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A Study on Pattern of Change in Serum Biochemical Profiles among Pre-Menopausal and Post-Menopausal Women

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Abstract

Aim: To study pattern of change in serum biochemical profiles among Pre-menopausal and post-menopausal women **Method:** Present study was carried out at Rajindra Hospital Patiala, Punjab. A total of 100 pre-menopausal and 100 post-menopausal women were participated in the study. Serum calcium and phosphorus level concentration was measured by automated analyzer **Results:** Serum calcium level was significantly lower in Post-Menopausal women than in Pre-Menopausal women (p-value < 0.0001). Serum Phosphorus level was significantly higher in Post-Menopausal women as compared to that in Pre-Menopausal women (p-value < 0.0001). **Conclusion:** In Post-Menopausal women, there is a drop in serum calcium level and serum phosphorus level significantly raised as compared to Pre-Menopausal women.

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Key Words: Menopause, Serum Calcium, Serum Phosphorus, Osteoporosis

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Introduction

Menopause is defined as cessation of menstrual cycle resulting in permanent amenorrhea. It occurs between 40-61 years of age and usually begins with irregularity in menstrual cycle which may extend up to one year till permanent menstrual cessation (Padubidri & Daftary, 2008). During 10-15 years before menopause the shortening of follicular phase of the cycle starts. Thus inappropriate follicular development leads to insufficient estrogen production in menstrual cycle and a very little estrogen left to stimulate endometrium resulting in amenorrhea. It has positive correlation with genetic predisposition and smoking which induces premature menopause (Prabha et al., 2015). As there is an imbalance between bone formation and bone resorption, there occurs a rapid bone loss with the onset of menopause which results in osteoporosis (Ralston & Mclnnes, 2014). According to WHO, Osteoporosis is defined as degenerative bone disease characterized by low bone mineral density leading to enhanced bone fragility and a consequent increase in fracture risk. Osteoporosis is a late complication of menopause. The relation between osteoporosis and the menopause was first noted by Albright et al (1941) when they described 42 cases of spinal osteoporosis. Women lose bone density faster than men after the age of 45 years. This decline in bone loss is statistically related to menopause. Onset of menopause also involves imbalance between different hormonal & biochemical factors (Gupta, 1996). A hormonal factor like estrogen is responsible for calcium