



Study Of Fetomaternal Outcome In Pregnancy With Thyroid Dysfunction Associated With Pre-Eclampsia And Ante-Partum Eclampsia

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Abstract

Introduction

Hypertensive disorders of pregnancy are one of the most significant problems of obstetrics with preeclampsia being the most dangerous entity. The risks posed by preeclampsia to the mother include placental abruption, cerebrovascular accidents, postpartum hemorrhage (PPH), pulmonary edema etc. and those to the fetus include intrauterine growth restriction (IUGR), intrauterine fetal demise (IUD), preterm birth (iatrogenic or spontaneous) and birth asphyxia.

Aim And Objective:

Aim of the study was to determine the frequency of thyroid dysfunction in pre-eclamptic and eclamptic pregnant patients and analyze the consequent fetomaternal outcomes.

Material And Methods : A cross-sectional analytical study was conducted in the Department of Obstetrics and Gynecology, Umaid Hospital , Dr.S.N. Medical College, Jodhpur (Rajasthan) India , from January 2021 to September 2021. A total of 56 pre-eclamptic and eclamptic patients fulfilling the inclusion and exclusion criteria were recruited for the study.

Result and Conclusion : Understanding the frequency of thyroid dysfunction in preeclampsia and its impact on fetomaternal outcomes may be helpful in predicting the occurrence and severity of preeclampsia and ante partum eclampsia. Hypothyroidism may be a modifiable risk factor for preeclampsia by early diagnosis and appropriate treatment. Given the potential obstetric and neonatal complications of untreated thyroid disorders in pregnancy, determining the presence of maternal thyroid dysfunction as early as possible in pregnancy and subsequent follow up is crucial.

Keywords: NIL

Introduction

Hypertensive disorders of pregnancy are one of the most significant problems of obstetrics with preeclampsia being the most dangerous entity. The risks posed by preeclampsia to the mother include placental abruption, cerebrovascular accidents, postpartum hemorrhage (PPH), pulmonary edema etc. and those to the fetus include intrauterine growth

restriction (IUGR), intrauterine fetal demise (IUD), preterm birth (iatrogenic or spontaneous) and birth asphyxia.¹

Association of preeclampsia with hypothyroidism have been found in many studies. Reduced thyroid hormones in preeclampsia have been explained to be due to the loss of thyrotropin and protein bound hormones in the urine.² Hypothyroidism can cause

vascular smooth muscle contraction in systemic and renal vessels leading to increased diastolic pressure and peripheral vascular resistance thereby decreasing tissue perfusion.³

Aim And Objective:

Aim of the study was to determine the frequency of thyroid dysfunction in pre-eclamptic and eclamptic pregnant patients and analyze the consequent foeto-maternal outcomes

Material And Methodes

A cross-sectional analytical study was conducted in the Department of Obstetrics and Gynecology, Umaid Hospital , Dr.S.N. Medical College, Jodhpur

(Rajasthan) India , from January 2021 to September 2021. A total of 56 pre-eclamptic and eclamptic patients fulfilling the inclusion and exclusion criteria were recruited for the study. All routine and specific investigations for preeclampsia were done. A fasting venous sample for the estimation of serum levels of thyroid-stimulating hormone (TSH), free triiodothyronine (fT3), free thyroxine (fT4) was taken

The trimester specific normal range of TSH⁴ –

First trimester: 0.1-2.5 mIU/L

Second trimester: 0.2-3 mIU/L

Third trimester: 0.3-3 mIU/L

Observations And Results

1.Thyroid Dysfunction In Preeclamptic And Eclamptic Patients

THYROID DYSFUNCTIONS		EUTHYROID	
SUBCLINICAL THYROID	22	30	56
OVERT THYROID	4		
TOTAL	26	30	56

2. Severity Of Pre Eclampsia With Thyroid Status :

SEVERITY	THYROID STATUS		TOTAL
	Thyroid dysfunction	Euthyroid	
Non Severe Pre-Eclampsia	12 (46.1%)	18 (60%)	30 (53.57%)
Severe Pre-Eclampsia	8 (30.7%)	11 (36.6)	19 (33.92%)
Eclampsia	6 (23%)	1 (3.33%)	7 (12.5%)
	26 (100%)	30 (100%)	56 (100%)

3. Distribution Of Birth Weight Of Babies In Relation To Thyroid Status Of Mothers

BIRTH WEIGHT(KG)	THYROID STATUS	TOTAL
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	EUTHYROID	HYPOTHYROID	
<2.5 KG	7 (25.9%)	13 (44.8%)	20(35.7%)
>2.5 KG	20 (74.1%)	16 (55.2%)	36 (55.3%)
TOTAL	27 (100 %)	29 (100%)	56 (100%)

4. Apgar After 5 Minutes Thyroid Status Total Euthyroid Hypothyroid

APGAR SCORE AFTER 5 MINUTES	THYROID STATUS		TOTAL
	EUTHYROID	HYPOTHYROID	
<7	4 (25.9%)	16 (44.8%)	20 (35.2%)
>7	26 (74.1%)	10 (55.2%)	36 (64.8%)
TOTAL	30 (100%)	26 (100%)	56 (100%)

Conclusion

Understanding the frequency of thyroid dysfunction in preeclampsia and its impact on fetomaternal outcomes may be helpful in predicting the occurrence and severity of preeclampsia and ante partum eclampsia. Hypothyroidism may be a modifiable risk factor for preeclampsia by early diagnosis and appropriate treatment. Given the potential obstetric and neonatal complications of untreated thyroid disorders in pregnancy, determining the presence of maternal thyroid dysfunction as early as possible in pregnancy and subsequent follow up is crucial. It also aids in the early diagnosis of pre-eclampsia and eclampsia and improvement in the fetal and maternal outcome.

References

1. Saxena N, Bava AK, Nandanwar Y. Maternal and perinatal outcome in severe preeclampsia and eclampsia. *Int J Reprod Contracept Obstet Gynecol.* 2016;5(7):2171-6.
2. Kaya E, Sahin Y, Ozkececi Z, Pasaoglu H. Relation between birth weight and thyroid function in preeclampsia eclampsia. *Gynecol Obstet Invest.* 1994;37:30-3.
3. Negro R, Mestman JH. Thyroid disease in pregnancy. *Best Prac Res: Clin Endocrinol Metab.* 2011;25(6):927-43.
4. Stagnaro-Green A, Abalovich M, Alexander E, Azizi F, Mestman J, Negro R, et al. Guidelines of the American Thyroid Association for the diagnosis and management of thyroid disease during pregnancy and postpartum. *Thyroid.* 2011;21(10):1081-125.