



THYROID DYSFUNCTION AMONG HYPERTENSIVE PREGNANT WOMEN IN TERTIARY CARE HOSPITAL

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ABSTRACT

Background: About 10% of pregnant women are affected by Hypertension which is a universal health problem that leads to hospitalization, and even death of the mother. These illnesses of gestation period may be characterized by different syndromes, comprising long-lasting and gestational hypertension that results in seizures.

Aim: The Aim of this study was to find out the Thyroid Dysfunction among Hypertensive Pregnant Women in tertiary care hospital

Material and Methods: This observational study was conducted at Hayatabad Medical Complex from August 2019 to July 2023 after the approval from the ethical committee of the institute. A total of 101 pregnant women visited the hospital were included. The inclusion criteria were pregnant women diagnosed with hypertension and thyroid dysfunction and patients who discharge, pass away, or leave the hospital in between period of the study were excluded. Data were collected based on various variables like parameters like age, gestational age, length of stay were assessed using one sample t-test and were analyzed through SPSS software version 24 to find the outcomes. For Test of significance of hypertension and hypothyroidism in pregnant women we used Pearson Chi-square test $\{\chi^2\}$ -test

Results A total of 101 patients participated in this study which were recognized and examined for final outcome. Among these patients the frequency of hypothyroidism was (47%) followed by hypertension (32%) and females with both hypertension and hypothyroidism were 21% as presented in SPSS software version 24 which was used for the Statistical analysis and parameters were evaluated through one sample t-test. The p value found was <0.001 which indicates that these parameters are statistically significant. So in pregnant women there was statistically noteworthy variance among the high blood pressure and hypothyroidism.

Conclusion: It was identified from this study that there were changes in the thyroid function of pregnant women with hypertension and hypertensive pregnant women had hypothyroidism.

Key words: Thyroid Dysfunction; Hypertensive; Pregnant Women

Introduction

About 10% of pregnant women are affected by Hypertension which is a universal health problem that leads to hospitalization, and even death of the mother. These illnesses of gestation period may be characterized by deferent syndromes, comprising long-lasting and gestational hypertension that results in seizures [1]. Even though the enormous burden on maternal and neonatal health, proof on the danger of thyroid dysfunction is inadequate. A condition known as hypertension causes the blood's force on the artery walls to be excessively high, which can damage organs and cause serious disorders. One of the most prevalent chronic disorders has been identified as high blood pressure, which can be defined as a blood pressure reading of more than 140/90 mmHg [2]. Pregnancy-related high blood pressure has been linked to a number of health problems and may increase the mother's risk of issues before, during, or after delivery. It may have an impact on the placenta's growth, depriving the unborn child of enough oxygen and nutrients [3]. Thyroid problems (thyroid and underactive thyroid) during pregnancy can lead to blood pressure and other negative health effects for both the baby and the mother. These effects include a chance of miscarriage pregnancy related high blood pressure, premature birth, problems, with the placenta, low birth weight and fetal death [4]. Moreover, it is worth noting that hypothyroidism could potentially contribute as a separate risk factor for preeclampsia and fetal growth restriction. Nevertheless, there remains some ambiguity regarding the precise mechanisms through which thyroid dysfunction impacts hypertensive disorders during pregnancy [5]. Understanding the thyroid hormone imbalances linked to pregnancy induced hypertension, in Delta State, Nigeria is crucial for health. This knowledge can greatly contribute to the management of women with high blood pressure. Maintaining levels of maternal thyroid hormones is vital, for balance and enhancing pregnancy outcomes [6, 7]. Research has shown that individuals, with hypothyroidism experience a decrease, in endothelium associated vasodilation. This suggests that there may be an increased likelihood of developing hypertension related complications during pregnancy(8).The common occurrence of thyroid dysfunction, during pregnancy is a rise, in TSH levels while maintaining FT3 and FT4 levels.(9) Currently the tests used to assess thyroid function, including TSH, T3 and T4 may sometimes be insufficient, in diagnosing the illness. because T3 and T4 levels are predisposed by so many non-specific diseases (10). The current study was carried out to fine out the Thyroid Dysfunction among Hypertensive Pregnant Women

Material and method

This observational study was conducted at Hayatabad Medical Complex from august 2019 to July 2023 after the approval from the ethical committee of the institute. A total of 101 pregnant women visited the hospital were included . The inclusion criteria was pregnant women diagnosed with hypertension and thyroid dysfunction and patients who discharge, pass away, or leave the hospital in between period of the study were excluded. Data were collected base on various variables like parameters like age, gestational age, length of stay were assessed using one sampl t-test and were analyzed through SPSS software version 24 to find the outcomes. For Test of significance of hypertension and hypothyroidism in pregnant women we used Pearson Chi-square test { χ^2 -test}

Results

A total of 101 patients participated in this study which were recognized and examined for final outcome. Among these patients the frequency of hypothyroidism was (47%) followed by hypertension (32%) and females with both hypertension and hypothyroidism were 21% as presented in **(Fig no 1)**. SPSS software version 24 was used for the Statistical analysis and parameters were evaluated through one sample t-test. The p value found was <0.001 which indicates that these parameters are statistically highly noteworthy **(TABLE 1)**

CHI-SQUARE ANALYSIS:

Null hypothesis (H0):

Hypertension and hypothyroidism are dependent.

Alternative hypothesis (H1): Hypertension and hypothyroidism are independent. As the chi-square value is greater than the table value null hypothesis is rejected as presented in **table no 2**

Chi-square test (Test of significance by Pearson) { χ -test}: $\chi^2_{cal}=41.422$ {at 95% self-confidence limit, with degree of freedom=1, $\chi^2_{tab}=3.741$ } $\chi^2_{Cal} > \chi^2_{tab}$ { $42.322 > 3.741$ } at 5% level of significance. So in pregnant women there was statistically noteworthy variance among the high blood pressure and hypothyroidism

Categorization of drugs: For the better outcome the set of drugs recommended to the patient presented in **table no 3**.the effective drug during pregnancy was multivitamins followed by antihypertensive agents, thyroid agents and antacids.

TABLE 1: One sample t-test, mean and standard deviation for age, gestational age and length of stay		
Parameters	Test Subjects (Mean ± SD)	p-value
Age	(26.63±4.087)	<0.001
Gestational age in weeks	(27.69±6.378)	<0.001
Length of stay	(7.79±2.701)	<0.001

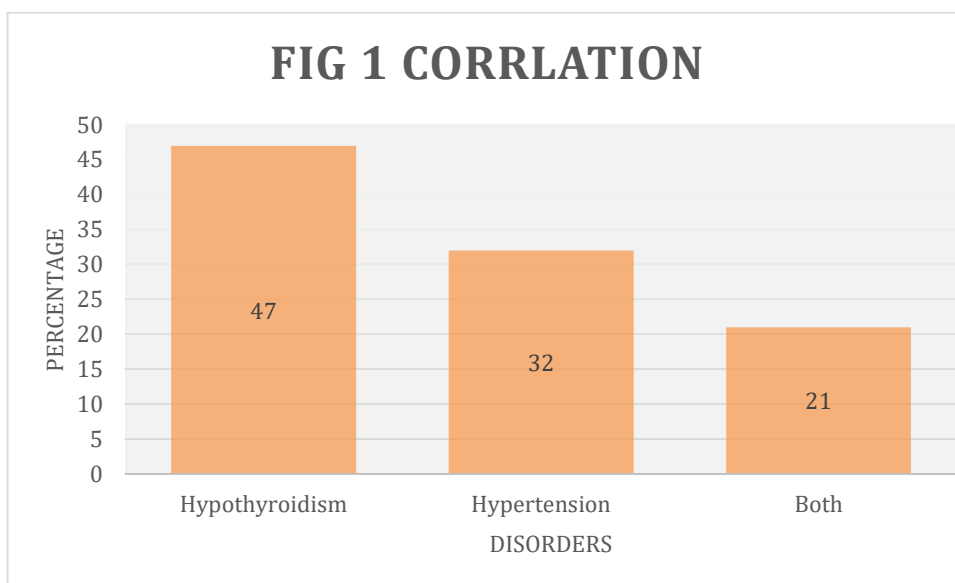
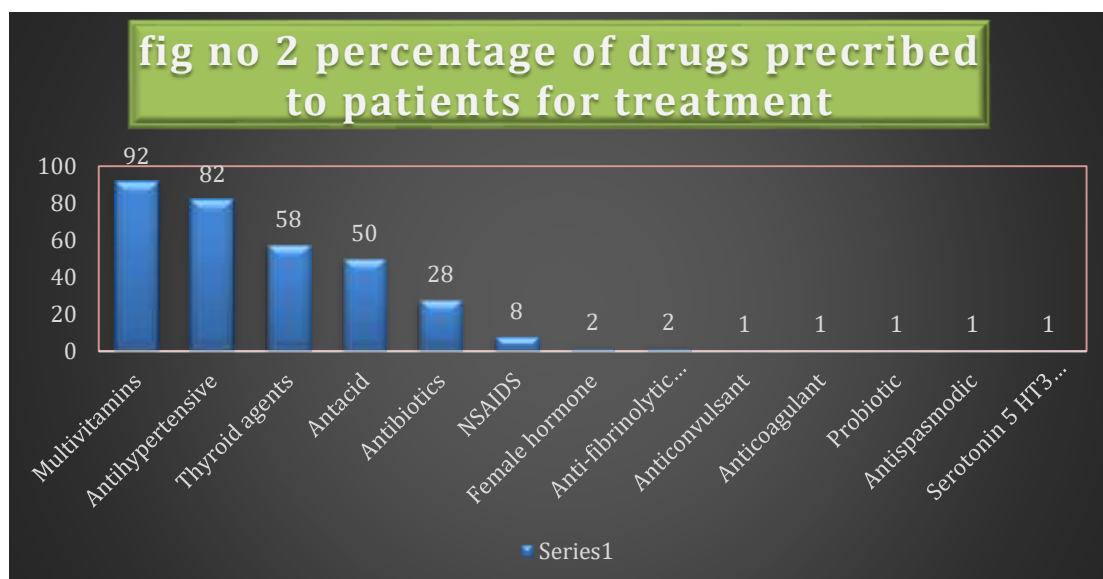


TABLE 2: Correlation between hypothyroidism and hypertension in pregnant women						
		Women with hypothyroidism		Total	Percentage	Chi square
		No	yes			
Women with hypertension	No	0	48	48	47	42.422
	Yes	32	21	53	53	
Total		32	69	101	100	



Discussion

This observational study was conducted to determine Thyroid Dysfunction among Hypertensive Pregnant women. The emphasis of this study was to examine the disorders like hypothyroidism and hypertension during pregnancy. The outcome of this research can be advantageous to humanity. The outcomes of this study explored that Hypothyroidism and hypertension was found mostly in age group of 21-25 year pregnant women. The results of the current study are similar to the previous investigates performed by Potlukova E et al 2012 8, Singh V et al 2015 (11). Our study evaluated that decrease level of thyroid hormone leads to hypertension in pregnancy. The existing study agreed with the study done by Ignatius C M et al 2017 (2). In the current research gestational age in weeks out of 101 were 31-40 (n=49), 21-30 (n=29), 11-20 (n=17) 1-10 (n=6) weeks. The current study resembled with the study completed by Saraladevi R et al (12).

From pur study it was found that of all participants 69 had hypothyroidism and TSH levels were found to be augmented in majority of the patients, all-out 56 individuals had TSH levels beyond 5 ml U/L and 13 individuals had TSH levels 0-5 ml U/L, and the levels of T3 and T4 levels were generally normal in our study. The present study paralleled with the study done by Singh A et al 2020 (13). In this study a total of 53 patients had hypertension. Out of which 32 had mild and, 12 had severe preeclampsia and 9 had gestational hypertension. The current study results are similar with the study carried out by Kumari R et al. (14). From our study it was demonstrated that multivitamin were more effective drug (92%) antihypertensive (82%), thyroid agents (58%) and PPI (50%), during the treatment of pregnancy and most of the patients were discharged with in week. Thus it has been proved that supervision play a vital role in the treatment thyroid dysfunction in hypertensive pregnant women. These outcomes are same to the study carried out by Kashi Z et al (15).

Conclusion

It was identified from this study that there were changes in the thyroid function of pregnant women with hypertension and hypertensive pregnant women had hypothyroidism. An assessment of hypertensive pregnant women for thyroid function may be regularly carried out to facilitate primary identification and management and to progress gestation results.

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