

## ABSTRACT

**Introduction:** Breast carcinoma is one of the leading causes of mortality among women in western countries. Incidence of breast cancer has been on the rise in developing countries and it is largely attributed to numerous risk factors that is becoming increasingly predominant in developing countries as well. This study attempts to correlate the different histological types of breast carcinomas with immunohistochemistry, to be specific; response towards ER, PR & Her2/neu.

**Materials & Method:** 56 cases of breast carcinomas were identified, consent was obtained from patients or next of kin and further analysis of these cases was conducted. Detailed description regarding age, tumour size, site, lymph nodes affected, modified bloom richardson grading, TNM staging, type of carcinoma, perineural invasion, skin and nipple involvement, lymphatic embolism, type of margins scoring of ER, PR & Her2/neu, molecular subtyping and the Nottingham prognostic index was included in this study.

**Results:** Majority of patients were in the above 50 years age group ( 67.8%). The youngest patient was 35 years old and the oldest patient was 78 years old. Most common location of tumour encountered in our study was upper outer quadrant. Of all the various types of breast carcinomas encountered in this study, Infiltrating ductal carcinoma constituted 69.6% of cases. The most common TNM stage seen in this study was T2N0Mx. Grade III of the

Modified bloom Richardson score accounted for 51.8% of all cases. Lymph node involvement was seen in 24.4% of all cases. ER positivity was noted in 51.8% cases, PR positivity in 48.2% cases, combined ER+PR+ was seen in 39.3% cases. HER2/neu positivity was seen in 57.1% cases. Classification into molecular subtypes showed that HER2 enriched category was seen in 66.1% cases and Basal type was seen in 25% of cases. 35.7% cases were categorized into the Moderate Prognostic Group II. Statistical correlation showed a strong positive correlation between ER, PR , HER2/neu and the different histological grades of tumour. Strong correlation was noted with Nottingham prognostic Index and the grade of the tumour.

**Discussion:** This study mainly looked at the histology of different tumours and compared it to immunohistochemical profile. The main inferences we can make from this study is that it fits with most of the studies done previously, as in the most common type of breast carcinomas as well as age of presentation have all been proven to be consistent with other studies. The immunohistochemical profiling of these cases gives us a slightly higher percentage of cases showing positivity for HER2/neu, this is mostly attributed to the Indian context where these values can be expected. ER & PR values are comparatively similar to the ones obtained in previous studies.

**Conclusion:** Cases of breast carcinoma have been steadily increasing in developing countries and declining in developed countries, mostly attributed to improved screening methods. The future in diagnosis of breast carcinomas

has a lot of potential. We have only just begun to understand the immense potential in the newer methods of using genetic methods as well as revolutionary molecular methods that have paved the way for easier diagnosis as well as treatment. This study has reinforced the use of immunohistochemistry and molecular subtyping in diagnosis of breast carcinoma.