Impact of Pharmacist's Intervention on clinical outcomes Improvement in Patients with Breast Cancer

A Thesis

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List of Abbreviations

Abb.	Meaning
FEC	5-Flurouracil, epirubicin, cyclophosphamide
ACS	AMERICAN CANCER SOCIETY
ACCP	American college of clinical pharmacy
ANC	Anisocyte normal count
BC	Breast Cancer
DCIS	Ductal Carcinoma In Situ
ECOG	Eastern cooperation oncology group
EORTC QLQ-C23	European organization for research and treatment of cancer quality of life questionnaire C23
FNAC	Fine needle aspiration and cytology
HRQOL	Health related quality of life
LCIS	Lobular carcinoma in situ
MBC	Metastatic Breast Cancer
NCI	National Cancer Institute

List of Abbreviations

Abb.	Meaning
NCI-CTCAE	National Cancer Institute Common Terminology Criteria For Adverse Events
OPSs	Oncology pharmacist specialists
QOL	Quality of Life
SD	Stable Disease
SD	Standard Deviation
TDM	Therapeutic Drug Monitoring
WBC	White blood cells
WHO	World Health Organization

Abstract

Abstract

Background and Objectives: Breast cancer is the most common cancers among women in Egypt. According to the National Cancer Institute at Cairo University (NCI), 31.5% of their cancer cases are breast cancer. Health Related Quality of Life and reduction of side effects are considered important goals in the treatment of cancer patients. The aim of this study was to assess the impact of clinical pharmacist's intervention on the improvement of clinical outcomes of patient with breast cancer.

Patients and Methods: The study was carried out on a group of 60 breast cancer women who were subjected to a thorough history taking, clinical pharmacist's intervention using patient education and counseling tools, medication therapy management and assessment of treatment related adverse events prior to each cycle and at the end of the treatment. In addition, assessment of quality of life (QOL) was done at the base line and at the end of treatment to evaluate the effect of the pharmacist's interventions.

Results: The current study has shown that the clinical pharmacist interventions were associated with significant reduction in toxicity grades of patients e.g anaemia where the percentage of patients of grade 2 decreased from (17%) to (1.7%), while patients having neutropenia grade 4 decreased from (10%) to (0%), moreover (5%) of patients had grade 4 nausea/vomiting, while after pharmacist intervention became (0%). Regarding patients' quality of life, results showed improvement of mean±SD of most of the QOL scales such as body image from (25.3±20.2) to (61.6±16.8), systematic therapy side effects decreased from (80.8±19.53) to (42.8 ±16.8), breast symptoms decreased from (79.9±18.6) to (49.8±82.4), all with ($p<0.001$).

Conclusion: Most treatments of breast cancer although being beneficial also result in toxicities, primarily anemia, neutropenia, nausea and pain. These side-effects adversely impact the patient QOL and can lead to treatment discontinuation. Clinical pharmacist intervention resulted in beneficial clinical outcomes in patients with breast cancer such as the reduction of treatment related side effects and the improvement of patients QOL.

Key words: Breast cancer - Clinical Pharmacist's Interventions – Toxicity grades- Quality of Life.

Introduction

Introduction

Breast cancer is one of the most common malignancies in females worldwide and is curable in 70 to 80% of female patients with early-stage, non metastatic disease. Advanced breast cancer spread to distant organs is considered incurable using currently available treatments. **(Bray, F. et al, 2018).**
Breast malignancy could be a heterogeneous disease where molecular characteristics include activation of human epidermal factor growth receptor 2 (HER2) encoded by ERBB2, also activation of hormone receptors as estrogen receptor and progesterone receptor and/or BRCA mutations. Treatment strategies differ in keeping with molecular subtype. **(Wong, F. Y. et al, 2018).**
Management of breast malignancy is multidisciplinary, locoregional as surgery and radiation treatment also systemic treatment approaches. Systemic therapies include endocrine therapy for hormone receptor-positive disease, chemotherapy, anti-HER2 therapy for HER2-positive disease, bone stabilizing agents, poly (ADP-ribose) polymerase inhibitors for BRCA mutation carriers and, quite recently, immunotherapy. **(Cardos F. et al, 2017).**

Global challenge in the breast cancer field is to ensure that all women have access to high-quality standard diagnosis through imaging and pathology and therapy like surgery, radiation and systemic therapy, avoid late diagnosis and also provided with adequate supportive and palliative care services **(Ginsburg, O. et al, 2017).**

Absolutely desirable, cancer survivors requires the maintenance of care that could be systematically included in the follow-up sessions, unfortunately survivors are at risk of malignancy recurrence and/or second malignant neoplasm due to cancer therapy, late side effects, and/or co-morbidities arising from therapies like cardiac, pulmonary problems and fatigue, also depression and post-traumatic stress disorder **(Mariotto, A. B. et al, 2017).**

In addition, educational and multidisciplinary support is important to understand the illness process, overcome adversities could be economic or social or familial and serve demands for self-care at all stages, from diagnosis to follow-up in either chronic or disease-free conditions. **(Kohler, B. A. et al , 2015).**

Systematically designed, implemented and evaluated programs are important for all the kinds of populations, through making associations with information about all stages of malignancy starting from early detection, diagnosis, therapy, survival, progression till end of life also decision-making skills and self-management, with consequent improvements in quality of life and the achievement of well-being. **(Torre, L. A et al, 2016).**

Quality of life has become a well-accepted outcome measure for breast cancer patients and an integral part of malignancy management due to the increase of number of breast cancer patients, as each year there is over 1.1 million newly diagnosed females with breast cancer worldwide and 410,000 females die from the disease .On the other hand, improvements in early detection and treatment of breast malignancy have led to longer survival of these patients. **(Grimison P et al 2007).**

Quality of life is one of the main determinants of treatment success in modern oncology. Quality of life related to health considered as an important parameter in clinical cancer trials. It has been shown that quality of life assessment in cancer patients to help improve therapy and may even be one of prognostic factors. **(Quinten C et al, 2009).**