***Associations between body mass index and hormonal receptor, Her2neu receptor as well as other clinical characteristics of breast cancer***

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**abstract**

**Background**

Obesity is a growing problem in the world. Correlations have been found between increasing body mass index and breast cancer. Breast cancer have multiple predictive and prognostic factor like hormonal receptors,human epidermal growth factor 2 receptor, stage of the disease and grade. Obesity may be differentially related to the risk of different subtypes given the various potential mechanisms underlying its association with breast cancer.

**Aim of study and methods**

The study aims to analyze the association between BMI at time of diagnosis, breast cancer histopathologic features estrogen and progesterone receptor and Her2nueexpression, tumor size axillary nodes involvement. metastasis and nuclear grade.

A cross sectional study was conducted involving 256 patients with breast cancer Oncology teaching hospital based breast cancer patients had been interviewed and data collected regarding weight & height, ER, PR status, HER2nue expression, stage of the disease, grade of tumor at time of diagnosis, and categorize the patients to pre and postmenopausal state and then subdivided according to BMI (normal, overweight, obese) and compare between three group.

**Results**

Overweight/obese showed significant statistical effect with ER/PR positive P value ***= 0.026,*** ***0.007*** respectively, larger tumor size P value ***=0.035,*** and more lymph node involvement P value ***=0.031*** in postmenopausal women, while premenopausal patients did not show significant statistical effect regarding above variables.

BMI difference did not show a significant statistical effect on Her2nue, metastasis at diagnosis, tumor grade in both pre and postmenopausal patients.

**Conclusion**

BMI difference affect postmenopausal breast cancer patients rather than premenopause as overweight/obese patients presented with more ER/PR positive, larger tumor size and more lymph node involvement.