

INFILTRATING/INVASIVE DUCTAL CARCINOMA WITH HER2 ENRICHED BREAST
CANCER – CASE REPORTArchana Lahoti^{1*} and Dr. Pankaj K. Barman²¹Pharm D Student, PES College of Pharmacy, Bangalore, India. 560050.²Senior Consultant, Medical Oncologist at Nepal Mediciti Hospital, Kathmandu, Nepal 44600.***Corresponding Author: Archana Lahoti**

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ABSTRACT

Background: Invasive/Infiltrating Ductal Carcinoma (IDC) is a cancer that grows in the milk ducts and invades the fibrous/fatty tissues of the breast. HER2 enriched cancer is cancer with Hormone Receptors(HR) negative and Human Epidermal Growth Factor Receptor 2 (HER2) positive. HER2 is thought to occur in 20 to 30 percent of breast cancer tumours. **Case presentation:** A 55 year old post menopausal female presented with complaints of lump in the right breast since 2 weeks. No family history of hereditary breast ovary cancer syndrome (HBOC) were found. On evaluation with Ultrasound of the breast and Mammogram, 4 cm mass was found in the right breast. On Fine needle aspiration cytology (FNAC), it was confirmed to be IDC. She underwent Modified radical mastectomy (MRM) and histopathological examination confirmed it to be a pathological state 2A. HR was negative and HER2 was positive. **Conclusion:** Managing HER2+ is a challenging treatment because of its inherent aggressive nature. It is important to investigate for any metastatic disease at the time of onset is important. Appropriate anti HER2 therapies along with chemotherapy in both adjuvant and metastatic settings markedly increases the overall survival.

KEYWORDS: IDC, HER2, postmenopausal, HBOC, mastectomy.**INTRODUCTION**

Cancer cells can grow into surrounding tissues. Invasive Ductal Carcinoma is the breast cancer that has spread from the milk ducts, which are the thin tubes that carry milk from the lobules of the breast to the nipple into the breast tissue or nearby lymph nodes.^[1] 81% of the breast cancer are invasive that is the cancer starts in the duct and spreads to the surrounding breast tissues.^[2] HER2 is a protein which when over expressed indicates breast cancer and accounts for 4% of cases where tumor grows faster with a worse prognosis but are often treated successfully with targeted therapies.^[3] Here, we present a case of a female patient with IDC along with HER2+ which was successfully treated.

CASE PRESENTATION

A 55 year old post menopausal patient with complaints of lump in the right breast in the early week of the month of August 2018, presented and was previously diagnosed in the end of July 2018, by Ultrasound which revealed 3.5 cm mass in the right breast, however malignant lesion could not be ruled out and FNAC, a Biopsy test which showed compatibility with Ductal Carcinoma of the Breast. She had no social and family history as such. Her vitals were noted and were perfectly stable. Immunohistochemistry (ICH) test and Fluorescence in situ hybridization (FISH) test confirmed it to be HR negative and HER2 positive (Score 3). Positron Emission

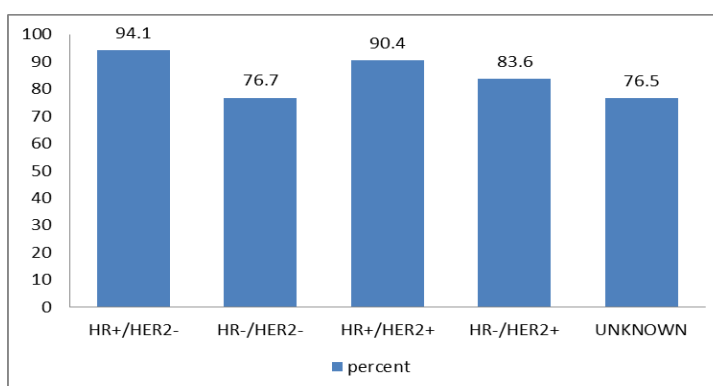
Tomography (PET CT SCAN) suggested fluorodeoxyglucose (FDG) avid mass in the outer quadrant in the right breast, no evidence of distant metastatic disease in the rest of the body. Mammasonography was conducted further which indicated RIGHT BIRADS-5 and LEFT BIRADS-1 with irregular mass lesion of 4 cm with indistinct margin and few pleomorphic microcalcifications were noted at the site of palpable lump in the right breast laterally. A cyst was noted in the right lower outer quadrant (0.4 x 0.3 x 0.2 cm). A 2.5 x 0.8 cm right axillary lymphnode with an eccentrically thickened cortex was also noted, possibly metastasis (07/08/18). Pathological state was found to be T2N0Mx. Echocardiogram (ECHO) was done and no regional wall motion abnormality and significant pulmonary hypertension were found.

After the relevant investigations and diagnosis, the patient underwent Modified Radical Mastectomy + Sentinel Lymph Node Biopsy (SLNB) on the admitted day that is 10/08/18 and Chemo Port was inserted. On histopathological examination (HPE), two non involved Sentinel nodes were found. Patient was put on Adjuvant Chemotherapy with the following plan : IV 3 weekly Epirubicin+ Cyclophosphamide (EC) of 4 cycles followed by weekly Paclitaxel + Trastuzumab of 12 cycles followed by 3 weekly Trastuzumab of 13 cycle which was initiated from 28/8/18 and completed on

31/09/19. The whole treatment plan was carefully monitored through out the course. Chemotherapy induced vomiting and darkening of skin was the major complaints from the patient which was taken care of through Antiemetics. 2D ECHO was regularly done in every 3 months. Full routine body check up including

important parameters like complete blood count , Renal and liver function tests, Left ventricular ejection fraction (LVEF) were done which was perfectly normal. She remains in follow up and has no more signs of recurrence till date.

Birads classification for breast imaging reporting	
0-	Needs supplementary / additional imaging
1-	Negative - no findings
2-	Benign findings
3-	probably benign- short term follow up suggested
4-	A- low suspicious of malignancy but needs intervention
4-	B- intermediate suspicious of malignancy
4-	C- high suspicious of malignancy
5-	highly suggestive of malignancy
6-	known case of malignancy post treatment.



The above chart shows 5 year relative survival percent, female breast cases by cancer subtypes according to SEER 2010-2016.

Summary of the case

1	Patient (gender, age)	Female, 55 year old
2	Final diagnosis	Invasive ductal carcinoma with HER2 enriched
3	Symptoms	Lump in the right breast
4	Medications	Adjuvant chemotherapy with monoclonal antibody
5	Clinical procedure	Modified radical mastectomy, chemo port insertion
6	Speciality	Oncology

DISCUSSION

IDC accounts for 81% and HER2 enriched cancer makes it a challenging case to treat it successfully when the case have reached Stage 2 and Grade 3.^[3] About 1 in 8 women in USA, develop Invasive Breast Cancer over the course of her lifetime.^{[4][5]} Stage at diagnosis is one of the most important factors affecting prognosis. Five year relative survival rate for breast cancer are 99%, 86%, 27% for localized, regional and patients diagnosed with metastatic disease respectively.^[2] Also the survival rate for HR- AND HER2+ is 83%.^[2] In 2020, an estimated 2,76,480 new cases of Invasive Breast Cancer were expected to be diagnosed in the women in the United States Of America.^[4] Normally diagnostic procedures for such IDC are Mammography, Ultrasound, Biopsies. HER2 receptor status is recommended as an additional test depending on the previous investigations. These receptors receive signals that stimulate the cells to grow

and multiply. Such HER2 positive cancers had worst prognosis in the initial time but now with the newer targeted therapies such as monoclonal antibodies, treatment has been successful.^[6] A 2014 study of more than 4,000 women showed that Trastuzumab significantly reduced recurrence and improved survival when added to the chemotherapy in early stage.^[7] The 10 year survival rate increased from 75.2 % with chemotherapy alone to 84% with the addition of Trastuzumab.^[7]

CONCLUSION

IDC with HER2 enriched is a complex case where proper drug therapeutic monitoring, correct diagnosis, complete patient medical adherence and the right treatment for both IDC and HER2 status should be taken into consideration to achieve a tremendous and successful outcome.

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LIST OF ABBREVIATIONS

IDC- INVASIVE DUCTAL CARCINOMA
 HER2 – HUMAN EPIDERMAL GROWTH FACTOR RECEPTOR 2
 HR- HORMONE RECEPTORS
 HBOC- HEREDITARY BREAST OVARY CANCER SYNDROME
 USG- ULTRASOUND OF THE BREAST
 FNAC- FINE NEEDLE ASPIRATION CYTOLOGY
 FISH - FLUORESCENCE IN SITU HYBRIDISATION
 PET CT SCAN-
 POSITRON EMISSION TOMOGRAPHY.
 FDG - FLUORODEOXYGLUCOSE
 ECHO- ECHOCARDIOGRAPHY
 HPE - HISTOPATHOLOGY
 CBC - COMPLETE BLOOD COUNT
 LVEF- LEFT VENTRICULAR EJECTION FRACTION
 EC - EPIRUBICIN AND CYCLOPHOSPHAMIDE.
 BIRADS - BREAST IMAGING-
 REPORTING AND DATA SYSTEM.

Declaration of Conflicting interests: The authors declares that there is no conflict of interest regarding the publication of this article.

Consent for publication: Written informed consent was given by the patient.

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