

## Prevalence of Molecular Subtypes of Breast Cancer in a University Hospital of Nepal

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### ABSTRACT

#### Introduction

Breast cancer is the second most common malignancy in Nepalese women. It represents a group of heterogenous disease with diverse biologic, clinical and molecular characteristics requiring personalized treatment. Based on Immunohistochemical markers, breast cancer is classified into distinct molecular subtypes. The aim of the study was to analyze the incidence of molecular subtypes of all breast cancer patients treated at University Hospital of Nepal in the period over 3 years.

#### Methods

A retrospective observational study was carried out in Breast Unit of Tribhuvan University Teaching Hospital, Kathmandu. Electronic medical records of all breast cancer patients treated between January 2017 to December 2019 were retrieved from the hospital database. Patient's characteristic, histological features and molecular subtypes were collected and analyzed.

#### Results

A total of 156 surgically treated breast carcinoma patients were studied. The median age of study population was 55 years (range 28–82years). Among these, 69 (44%) were of  $\leq 45$  years and 87 (56%) were over 45 years. The mean tumor size was 29 mm (range 50-140 mm). The most common histology was invasive ductal carcinoma (93.5%). Luminal type A was positive in 68 (43%) patients while luminal type B was present in 12 (7.6%) patients. Triple negative subtype was observed in 50 (32%) patients while HER2 rich subtype was seen in 25(16%). Incidence of Triple negative subtype was highest in patients less than 45 years (42%). Luminal A subtype was correlated with low tumor grade and less positive lymph nodes metastasis.

#### Conclusion

The most common molecular subtype of breast cancer in Nepal is Luminal A having favorable features. The incidence of triple negative breast cancer is higher in Nepal, having an aggressive and clinically distinct subtype and is important for personalized treatment plan.

**Keywords:** *Breast cancer, immunohistochemistry, molecular subtypes, Nepal*