Analysis of use of Neo-adjuvant Chemotherapy with Trastuzumab for patients with HER-2 Positive Breast Cancer

Author names: Dr Ik Shin Chin, Canada Cherry, Dr Racha Kussaibati
Institution: Birmingham Heartlands Hospital, Heart of England NHS Foundation Trust

Introduction:
Use of anti-HER-2 therapy with chemotherapy in the neoadjuvant setting improves the pathological complete response (pCR) rate. Patients who achieve pCR had better event-free survival and overall survival. The proportion of patients achieving pCR with the addition of neoadjuvant Trastuzumab is 22.6 - 65.2%. Trastuzumab is associated with cardiotoxicity and the strongest risk factors include anthracycline use and more than 50 years of age. Cardiac functional assessments should be performed at baseline and subsequently every three months to screen for cardiac dysfunction.

Aims:
The study aims to determine the pCR rate in HER2-positive breast cancer patients who have received neoadjuvant chemotherapy and Trastuzumab as well as identifying their tumour characteristics and percentage of patients who developed cardio-toxicity in Birmingham Heartlands Hospital. Our secondary aims are to establish the proportion of patients who had breast conserving surgery and those who developed recurrence or metastases.

Method:
Data was collected retrospectively to include cases from January 2011 to 2016 using the hospital electronic system and chemotherapy records.

Results:
18 patients were identified who had HER-2 positive invasive ductal carcinoma and received neoadjuvant Fluorouracil, Epirubicin and Cyclophosphamide followed by Docetaxel and Trastuzumab. 10(56%) had a complete pathological response. Among those who achieved pCR, 50% were hormonal receptor negative and 70% had grade 3 tumours and positive lymph nodes. One patient (5.6%) had a drop in their left LVEF greater than 10% and had her Trastuzumab was suspended temporarily before re-challenging later on. 44% of patients had breast conserving surgery.

Conclusion:
Our data showed that the rate of pCR achieved in our unit is comparable with other studies. Patients with more aggressive tumours appeared to achieve a better response. Close monitoring of patient’s cardiac function while on Trastuzumab is important as Trastuzumab-related cardiotoxicity is potentially reversible in many patients.