ORIGINAL RESEARCH PAPER

Obstetrics & Gynaecology

"THYROID PROFILE IN WOMEN WITH INFERTILITY"

KEY WORDS: Retromandibular vein, anomalous vein, linguofacial venous trunk, common venous trunk.

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ABSTRACT

Thyroid dysfunction can lead to both primary and secondary infertility. In this paper, we discuss the role of thyroid hormone in reproductive age women with infertility.

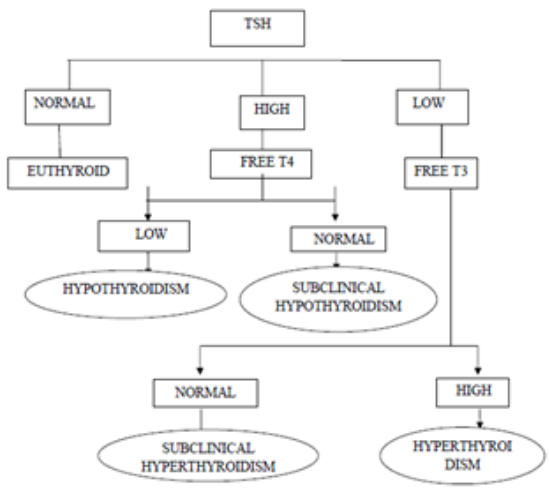
AIM OF THE STUDY: To diagnose thyroid dysfunction in women of reproductive age group and study the association of thyroid disorders with infertility.

MATERIALS AND METHODS: Cross sectional study of 75 women with infertility who attended Gynecology OPD in Thirunelveli Medical College over a period of one year. Thyroid function test of these women were analysed and results were interpreted.

CONCLUSION: Hypothyroidism was most common thyroid dysfunction among infertile women. The incidence of thyroid dysfunction in women with infertility was 29.33%. Subclinical hypothyroidism was more common than clinical hypothyroidism in infertility. Thyroid function tests must be done in women with infertility and thyroid disorders should be ruled out before undertaking other invasive investigations.

INTRODUCTION

Thyroid dysfunction can cause a wide variety of gynaecological problems ranging from abnormal sexual development to menstrual disorder, anovulation, miscarriage and infertility. Subtle changes in thyroid function may lead to absolute or relative infertility in some individuals. In this paper, we discuss the role of thyroid hormone in reproductive age women with infertility.



AMERICAN THYROID ASSOCIATION GUIDELINES JAMA 263 _ 1529 (1990)

TSH receptors are noted on the granulosa cells. T4 increases the action of gonadotrophins in luteinisation and progesterone secretion.

In primary hypothyroidism, decreased GnRH pulsatality occurs which causes diminished level of luteinizing hormone which in turn leads to inadequate secretion of progesterone, ovarian atrophy and amenorrhea. Anovulation with primary hypothyroidism also occurs due to a decreased clearance of prolactin. This ovulatory dysfunction is associated with spontaneous abortions and decreased fertility rate.

In thyrotoxicosis, there is an increased level of SHBG. E2 levels will thus be increased by two to three times. Mean LH level is significantly higher in hyperthyroid women than in normal women while the pulsatile characteristic of gonadotrophins remains unaltered.

AIM OF THE STUDY

To diagnose thyroid dysfunction in women of reproductive age group and study the association of thyroid disorders with infertility.

MATERIALS AND METHODS

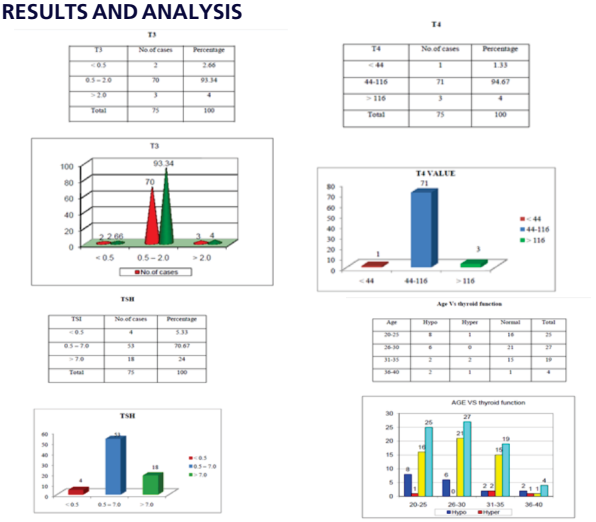
The study was conducted in Tirunelveli medical college and hospital, Tirunelveli. This is a cross sectional study of 75 women with infertility who attended the Gynaecology outpatient department over 1 year. Women of age 20-40 years with no pelvic pathology, not on hormonal treatment and with normal male partners were included in the study.

PROCEDURE

Routine history taking and examination was done. 5ml of fasting blood sample was taken in a clean sterile test tube for thyroid function tests. The method used for thyroid hormonal assay was direct solid phase enzyme immune assay. The kit used in the study was ERBA Thyrokit.

The normal range of thyroid function tests are
T_3 -- 0.5 -2.0 ng/ml
T_4 – 44-116 mmol/litre
TSH – 0.5- 7.0 m IU/ litres

RESULTS AND ANALYSIS

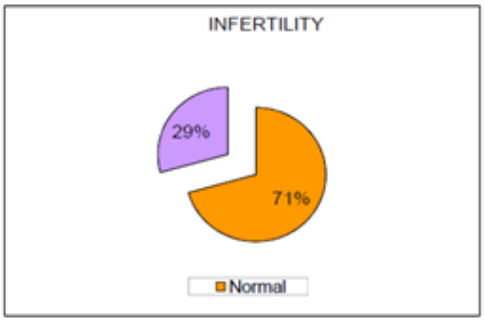


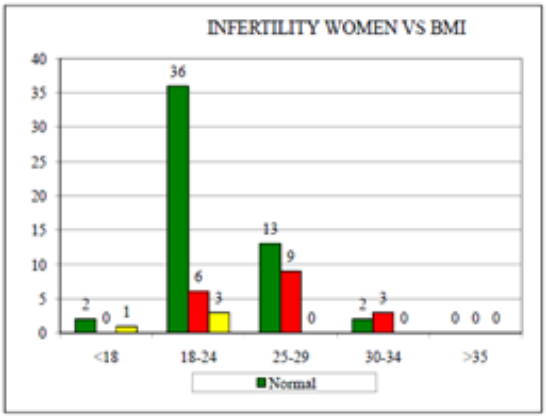
Infertility

		No.of cases	Percentage	P value
Normal		53	70.66	0.005
Abnormal		22	29.33	Significant
Hypo	Clinical	2	2.66	0.013
	Sub Clinical	16	21.33	significant
Hyper	Clinical	3	4	
	Sub Clinical	1	1.33	

Infertility cases

Infertility	No.	%	P value
Primary Infertility	64	85.33	< 0.001
Secondary	11	14.66	Significant
Total	75	100	





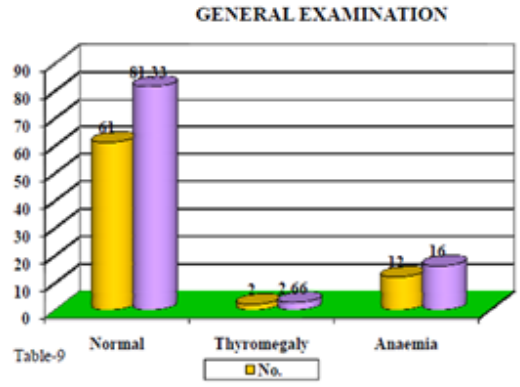
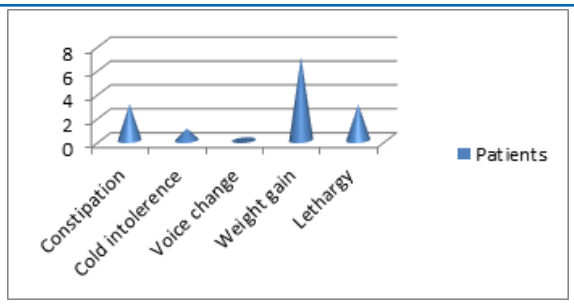
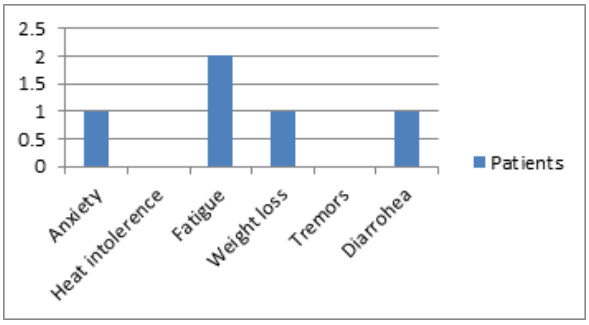


Table-9

Signs and symptoms of hypothyroidism



Signs and symptoms of hyperthyroidism



DISCUSSION

Infertility has a strong association with thyroid disorders and this study highlights it. This extensive study proves that thyroid hormones are needed for normal sexual function.

Although infertility can occur in many endocrine disorders like thyroid dysfunction, hyperprolactinemia, PCOS, diabetes, Cushing syndrome and adrenogenital syndrome, thyroid dysfunction seems to be the most important. This is because subclinical hypothyroidism causes 11.3% of ovulatory dysfunction.

Total thyroid dysfunctions noted in this infertility study were 29.33%. Hypothyroidism was noted in 24%. Hyperthyroidism was noted in 5.33%. Subclinical hypothyroidism was noted in 21.33%. Anaemia was noted in 16% of women with infertility. Increased BMI was noted in 36% of women with infertility.

In this study 69.33% of infertile women were in age group of 20-30 years, 30.67% of infertile women were in age group of 31-40 years.

Only 2.6% of women showed thyroid enlargement in this study. Among women with primary infertility 20% showed hypothyroidism, 6.67% showed hyperthyroidism and 58.67% showed normal thyroid function. In secondary infertility 4% showed hypothyroidism and 10.67% showed euthyroidism.

Among hypothyroid women, 88.89% had subclinical hypothyroidism and 11.11% had clinical hypothyroidism. Among hyper thyroid women, 75% of women had clinical hyperthyroidism and 25% had subclinical hyperthyroidism. This finding reiterates that hypothyroidism is an important cause for infertility.

The study showed a significant correlation between thyroid dysfunction and infertility (p value <0.001). Weight gain was the most common symptom of hypothyroidism (significant p value <0.043). The study shows that subclinical hypothyroidism is more common than clinical hypothyroidism (p value < 0.013).

CONCLUSION

Hypothyroidism was most common thyroid dysfunction among infertile women. Subclinical hypothyroidism was more common than clinical hypothyroidism in infertility. In patients with subclinical hypothyroidism, risk of progression to clinical hypothyroidism was about 5% per year.

Thyroid function test should be done in women with infertility. It has to be done in those women with history of recurrent abortions, delayed puberty, luteal phase defect. It helps to avoid unnecessary invasive investigations, drug therapy and surgery in these patients.

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