ABSTRACT

INTRODUCTION

Seldom has a disease evoked more interest and dreadful fear in the common man like it has for cancer. Breast cancer amongst all cancers, continue to evoke such responses and even more research, especially since the treatment involves surgery which leaves physical and emotional scars in its victims.

Breast carcinoma is the commonest cancer in women. It is the leading cause of death in women, with more than one million cases occurring worldwide annually. Breast cancer represents an important public health issue, having a high occurrence worldwide, with an obvious increasing tendency.

The Edwin Smith Surgical Papyrus is having the first reference to breast cancer. This surgical text, described in hieratic script, is the incomplete copy of an original record that dates back to the pyramid age of Egypt (3000-2500BC).

The incidence of cancer has been on rise worldwide. Breast cancer incidence accounts for 16% of all breast cancers, as per the WHO cancer
control and prevention program. It is calculated that 519 women died owing to breast malignancy in 2004. Inspite of the fact, breast cancer is thought to be a disease of the developed world, majority of breast cancer mortality (69%), is in developing countries. Hence breast cancer has emerged to be one of the leading cancer killers amongst women worldwide.

Over the last few decades there have been better advances in breast cancer. Early detection and skill full treatment has lead to a significant decline in breast cancer deaths. It has also made improved outcome for women living with the disease. Breast cancer is no longer seen as single disease but rather a multifaceted disease consisting of diverse biological subtypes with distinct natural history. Breast cancer presents as a varied spectrum of clinical, pathological and molecular features with diverse prognostic and therapeutic implications.

Estrogen is the steroid hormone, responsible for development and maturation of primary and secondary sexual characteristics in females. Estrogen has an important role in pathogenesis and development of breast cancer.

Estrogen receptor is an intracellular protein molecule. They are targets for estrogen action. Estrogen receptor normally resides in cell nucleus, along with DNA molecules. Estrogen receptor alpha gene polymorphism leads to alteration in estrogen receptor function in breast cancer.

AIMS AND OBJECTIVES
To study the stromal expression of CD10 in breast carcinoma

To study relationship with certain prognostic factors like,

1. Age, 2. Nottingham’s grade and 3. ER, PR, HER2neu

To study the role of stroma in the pathogenesis of breast cancer

To study the role of CD10 in triple negative cases

MATERIALS AND METHODS

A total of 75 cases of breast cancer were included in the study. Representative sections were taken and hematoxylin and eosin staining was done. Immunohistochemistry was performed with ER, PR, Her2neu and CD10. Stromal expression of CD10 (>10% stromal positivity was considered positive) in invasive breast carcinoma was noted and was statistically analyzed with different known prognostic markers of breast carcinoma.

RESULTS

Stromal expression of CD10 was found to be significantly associated with increasing tumor grade ($P = <0.0001$), ER negativity ($P = <0.0001$), PR negativity ($P = <0.0001$), Her2neu positivity ($P = <0.0001$) and with triple negative cases. No correlation was found between CD10 overexpression and age of the patient.

CONCLUSION
The stromal expression of CD10 has significant correlation with higher histological grade (Grade 3), ER negativity, PR negativity and HER2neu positivity and triple negativity.

- There is no correlation between CD10 expression and age of the patient.
- The intensity of CD10 positivity also increased with increasing histological grade, hormonal receptor negativity, HER2neu positivity and triple negative cases.
- There is wide expression of CD10 in desmoplastic stroma of breast carcinoma and negative immunoreactivity in stromal cells of normal breast.
- This study highlights the role of stromal CD10 expression in predicting tumor response and prognosis and therefore CD10 could be included as a routine marker along with other markers for invasive carcinoma breast before giving chemotherapy.

**KEY WORDS**

CD10 positivity, stromal marker, poor prognosis.