Hormonal changes and bone mineral in post-menopausal Africa women

Clement Nosa Ekhator
Benson Idahosa University, Nigeria

The event- menopause marks the transition from the fertile years to a life phase characterized by a relative hormonal rest and stability, which shows a certain similarity with the life period preceding the first menstruation. This study assessed hormonal profile: follicle stimulating hormones, luteinizing hormones, progesterone, estrogen, testosterone and prolactin, thyroid stimulating hormone, triiodothyronine, thyroxin and serum calcium/phosphate levels in various parities of post-menopausal women. The study was a prospective cross-sectional study of post-menopausal volunteers attending clinics at Saint Philomena Catholic Hospital in Benin City, Nigeria. Ethical clearance and informed consent were obtained and a total of 320 subjects were involved in the study. The experimental subjects were within 49 years to 69 years of age and grouped into Groups I – VII with 40 subjects in each group. Group I – Nulliparous, Group II – Para 1, Group III – Para 2, Group IV – Para 3, Group V – Para 4, Group VI - Para 5, Group VII- Para 6 and 40 Non-Gravid subjects of reproductive age of 25 years to 40 years as the control. Data and blood samples were obtained from those who gave consent and samples were assayed using standard method. The results were expressed as mean ± S.D and using bar chart P value less than 0.05 was considered significant. Comparatively, post-menopausal women that were nulliparous, para 1 and para 3 had similar height ($p>0.05$), weight ($p>0.05$) and BMI ($p>0.05$) values with the pre-menopausal women except in the age where there was significant difference ($p<0.05$). FSH, LH and Prolactin were significantly higher ($p<0.05$) in post-menopausal groups than in pre-menopausal control; FSH (28.17±4.61 mlu/ml vs 47.54±6.69 mlu/ml), LH (18.39±7.79 mlu/ml vs 32.98±8.38 mlu/ml and prolactin (6.37±2.18 ng/ml vs 11.83±4.68 ng/ml). On the other hand, progesterone and estrogen were significantly higher ($p<0.05$) in pre-menopausal women than in post-menopausal women; progesterone (7.21±1.09 ng/ml vs. 2.34±0.14 ng/ml) and estrogen (213.43±16.73 pg/ml vs. 118.50±9.09 pg/ml). Calcium was significantly decreased ($p<0.05$) in post-menopausal women than in pre-menopausal women (8.20±0.41 mg/dl vs 11.07±1.53 mg/dl). On the other hand, phosphate was significantly higher ($p<0.05$) in post-menopausal women than in the pre-menopausal women (3.71±0.71 mg/dl vs 2.39±0.45 mg/dl). This study observed that pregnancy hormones during the reproductive life protect against the risk of osteoporosis in post-menopausal women. Calcium level was higher in post-menopausal women in Para 1 and Para 2 groups than in those in Para 3 to Para 6 groups. Phosphate was higher in Para 3 to Para 6 groups, but the fall was not to the level in the nulliparous. Post-menopausal women in nulliparous group had a non-significant lower TSH level than the parous groups (2.02±0.15 mlu/ml vs. 2.04±0.40 mlu/ml; $p>0.05$) and same was observed with T4 level (6.02±0.10 ng/ml vs. 6.08±0.65 ng/ml; $p>0.05$) but a non-significant higher T3 level in nulliparous than in the parous groups (1.05±0.16 ng/ml vs. 1.02±0.15 ng/ml; $p>0.05$). The levels of serum calcium, phosphate, reproductive hormones and thyroid hormones in various parties may be due to the declining effect of estrogen in post-menopause. Therefore exposure to pregnancy hormones during reproductive life protects against the risk of osteoporosis in post-menopausal women.

Biography

C.N. Ekhator MD, MPH, Ph.D is a senior lecturer in Human Physiology department, College of Medicine Ambrose Alli University. Research fellow and physician at St. Philomena Catholic Hospital for preventive and treatment of chronic disease. He is an endocrinologist, reproductive health and public health expert. He has engaged in over 24 research projects, the latest being hormonal changes and bone mineral in post-menopausal women. His research areas include endocrinology, reproduction, public health and medicine. As a university lecturer for fourteen years and counting, he lectures and mentor students in the faculty of basic medical sciences at undergraduate and postgraduate levels. He is a member of the university senate involve in the management of the institution. As a physician he provides consultation and counseling to patients and their families, collaborates with other medical and healthcare professionals, delivery of babies and provides prenatal and postnatal care for women, provide emergency care.

clemo4real@yahoo.co.uk

Received Date: October 4, 2023; **Accepted Date:** October 6, 2023; **Published Date:** December 26, 2023