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COMPARISON STUDY: DIFFERENT GRADES OF EMESIS IN DIFFERENT DOSE INTENSITIES OF EPIRUBICIN IN EARLY STAGE BREAST CANCER PATIENTS UNDERGO FEC

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Assalamualaikum

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Concisely, we hope this research may bring a good sight for either pharmacist or assistant pharmacist in our duties to bring a better future towards breast cancer patient. Hereby, we would end this acknowledgement with boundless gratitude to all who involved.

Abstract

Epirubicin has not yet been fully clarified but it is probably related to its ability to bind with DNA. Cells culture studies have shown cell penetration, localisation in the nucleus and inhibition of nucleic acid and mitosis. Epirubicin is indicated for the treatment of breast cancer, gastric cancer, ovarian cancer, small cell lung cancer, lymphoma and superficial bladder cancer. This study which entitled **Different Grades of Emesis in Different Epirubicin Dose Intensities in Early Stage Breast Cancer Patients Undergo FEC (5-FU, Epirubicin and Cyclophosphamide) Chemotherapy Regime,**is mainly aiming in rationalizing the use of Epirubicin regimen in higher dose intensity as it may produce less and well tolerated side effects (emesis) but at the mean time represents highly significant difference in therapeutic outcomes compared to lower dose intensity regimen of epirubicin in combating advanced breast cancer. The study indicates four main objectives which include determination of grades of emesis, assessment of the frequency of patients in different dose intensities of epirubicin, comparison of side effects generated by different dose intensities of epirubicin and lastly, establishment of correlation between increments of epirubicin dose intensity to the level of emesis occurrence. The study was conducted on 90 early stage breast cancer patients in the HTJS Day Care Unit. The data were collected from Patient Monitoring Form starting from January 2007 to December 2009. As from the results obtained, zero grade of emesis shows a none-significant decrement as the dose intensifies from 80mg/m^2, 90mg/m^2 and 100mg/m^2 which the frequencies are ranging from 27%, 23% and 17% respectively. However, for the first grade of emesis clarifies a none-significant increment of frequencies from 30%, 43% and 47% in that order. Meanwhile for the second grade of emesis, the result fluctuates from 27%, 20% and 27%. And last, the third grade of emesis dictates decrement in the frequencies of patients from 17%, 13% and 10% correspondingly. This shows that there is decrement and also increment in the episodes of emesis as the dose of epirubicin is intensified, but the alteration in the episodes of emesis is still not significant to be considered. . In concise, this study suggests that a higher dose of epirubicin can be considered if lower dose of epirubicin is not working. Even if the dose is intensified, the side effects are still well tolerated by most patients but might increase the possibility of having long term side effects like cardiac toxicity if only the regime is practiced for a long term use.

Key words: Epirubicin, emesis, early stage breast cancer, FEC, chemotherapy

1. Introduction

It is well established that anthracycline is one of the most active cytotoxic agents that use to fight against breast cancer. In fact, anthracycline-based regimens (FEC or FAC) have been proven scientifically and practically to be more superior to be compared with non anthracycline-based regimens in term of rate of survival. In the arms of anthracycline-based regimens, it is shown that the anthracyclines doxorubicin and epirubicin have been extensively studied and used in the treatment of breast cancer. Epirubicin at a dose of 50 mg/m^2 per course has similar efficacy to the same dose of doxorubicin but is significantly better tolerated due to less side effects such as cardiac toxicity, emesis, alopecia and nausea. This low toxicity suggests that higher dose of epirubicin may produce optimal clinical outcomes and may significantly increase the rate of survival. As in this study, 3 different epirubicin dose intensities ranging from 80 mg/m^2, 90 mg/m^2 to 100 mg/m^2. The study is conducted based on the different types of epirubicin dose intensities and correlated the findings with the level and pattern of emesis in each particular dosage regimens. As approaching the data collected by hospital, the study identifies the correlation of dosage increment to the pattern of emesis in patients. This study is mainly concentrating in attesting that higher dosage of epirubicin ($100mg/m^2$) may increase therapeutic outcomes but at the mean time, well tolerated by patients in term of side effects; emesis. This study was performed to indentify the relationship between epirubicin dose and frequency of emesis as well as therapeutic outcomes among patients. Conceptually, the study is focusing on the rational use of higher dose intensity of epirubicin in treating the breast cancer. The increment dose intensity might increase the frequency of emesis occurrence or might not. The results taken from this study may indicate the answer to that question. As in that case, the intensification of dose of epirubicin is theoretically proven might present a better therapeutic outcome compared to those of lower doses.[2] This correlation between the intensification of dose of epirubicin with frequency of emesis occurrence may indicate that higher dose intensity of epirubicin can be rationally considered to be used if lower dose of epirubicin is not working. If higher dose inflicts more emesis occurrence, the use of higher dose of epirubicin should not be considered, and it goes the same in the other way round. The study is mainly aiming in rationalizing the use of