



Original article

The Influence of Capox (Xelox) and Folfox on Colorectal Cancer Patients in Tripoli University Hospital, Tripoli, Libya

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Citation: Belgasem F, Aboshala A, Elbaruni S. The Influence of Capox (Xelox) and Folfox on Colorectal Cancer Patients in Tripoli University Hospital, Tripoli, Libya. *Libyan Int J Onc.* 2022;1(1):28-31.

Received: 23-05-2022

Accepted: 14-06-2022

Published: 26-06-2022



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Funding: This research received no external funding.

Conflicts of Interest: The authors declare no conflict of interest.

Abstract

Background/Aims: Colorectal cancer (CRC) is the fourth most common cancer in the world with 1.3 million new cases each year and a 5-year prevalence rate of 3.2 million. The purpose of this study was to evaluate and to provide information about the toxicity and side effects of the two chemotherapies (Capox and Folfox), which used for CRC treatment in Oncology Department in Tripoli University Hospital (TUH), Tripoli, Libya. **Methods:** The study conducted over a period of four-years (2016-2020) and a total of 100 CRC patients who receive chemotherapy (Capox or Folfox). The study follows the effect of the two chemotherapies, as well as CRC progression and recurrence. CT and PET-CT scan were used for screening patients for early-stage CRC and used from time to time to make sure that the cancer has not recurrence after treatments. **Results:** Out of 35 patients used Capox chemotherapy and 35 patients used Folfox chemotherapy 22 and 24 patients had remission. **Conclusion:** Both chemotherapies (Capox and Folfox) had an equal impact on CRC patients. As a result, Capox is a more convenient option for patient's comfort, as well as a better option in terms of cost and also saves time and money.

Keywords: Capox (Xelox), Folfox, Colorectal Cancer, Libya.

Introduction

Colorectal cancer (CRC) is the fourth most common cancer in the world with 1.3 million new cases each year and a 5-year prevalence rate of 3.2 million [1]. Studies shows that colorectal cancer is the second and third most common cancer in women and men, respectively. In 2012, 614,000 women (9.2% of all new cancer cases) and 746,000 men (10.0% of new cancer cases) were diagnosed with colorectal cancer worldwide [2].

In September 2018, World Health Organization have mentioned that the first most common causes of cancer death are lung cancer (1.76 million deaths) and the second most common cause of cancer death is colorectal (862, 000 deaths). The World Health Organization stated again in 2020 that colorectal cancer was the second leading cause of death. (935,000 deaths).

In 2009, Libyans study shows that colorectal carcinoma is the third common cancer leading to death after breast cancer and lung cancer, respectively [3]. Several studies show that metastasis (cancer cells spread to other organs) is the major cause of death in patients with colorectal carcinoma (CRC). The most common sites of metastasis are the liver and the peritoneum [4,5]. Nearly all cases of colorectal cancer start off as a polyp (benign abnormal growths) [1]. Usually, this tumor arising from inner layer of epithelial cells in colon or rectal.

Treatment of colorectal cancer is depending on the stage of the cancer, account the grade of the cancer age and general condition of the patient.

The main treatments for CRC are surgery, chemotherapy, radiotherapy and recently used immunotherapy and targeted therapy. The most common treatment for early-stage colorectal cancer is surgery. Some patients with early-stage disease may also receive chemotherapy or radiotherapy before or after surgery. In many cases, chemotherapy may use either as a standalone treatment or in combination with radiotherapy.

The main treatment for CRC in stage III is chemotherapy (Capox and Folfox). Chemotherapy is based on the inhibition of the division of rapidly growing cells. Chemotherapy can extend life and improve quality of life for those who have had or are living with metastatic CRC. Chemotherapy can also reduce the risk of recurrence (cancer cells returns in

the same place). Before surgery, chemotherapy may help shrink the tumor. The most chemotherapy drugs that given for CRC in our department (oncology) in Tripoli University Hospital (TUH) is Capox or Folfox.

Some study provide that Capox can be considered as a routine first-line treatment option for patients with metastatic colorectal cancer [5]. Capox contain Capcitabine (Xeloda) and oxaliplatin. Folfox contain three types of chemotherapy 5-fluorouracil (5-FU), folinic acid (leucovorin) and oxaliplatin. The distinction between Capox and Folfox is that Folfox contains 5-fluorouracil and folic acid, whereas Capox does not [6,7].

There are a number of risk factors associated with the use of folfox and capox treatments (8). Combination of folinic acid with 5-fluorouracil may enhance the effect of 5-fluorouracil. Therefore, the focus of this study was on colorectal cancer chemotherapy (Folfox and Capox). According to studies, Folfox has a higher incidence of neutropenia than Capox whereas, Capox has a higher incidence of hand-foot syndrome than Folfox [9,10].

Colorectal cancer five-year survival rates have risen in most developed countries in recent years. It is significantly lower in Africa, Asia, European countries, and Central and South America, owing to differences in early diagnosis and access to optimal treatment [11,12].

The purpose of this study is to evaluate and to provide information about the toxicity and side effects of the two chemotherapies (Capox and Folfox), which used for colorectal cancer in Oncology Department in Tripoli University Hospital (TUH), Tripoli, Libya. Approximately 100 colorectal cancer patients were aimed in this study. The study focused on the effect and side effects of the two chemotherapies (Capox and Folfox), in order to determine the best treatment and cure patients.

Methods

This work based in Oncology Department in Tripoli University Hospital (TUH), Tripoli, Libya. The study conducted over a period of four-years (2016-2020) and a total of 100 colorectal cancer patients (Randomized sample) who receive chemotherapy (Capox or Folfox). The study follows the effect and the side effect of the two chemotherapies, as well as colorectal cancer progression and recurrence. CT scans (computed tomography scan) and PET-CT scans (positron emission tomography) (Fujifilm holding, GE healthcare, Philips Healthcare) are two types of imaging tests method used for screening patients for early-stage colorectal cancers and used from time to time to make sure that the cancer has not recurrence after treatments.

A CT scan and x-rays were used to make detailed cross-sectional images of the body. These tests determine whether or not colorectal cancer has spread to nearby lymph nodes or other organs such as the liver and lungs. Positron Emission Tomography is a type of nuclear medicine scan that used a small amount of radioactive material to image body function. PET/CT exams combines images from PET and CT scans to detect and anatomically localize cancer and determine the amount of cancer spread. Magnetic resonance imaging of the body. This imaging test takes detailed pictures of internal organs using a magnetic field and radio frequency pulses.

Chemotherapy drugs can be given intravenously (into a vein) via an injection or a pump or orally as a pill. Each drug works against a specific cancer and is delivered in specific doses and schedules. In administration of chemotherapy there is multiple routes, one of the routes is infusion (patient inserted with port-a-cath). Port-a-cath is a device usually placed under the skin in the right side of the chest and attached to a catheter that is threaded in to a large vein above the right side of the heart called the superior vena cava. Port-a-cath were used to deliver intravenous fluids like chemotherapy (Xelox, Follfox, Oxaliplatin and Eloxatin), fluids and blood transfusion to the patient. An oral chemotherapy drug such as Capecitabine and Leucovorine were taken as tablets.

Folfox chemotherapy taken as a cycle of treatment in each lasting 2 weeks depending on requirements and taken up to 12 cycles. Capox is a chemotherapy taken as a cycle of treatment in each 3 weeks and one-week rest up to 8 cycles.

Results

Selected Samples

A total of 65 CRC patients who receive chemotherapy Folfox and 35 CRC patients who receive chemotherapy Capox were scanned to study the effect of these two chemotherapies (Capox and Folfox) on CRC in order to determine the best treatment to cure CRC patients (Fig 1). The total of 100 CRC patients were conducted in an over of four-years period (2016-2020) and the patients with CRC ages ranged from 40 to 70 years old on average.

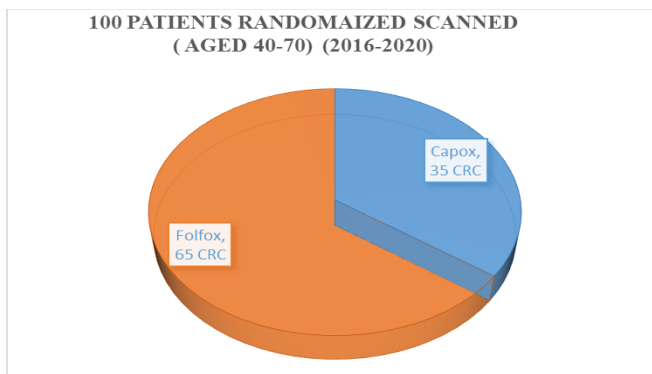


Figure 1. The 65 colorectal cancer patients who receive chemotherapy Folfox and 35 colorectal cancer patients who receive chemotherapy Capox.

The effect of Capox on colorectal cancer patients

Out of 35 colorectal cancer patients who received Capox chemotherapy, 22 patients were remission, 3 were metastasized, 2 were recurrence, 7 were missed follow up and 1 changed line (Figure 2).

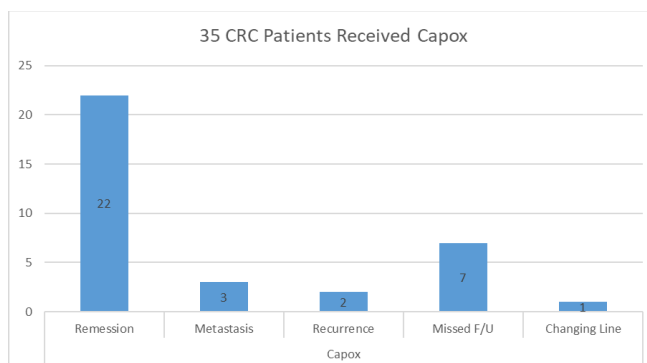


Figure 2. The effect of Capox chemotherapy on 35 colorectal cancer patients.

The Effect of Folfox on Colorectal Cancer Patients

Out of 100 colorectal cancer patients who receive folfox chemotherapy, 35 patients were selected compared to the 35 CRC patients who received Capox chemotherapy. Out of 35 CRC patients who receive folfox chemotherapy, 24 patients were remission, 4 were metastasized, 5 were remission then replaced after two years, one patient was remission then replaced after 3 years and one patient was progressive with other disease.

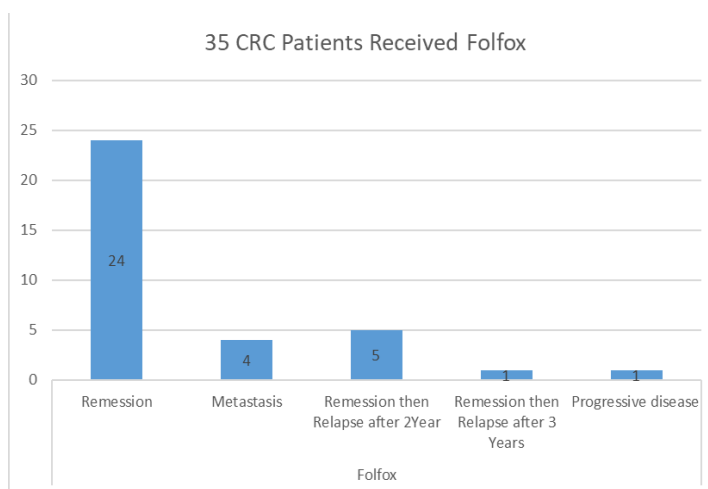


Figure 2. This figure shows the effect of Folfox chemotherapy on 35 colorectal cancer patients

Discussion

A total of 100 CRC patients were randomly chosen between the years 2016 and 2020. The effects of Capox chemotherapy on 35 CRC patients were compared to the effects of folfox chemotherapy on 35 CRC patients.

The results of this study show that both chemotherapies (Capox and Folfox) had an equal impact on CRC patients; however, Capox is preferable to Folfox because CRC patients who receive Capox chemotherapy do not need to be admitted to the hospital and visit a hospital every three weeks for up to 8 cycles. Patients with CRC who receive Folfox chemotherapy must be admitted to the hospital and return every three weeks for up to 12 cycles. As a result, Capox is a more convenient option for patient's comfort, as well as a better option in terms of cost and also saves time.

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