HYPERTENSIVE DISORDERS IN PREGNANT WOMEN AFTER RECEIVING INFERTILITY TREATMENT

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Introduction

Infertility is the inability of a couple to conceive clinically after 18 months of regular, unprotected sexual activity or as a result of a person's ability to reproduce, either alone or with their partner. infertility is classified into primary and secondary infertility. The reported average rate of infertility was 13.2%. The most common causes of infertility include uterine, tubal, pelvic, and ovulation problems. The simplest and least invasive treatment for patients with anovulatory infertility is ovulation induction. Prior to assisted reproductive treatments, women with ovulatory problems must first attempt conventional ovulation induction methods because they have high success rates. there are many drugs (clomiphene citrate, letrozole, tamoxifen, gonadotropins, GNRHs agonist and antagonist, and many protocols for induction of ovulation according to the cause of anovulation. The American College of Obstetricians and Gynecologists (ACOG) issued the most recent definition of hypertension in pregnancy in 2013, and modifications and recommendations were made in 2019 and 2020. The majority of international guidelines agree that hypertension in pregnancy is defined as blood pressure (BP) more than 140/90 mm Hg. Hypertension may be primary or secondary, 90–95% of adult cases of primary or essential hypertension are caused by environmental or genetic factors. Secondary hypertension includes numerous aetiologies, including renal, vascular, and endocrine origins, and constitutes 2–10% of cases. Hypertensive disorders of pregnancy (HDP) encompass chronic hypertension, gestational hypertension, preeclampsia/eclampsia, and preeclampsia superimposed on chronic hypertension. HDP are the second greatest cause of maternal mortality worldwide after haemorrhage. The pathophysiology of preeclampsia and its lingering effects are heavily influenced by abnormal placentation, which causes extensive abnormal remodelling of placental arteries. Preeclampsia is a multisystem condition, In addition to potentially causing severe hypertension and end-organ dysfunction or failure. Labetalol, nifedipine, and methyldopa are the first-line long-term pharmacologic treatments for pregnant women with hypertension.

Aim of the work

The aim of this study was to find the association between receiving infertility treatment and developing hypertensive disorders in subsequent pregnancy.

Patients and Methods

The study was conducted upon (247) pregnant females who had received infertility treatment, their age from (20-35years), their BMI from (20-25Kg/m^2) and cases of primary and secondary infertility. We excluded cases of - Secondary infertility that had pre eclampsia in the previous pregnancy, Pre-existing history of hypertension. Family history of hypertension. Any cardiac or renal disease, Diabetes mellitus, Chronic inflammatory diseases e.g. inflammatory bowel diseases (Crohn's disease, ulcerative colitis). Active infectious diseases e.g. viral hepatitis, TB, syphilis. Autoimmune diseases e.g. systemic lupus erythematous, rheumatoid arthritis.

The selected patients will subjected to full history taking ,complete physical examination including measuring of blood pressure 3times, one each trimester, Routine laboratory tests: complete blood count, urine analysis (albumin in urine), liver function tests, kidney function tests, Random blood sugar, Record the type of infertility treatment received by the patient, the dose of the drug used and for how long. The cases devided into 2 groups: oral treatment and injection treatment.

Results

Table (1): Distribution of the studied cases according to type of hypertension developed (n = 247)

	No		Yes	
	No.	%	No.	%
Gestational hypertension	237	96.0	10	4.0
Preeclampsia	227	91.9	20	8.1

Thirty women out of 247 developed hypertensive disorders of pregnancy with 10 patients had gestational hypertension (4%) and 20 patients developed preeclampsia (8.1%) (table 1).

Table (2): Distribution of the studied cases according to infertility treatment (n = 30)

Infertility Treatment	No.	%
Aromatase inhibitor	9	30.0
Clomiphene citrate	4	13.33
Highly purified FSH	4	13.33
Recombinant FSH	3	10.0
Human FSH	10	33.33
Highly purified human menopausal gonadotropin	0	0.0
GnRH antagonist	0	0.0

Cases of hypertensive disorders were distributed according to infertility treatment as 10 cases received human FSH (33.33%), 9 cases received aromatase inhibitors (30%), 4 cases received either clomiphene citrate (13.33), 4 cases received highly purified FSH (13.33%), 3 cases received recombinant FSH (10.0%) and no cases received Highly purified human menopausal gonadotropin developed hypertensive disorders. No cases received GnRH developed hypertensive disorders (table 2).

Conclusion

Pregnancy after receiving infertility medications complicated by hypertensive disorders of pregnancy in 12.1% of women. Hypertensive disorders of pregnancy were reported more frequently after Clomiphene citrate followed by recombinant FSH. Increased incidence of hypertensive disorders of pregnancy after infertility treatment could be explained by the underlying pathology which caused infertility, patient related medical conditions as obesity and the medications used to treat infertility. Our finding regarding hypertensive disorders of pregnancy are supported by anumber of biological plausible causes to obtain supraphysiological levels of estradiol, ovulation inducing drugs such gonadotropins and GNRH agonist are employed. Estrogens have impact on blood pressure and vascular health. Limited studies evaluated the relationship between infertility medications and hypertensive disorders of pregnancy.