



Cross sectional Study of thyroid function and calcium in premenopausal and post menopausal women

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Abstract

Introduction: Hypothyroidism is seen to be common among women in these days. A cross sectional observational study was conducted to find out the S.TSH and calcium Levels in premenopausal and post-menopausal women

Materials and Methods: Study was done in 2 groups. 40 post-menopausal women and 40 premenopausal women

Result: The S.TSH level was found to be highly significant. There is considerable difference in between levels of S.TSH in pre and post-menopausal women. Also, there is considerable difference between the calcium levels of premenopausal and post-menopausal women

Conclusion: S.TSH levels were significantly higher in post-menopausal women when compared to pre-menopausal women. Serum Calcium levels were significantly lower in post-menopausal women

Keywords: thyroid function and calcium, S.TSH, S.Calcium, premenopausal women, post menopausal women

Introduction

The word menopause is derived from greek word "MENO" meaning month & "PAUO" meaning to stop. Menopause is a spontaneous progressive decline of ovarian function that starts at the age of 40-50 and results in infrequent ovulation and decrease of menstrual function, progressing to permanent cessation of menstruation by 45-55 years^{1,2}. Hormonal changes of menopause often manifested by deleterious physical psychological and sexual changes in post-menopausal phase. At the time of menopause serum pituitary gonadotrophins are high and estrogen are low^{3,4}. Largest health threat to women aged over 50 is cardiovascular disease⁵. The risk of atherosclerosis is 3-4 times greater in post

menopausal women⁶. Most common symptom in menopause is hot flushes⁷ as women age, their cumulative risk of hypothyroidism increase. Frequently symptoms are ignored or mis attributed to other causes, making the diagnosis difficult. Menopause has a direct impact on the activity of thyroid gland.⁸

Materials and Methods

2 study groups were selected -40 premenopausal women in the age group 2 and 40 post menopausal women. Subjects with known thyroid disease and subjects having diabetes, hypertension and heart disease were excluded from study. Study was conducted in 40 cases each of premenopausal and 40 post-menopausal women attending medicine

OPD with prior informed consent. Screening of all subjects for the study was done using proforma. Blood samples were collected from subject by venous puncture method using disposable syringes and needles. 8 ml blood were collected from anti cubital vein under aseptic precautions and transferred to bottles. S.TSH measured using an automated chemiluminescence analyzer.

S.Albumin and S. Total calcium estimated. Then corrected calcium level was found out using formula

$$\text{Corrected calcium} = \text{s.calcium} + 0.8 (4 - \text{S.Albumin})$$

Statistical Analysis

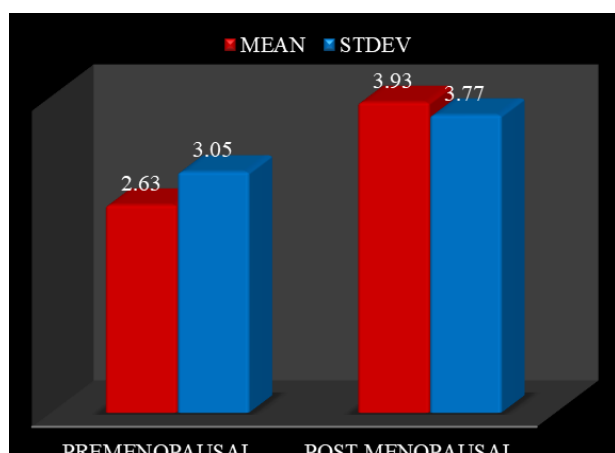
This study is designed as a cross sectional observational study and statistical analysis has been done to determine the difference between two groups. The results are summarized in tables and figures. Data was analysed using statistical package for social sciences (SPSS). Results were expressed as mean ± SD. Mean difference between the groups were analysed using student t test. P value of < 0.05 will be taken as the level of significance

Observation and Results

Table 1: Comparison of S.TSH in pre and post menopausal women

	Pre	post
Mean	2.63	3.93
Sd	3.05	3.77

P value < 0.05



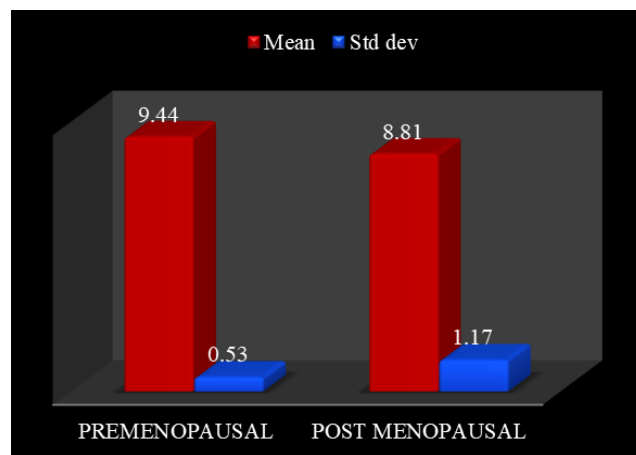
Since p value < 0.05 it is significant . There is considerable difference between TSH levels of pre and post-menopausal women

Table 2: Comparison of S.Calcium in premenopausal & post-menopausal women

	Pre	post
Mean	9.44	8.81
Sd	0.53	1.17

P value =0.01

Since p value < 0.05 it is highly significant.



There is considerable difference between calcium levels of pre and post-menopausal women.

Discussion

The mean value of TSH in pre and post-menopausal women shows considerable difference in two groups since p value < 0.05. SerumTSH levels were significantly lower in premenopausal women^{9,10,11,12} and proves menopause has a direct impact on the activity of thyroid gland. This may be attributed to imbalance of estrogen and progesterone levels in menopause producing effect on thyroid hormones

The mean value of s.calcium between premenopausal and post-menopausal group shows considerable difference in two groups since p value < 0.05. This may be attributed to estrogen deficiency¹³

Conclusion

S.TSH levels were significantly higher in post-menopausal women when compared to premenopausal women

S.Calcium levels were significantly lower in post-menopausal women. This study showed a hypothyroid tendency for the post-menopausal women

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