

Abstract: Pathological response to neoadjuvant chemotherapy for chemotherapy for breast cancer at a single tertiary centre with no access to trastuzumab

Introduction

Neoadjuvant chemotherapy (NACT) has firmly solidified its status as the gold standard in the treatment of breast cancer for eligible patients. While prevailing guidelines advocate for a combined approach involving chemotherapy and Trastuzumab for individuals with HER2-positive breast cancer, Groote Schuur Hospital faces constraints in administering Trastuzumab due to cost-related considerations. This study delves into the impact of neoadjuvant chemotherapy on breast cancer patients, specifically focusing on the response of local patients who are HER2-positive and do not receive Trastuzumab.

Methods

A retrospective audit was conducted on all patients who underwent NACT followed by surgical intervention, to assess response, between 1 January 2017 and 31 December 2018 within the Cape Town, Metro West surgical platform. Comprehensive data were gathered about tumour dimensions, axillary staging, tumour subtype, and treatment response.

Results

Data from 160 tumours were included. Predominantly, the cohort comprised women (97.5%, n=156), with a smaller representation of men (2.5%, n=4). In terms of surgical approach, a majority of patients underwent mastectomy (88%, n=141), while a minority opted for breast-conserving surgery (12%, n=19). The most common histology was infiltrating ductal carcinoma (94%, n=151), followed by infiltrating lobular carcinoma (3.8%, n=6). The analysis of NACT responses revealed a spectrum of outcomes: overall, 21% of patients achieved a pathological complete response (pCR), 31% demonstrated a partial response, 31% exhibited stable disease, and 17% experienced disease progression. Notably, triple-negative breast cancer displayed the most favourable response, with a pCR rate of 32% ($p < 0.005$). In contrast, patients with ER-positive/HER2-negative tumours exhibited the least favourable response, with 2.9% achieving pCR ($p < 0.05$). ER-negative/HER2-positive patients demonstrated a pCR rate of only 6.7% ($p = 0.215$).

Conclusion

Neoadjuvant chemotherapy appears particularly beneficial for patients with triple-negative breast cancer. This study reveals a significantly lower pCR rate in ER-negative/HER2-positive patients, even when compared to studies where Trastuzumab was not administered. For HER2-positive patients, the addition of Trastuzumab is advocated to augment the likelihood of achieving pCR and thereby improving overall survival rates.