

HORMONES AND ENDOCRINE DISRUPTORS IN TRIPLE NEGATIVE, HER2+ AND LUMINAL BREAST CANCER SUBTYPES IN NIGERIAN WOMEN

O. Ajayi², M. Charles-Davies¹, J. Anetor¹, A. Ademola³

¹ Department of Chemical Pathology, University of Ibadan, Ibadan

² Formerly; Reproductive Endocrinology Unit, Department of Chemical Pathology, University of Ibadan, Ibadan. Presently; Department of Biochemistry, Edo University Iyamho, Edo State

³ Surgical Oncology Division, Department of Surgery, University College Hospital, Ibadan

BACKGROUND-AIM

Breast cancer is a heterogenous disease of about four subtypes with distinct clinic-pathological and molecular features. Information on the serum levels of reproductive and thyroid hormones in the breast cancer subtypes is sparse. This study is aimed at determining the concentration of reproductive and thyroid hormones to the pathogenesis of luminal, HER2+ and triple negative breast cancer subtypes.

METHODS

This study comprised of seventy-nine newly diagnosed women with breast cancer, who were not on treatment. They were recruited at the Surgical Oncology Clinic, Department of Surgery, University College Hospital, Ibadan. The participants were age and menstrual phase matched. Anthropometric indices, were determined. 10 millilitres of venous blood was obtained for the determination of serum progesterone, oestradiol (E2), luteinizing hormone, follicle stimulating hormone (FSH), free triiodothyronine (FT3), free thyroxine (FT4) and thyroid stimulating hormone (TSH) by enzyme immune assay (EIA). Immunohistochemistry was done on the breast tissue biopsies for the determination of oestrogen receptor (ER), progesterone receptor (PR) and human epidermal receptor 2 (HER2). Data analysed by Students's t-test and multiple regression were considered statistically significant at $p < 0.05$.

RESULTS

FSH was significantly higher in women with HER2= breast cancer compared with women with triple negative breast cancer. LH and FSH were significantly higher in women with luminal breast cancer compared with women with triple negative breast cancer. E2 and progesterone were significantly higher in premenopausal women with HER 2+ breast cancer compared with premenopausal women with triple negative breast cancer. BMI was significantly higher in postmenopausal women with HER2+ breast cancer compared with postmenopausal women with triple negative breast cancer.

CONCLUSIONS

Sex steroid hormones and gonadotropins could be the basis of the high rate of cell proliferation that marked HER2+ breast cancer subtype