

The relationship of thyroid disorders with high blood pressure that causes abortion in women during pregnancy

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Abstract: Blood pressure disorders during pregnancy are among the most common problems that women face during pregnancy and the main cause of maternal and child morbidity in the period related to childbirth all over the world, preeclampsia can occur as a result of blood pressure disorders and ranges from approximately 5-10% of pregnancies, Gestational hypertension usually occurs after 5 months of pregnancy and is characterized by high blood pressure, albuminuria and other systemic ailments with postpartum bleeding and pregnancy complications, while the incidence rate of Gestational hypertension disorders (GHD) is 16%. The research was carried out at the Misrata Medical Centre, a specialized facility for diabetes and endocrinology in Misrata. The study included patients who visited the centre between October 10, 2022, and January 10, 2023. It is important to note that the sample was selected randomly. Following the patients' consent, personal information was gathered, including age, duration of blood pressure exposure, thyroid issues, and instances of abortion. The study included 120 patients with blood pressure, the ages ranged from 18 to 52 years, and during the pregnancy was the most common period for the incidence of hypertension, and the age group 33 to 40 was the most vulnerable to thyroid problems and abortion. According to the results of the current study, pregnant women who are between the ages of 33 and 40 are more likely to have high blood pressure. Moreover, this group is more likely to experience abortion and have thyroid gland issues.

key words: Thyroid disorders, blood pressure, abortion pregnant woman.

Introduction

Blood pressure disorders during pregnancy are among the most prevalent complications that women encounter, representing a leading cause of maternal and neonatal morbidity and mortality around the globe. Preeclampsia, which can arise from these blood pressure issues, occurs in approximately 5-10% of pregnancies [1], Worldwide, nearly 800 women die every day due to pregnancy complications [2].

Gestational hypertension typically develops after the fifth month of pregnancy and is marked by elevated blood pressure, albuminuria, and additional systemic issues, which can lead to postpartum bleeding and other complications during pregnancy. The incidence of gestational hypertension disorders (GHD) is approximately 16% [3], However, the exact causes of gestational hypertension disorders (GHD) remain unclear. Over the years, researchers have put forward several theories including uterine ischemia, placental in situ, vascular injury, immune factors, and genetic factors [4].

Thyroid function changes during pregnancy, and inadequate adaptation to these changes leads to thyroid dysfunction [5, 6], and some changes occur in thyroid function due to an increase in thyroid hormone binding globulin (TBG), and an increase in thyroid hormone binding globulin (TBG), total iodine clearance, thyroid effect of HCG counteracts [7, 8].

In previous studies the prevalence of overt hypothyroidism was 1-1.5% [5], and the prevalence of subclinical hypothyroidism was 5-8% [9], the main pregnancy complications of hypothyroidism were anemia, pre-eclampsia, prematurity, low birth weight, fetal distress during labor, fetal death, congenital hypothyroidism, and neurocognitive defects in infants. Subclinical hypothyroidism may correspond to preterm birth in about 0.2-0.8% of pregnancies [5].

While maternal hyperthyroidism causes premature birth, intrauterine growth restriction, and thyrotoxicosis in newborns [10], many studies have shown that both hyperthyroidism and hypothyroidism may increase the risk of high blood pressure [11], the results of two recent studies are characterized by the existence of a positive relationship between TSH within the reference range and systolic and diastolic blood pressure. The relationship between TSH within the reference system and blood pressure has not been sufficiently studied [12, 13], Some of these studies found an increased risk of hypertensive disorders in affected mothers. with hypothyroidism or hyperthyroidism [14, 15], while others did not find any associations [16].

Therefore, it is important to raise awareness of autoimmune thyroid disease and prevent complications

associated with its treatment during pregnancy, the current study linked between thyroid disorders and blood pressure and its relationship to the occurrence of abortion during pregnancy.

The method of work

Study design

Following the ethical committee's approval at Misrata Medical Centre, and specialized facility for the management and treatment of diabetes and endocrine diseases, a random sample was selected from patients attending the pregnancy follow-up clinic and the accommodation

Results and discussion

The study included 120 cases attending the aforementioned centres, the ages ranged from 18 to 52 years, and most of the cases were from the age

department. This sample included pregnant women who experienced hypertension during pregnancy or in the periods before or after it, as well as those with thyroid issues and instances of abortion.

Data collection

The study involved cases from the aforementioned centers, covering the period from October 10, 2022, to January 10, 2023. Following the patients' consent, personal information was gathered, including age, duration of exposure to blood pressure issues, thyroid conditions, and instances of abortion.

group 28 to 40 years, this is similar to the study in Iraq, which targeted age groups less than 40 years[17], as shown in figure (1).



Figure (1): The age groups of cases

Among the results obtained from the current study is that most of the cases with blood pressure are from age groups (28-32), (33-40) as figure (2).

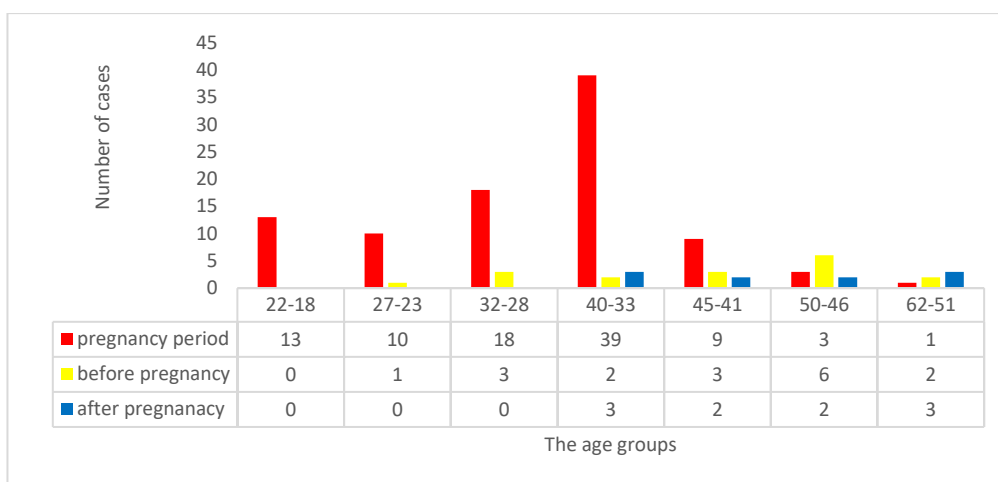


Figure (2): Distribution of the period of infection of cases with high blood pressure.

Among the results obtained from the study is that most of the cases were subjected to hypothyroidism, and they

are more likely to abortion, as the percentage reached 50% as figure (3), When studying the correlation

between hyperthyroidism and hypothyroidism and the occurrence of abortion during the patient’s pregnancy, we found that there is a correlation and the significance

value is less than 0.001. This is similar to the study[18], and as shown in Table (1).

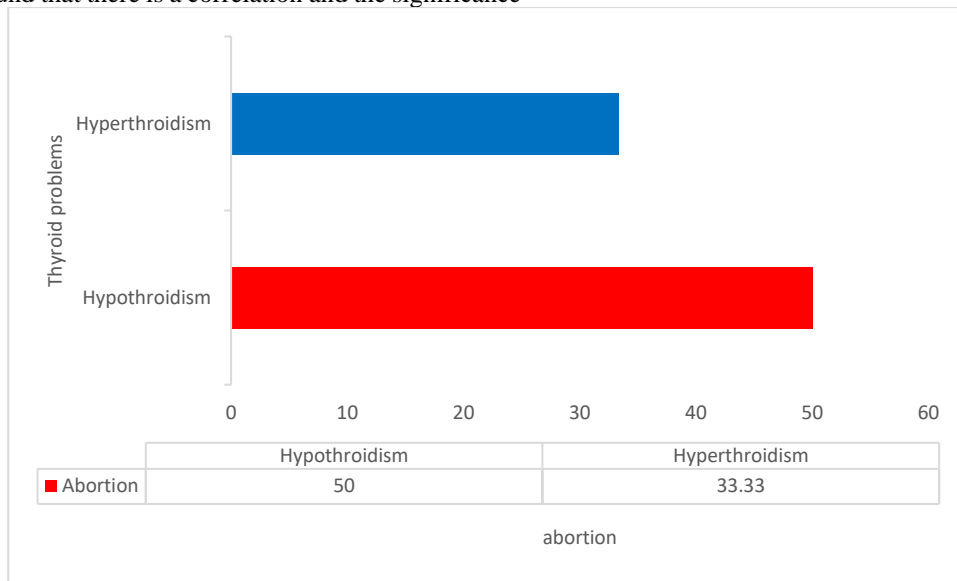


Figure (3): Distribution of miscarriage cases according to hyperthyroidism or hypothyroidism.

Table (1): The association between hyperthyroidism and hypothyroidism and abortion.

correlation	Std. Deviation	Std. Error Mean	Sig. (2-tailed)
Hypothyroidism - abortion	.56410	.05149	.000
Hyperthyroidism - abortion	.52919	.04831	.000

p value < 0.05 is considered statistically significant and less than 0.01 is highly statistically significant *Indicates statistically significant difference

In Figure (4) it is illustrated that the majority of cases of hypothyroidism are found within the age group of (33 - 40), indicating that this is the most to abortion.

This is similar to a study in Qatar, which showed that the age groups (30-39) are the most vulnerable to abortion[19].

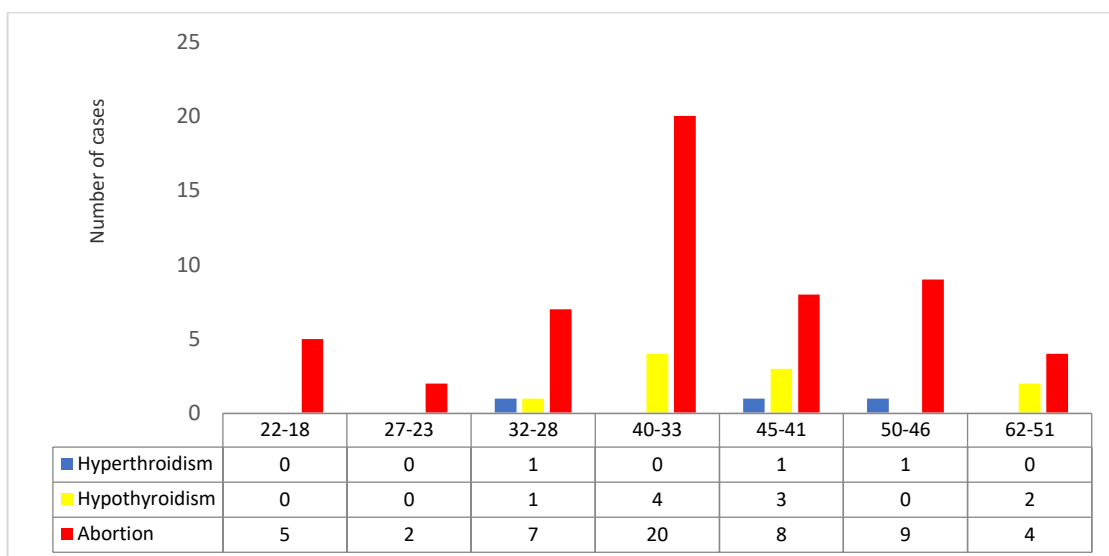


Figure (4): Distribution of cases according to age groups, thyroid problems, and exposure to abortion.

From the results obtained from the current study, as shown in Figure (5) which shows the distribution of cases by age groups in the pregnancy stage of patients suffering from blood pressure and thyroid problems, which exposes them to miscarriage, we find that the most cases of high blood pressure were (28 – 32) and (33 – 40) and most of the cases were of hypothyroidism.

The age group 33-40, which is the same group, was at risk of abortion. This is similar to the study that linked glandular insufficiency to the occurrence of abortion[17, 20, 21],It is not consistent with a study in Iraq that linked hyperthyroidism, high blood pressure, and abortion[22].

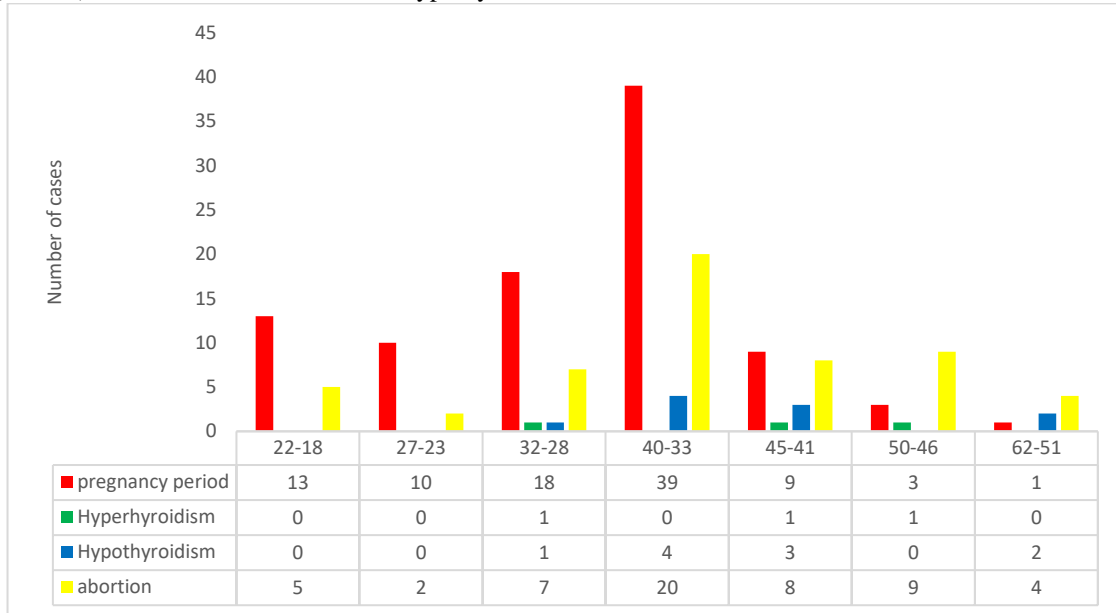


Figure (5): Distribution of cases during pregnancy with thyroid problems and abortion.

Conclusion

Women are more susceptible to complications during pregnancy, including the diseases that accompany them, whether blood pressure or diabetes. We find from the current study that the age group 33-40 is the group most affected by blood pressure and suffers from hypothyroidism and the group that has the most miscarriages, including a number of pregnant women.

Monthly follow-up of pregnancy and performing medical tests to avoid miscarriage

Acknowledgement

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