womb to tomb .FOGSI .Focus 2006.page ,4-7.

4- Dinesh kumar ,Dhanwal sarita ,Bajaj Rajesh Rajput Subhakar chowdhary- prevalence of hypothyroidism in pregnancy .An epidemiological study from ii cities in 9 states of india.Indian j.Endocrinol Metab.2016.may -june 20(3),387-390.

5- Quin W,Zhang .L .Han .M ,Khar S ,Tao S--Screening of thyroid dysfunction during the second trimester of pregnancy..JEndocrinol. invest.2013,36.407-411.

6- Habimana.L Twite.K .E- Daurmerie C-- High prevalance of Thyroid dys function among pregnant women in Lubumbashi.Democratic republic of cango Thyroid 2014,24,568-75.

7- Casey .B M,Dashe .J S .Well C.E-- subclinical hypothyroidism and pregnancy out comes.Obstet and Gynaecol.2005,,105.239-45.

8- Allan W.C Haddow .JE ,Palomaki G .E --Maternal thyroid defeciency and pregnancy complications .J med.screen 2000,7,127-30.

9- Michel Swash -Hutchisons clinical methods .12th edition 2000,65-66. W BSaunders company ltd,publications .London,philadelphia, Toranto,,Sydney ,,Tokeo.

10- Gupta K -Thyroid disorders and pregnancy .FOGSI-FOCUS, .Pregnancy 20089,10,59-66.

11- Lazarus J H.Screening for thyroid dysfunctioning in pregnancy .Is it worth while ?J .Thyroid Res .2011.201,39-70.