WOMEN'S CANCER INITIATIVE
TATA MEMORIAL HOSPITAL

PATIENT INFORMATION BOOK

Medical Oncology

Painting credit: Chandrakant Halyal,
College: Sir JJ School of Art, Mumbai.
"Life is almost like a Cactus for breast cancer women.
Even cactus grows flowers and there are butterflies,
who come to enjoy the cactus flower.
A metaphor of this phenomenon is depicted here to show,
there is always hope."

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GENERAL PATIENT INFORMATION AND CONSENT FOR SYSTEMIC THERAPY INCLUDING CHEMOTHERAPY.

This book contains answers to some of the most frequently asked questions by patients undergoing chemotherapy. Please go through this information carefully and ask your doctor about anything that you find difficult to understand. It should be noted that the facts mentioned in this book are general in nature and some variations are to be expected in each patient.

Note to reader :

Always consult your doctor about matters that affect your health. This book is intended as a general introduction to the topic and should not be seen as a substitute for medical, legal or financial advices. You should obtain independent advice relevant to your specific situation from appropriate professionals, and you may wish to discuss issues discussed in this book with them.

All care is taken to ensure that the information in this book is accurate at the time of publication.

Please note that information on cancer, including the diagnosis, treatment and prevention of cancer, is constantly being updated and revised by medical professionals and the research community.

Women's Cancer Initiative-Tata Memorial Hospital and its members/ employees/ doctors will not assume any liability for any injury, loss or damage incurred by use of or reliance on the information provided in this booklet.

CONTENTS

A. What is chemotherapy? How is it given?

Chemotherapy refers to certain drugs, which can inhibit or kill cancer cells. It can be given in the form of injections or oral medications. The majority of injectable chemotherapy drugs are administered through the intravenous route – either as bolus injections or as infusions lasting minutes to hours. However some injectable chemotherapy agents are given through intramuscular (in the muscle), subcutaneous (beneath the skin) or intrathecal (in the spinal fluid) routes. Chemotherapy is usually administered in cycles - repetitively every few weeks. Each cycle is given over one or several days. The cycle duration (time interval between two cycles, counting from the 1st day of initial cycle) and number of cycles varies between different tumours and different regimens. The majority of solid tumours (e.g. lung, breast, ovarian, gastro-intestinal and other similar tumours) are treated with 4 to 8 cycles (average 6) of chemotherapy administered every 3 to 4 weeks. Some tumours can be appropriately treated with one of the many chemotherapy regimens available. The treatment is usually tailor-made for each patient considering their unique condition and may be different from standard published protocols or scientific information.

B. What is the purpose of chemotherapy treatment?

The aim of giving chemotherapy depends on the stage of cancer being treated. In early stages of the disease it is given to prevent relapses. In advanced stage, the purpose is to control symptoms, improve quality of life and in many instances improve survival. The majority of solid tumours are treated with some combination of surgery, radiation and chemotherapy. The majority of hematological (blood) cancers are primarily treated with chemotherapy, with or without radiation.

C. What tests are required before the 1st cycle of chemotherapy? What tests are needed before subsequent cycles?

Depending on the investigations already performed you may be required to undergo some or all of the following tests before starting the 1st cycle of chemotherapy: Complete blood count (CBC), Biochemistry (liver and kidney function tests, tumour markers etc, all done by taking blood sample), Radiology (X-ray, CT scan, ultrasound, 2D Echo), Biopsy etc. You may be called between two cycles for some blood tests (called mid-cycle evaluation) to check the effect of the preceding cycle of chemotherapy. In the majority of instances you will be advised to undergo blood tests (typically CBC, but sometimes other biochemical tests) prior to each cycle of chemotherapy. This is important because blood count needs to recover to normal before the next cycle can be administered. Depending on your specific case the doctor may evaluate the tumour response after a few cycles of chemotherapy with X-rays, CT scans or other tests.

D. Do I need to be admitted to the hospital for chemotherapy? What is 'Day Care'?

Depending on the type of chemotherapy planned and the general condition of the patient, hospitalization may or may not be required. Many chemotherapy regimens are administered as intravenous infusions lasting several hours over one or more days. These can often be safely administered in 'Day Care' where you are admitted for a short duration every day and then discharged. If day care chemotherapy is decided for you, an appointment should be sought from the day care staff for each cycle. You are expected to report to the day care at the appointed time and day.

Some chemotherapy regimens can be safely administered as intravenous push (bolus) in the injection room.

E. Is it guaranteed that I will be cured if I take chemotherapy as prescribed?

The answer to this question is, unfortunately, no. The nature of cancer is such that there is always some chance of relapse (disease coming back) after apparent initial eradication. The chance of relapse varies from one patient to the other and depends on the type of tumour, its stage, the adequacy of treatment and many other factors. In advanced stages also, in a fraction of patients (not all) the cancer will respond to chemotherapy. It is important to appreciate that statistics are applicable to a large group of patients. For every individual like you the outcome is unique. For e.g. when your doctor tells you that the 5-year cure rate is 80%, what he means is this: If 100 patients like you are treated today and followed up with, at the end of 5 years 80 will be alive and free of their disease. The other 20 will experience recurrence at some point of time in that period. It is often very difficult or impossible to predict which group an individual patient will fall into and also when / if recurrence of cancer will happen.

F. What is the total cost of chemotherapy in my case?

The cost of chemotherapy is variable and depends on the type of cancer, the specific chemotherapy regimen chosen and the degree of supportive care that each patient requires. The expense of full chemotherapy course includes the cost of chemotherapy drugs, supportive medicines and hospitalization. You must understand that the cost prediction is approximate and unforeseen circumstances may lead to overruns. Please ask your doctor about the total cost of chemotherapy in your case.

It is to be noted that the cost of chemotherapy drugs has no correlation with their efficacy. More expensive drugs are not necessarily more effective and vice versa.

G. I live outside Mumbai. Can I take the 1st cycle in Tata Memorial Hospital and subsequent ones in my native place?

Yes, indeed you can take the 1st cycle here and we will give a letter of suggestion for the subsequent cycles at your

native place. However if you decide on this course of action, you will be required to stay in Mumbai for 1 to 2 weeks after the 1st cycle to enable us to monitor side effects. Please don't insist on leaving Mumbai immediately after the 1st cycle. When you come for follow up after completion of chemotherapy outside, please bring the exact dates of each cycle and any other interventions (surgery, radiation etc) that may have been carried out. Chemotherapy preferably should be taken under the supervision of a trained medical oncologist. You should note that letters given for chemotherapy outside are only suggestions to your treating doctor. The safe and appropriate administration of chemotherapy is entirely the responsibility of your local doctor.

In a few instances the planned chemotherapy is complicated and/or has high incidence of severe toxicity. Such regimens are best administered under the supervision of experienced oncologists and we may not be able to give you letters for outside chemotherapy in these cases.

H. What will be the effect of chemotherapy on my fertility? What about contraception?

In general it is safe for patients to continue sexual relations with their partners during their treatment. However it is imperative that patients in reproductive age group practice contraception (preferably barrier method) throughout their treatment. Some chemotherapy drugs can cause temporary or permanent infertility. If this is of concern to you, then please discuss this issue with your doctor. If you plan to have children after chemotherapy you are advised to discuss the recommended timing with your doctor. There are several techniques to preserve fertility, like oocyte cryopreservation, embryo cryopreservation, etc. which you can discuss with your treating doctor.

In women of reproductive age group menses can temporarily or permanently cease after some types of chemotherapy.

I. Is my disease contagious? Can I transmit this disease to others by close contact? Can I play with children?

Cancer is not a contagious disease and there is no bar on maintaining normal contacts with other persons including

children. This disease is not transmitted from one person to the other by close contact including sharing utensils, clothes, food, drinks and sexual activity.

J. I have long-standing diabetes and hypertension. Can I continue the medications for these disorders? Can I take medicines prescribed by other doctors?

Yes, you should continue the medications for chronic disorders like diabetes, asthma, heart condition and hypertension. However, you are urged to tell your oncologist about all the medications that you are taking. You can also take medicines prescribed by other doctors for emergency situations; you should tell them about your cancer treatment when you report to them.

K. I want to try Homeopathic treatment along with the treatment prescribed here. Can I do so?

You are advised against simultaneously taking medicines advised under alternative systems of medicine (Homeopathy, Ayurveda, Unani etc) with our treatment. Since we are not trained under those systems we will not be able to predict and anticipate any adverse drug interactions that may occur. If you wish to discontinue our treatment and start another form of treatment you are at liberty to do so.

L. Can I seek a second opinion from another oncologist?

You are welcome to seek opinion from any number of doctors.

M. Can I continue to smoke? Can I continue to chew tobacco?

You are strongly advised to discontinue tobacco use in any form including smoking. We urge your friends and relatives to stop tobacco use in any form since it is the single most important preventable cause of cancer related deaths in the population. If you or anyone known to you wishes to seek help with tobacco cessation you can approach us.

N. What are the recommendations regarding food during my treatment?

The single most important recommendation regarding food and drinks is that they should be clean. It is ideal for you to have well-cooked food, served fresh and warm, during the entire period of your treatment. It is suggested that you avoid very spicy food. There is no bar on consumption of non-vegetarian dishes that are well cooked. You may also have fruits, which are carefully washed with clean water. Fruit juices have no special nutritive value over the corresponding fruits and because they can be a source of infection, they are best avoided during chemotherapy. It is suggested that you should consume clean water in liberal quantities (unless specifically instructed not to do so) throughout your treatment. You should wash your hands with soap and water before each meal and the person serving you food should do the same. This is one of the most important measures to prevent infection during chemotherapy. Unhygienic food and beverages (e.g. fruit juices & coconut water from road-side vendors, raw salad at restaurants etc) consumed during the period of chemotherapy is an important cause of diarrhea and other infections.

O. I have heard that chemotherapy is a very toxic form of treatment. I am scared to take chemotherapy. What should I do?

Like any other treatment modality chemotherapy does have side effects which can occasionally be severe. The occurrence and severity of each of the under mentioned side effects vary from one individual to the other and also on the specific chemotherapy regimen used. It is important to understand that all side effects don't occur in all patients. In fact the majority of patients are able to complete their prescribed chemotherapy course without major complications. The purpose of acquainting you with this information is to enable you to anticipate (and to some extent prevent complications). We hope this will ensure better partnership between you and your medical team in your treatment. Therefore please don't be alarmed after

reading the subsequent description of potential side effects and complications of chemotherapy. It should also be noted that all new symptoms that occur during chemotherapy may not be caused by the latter; other factors like progression of the underlying tumour may be responsible. The final decision to give you chemotherapy takes into account the potential risks and benefits of this treatment. Chemotherapy is suggested only if the benefits outweigh the risks.

P. What are the common side effects of chemotherapy?

The relatively common side effects and toxicities of chemotherapy include, but are not restricted to the following:

a) **Nausea and/or vomiting:** They may start immediately after chemotherapy or occur several days later. These effects last for a variable period of time (hours to weeks). Some drugs like cisplatin have a high propensity to cause nausea and vomiting. Medications (called anti-emetics) will be given to you to decrease the incidence & intensity of nausea and vomiting after chemotherapy. Anti-emetics may be prescribed to you in oral and/or injectable forms.

b) **Sores and ulcers in the mouth and throat:** These effects typically start few days after the start of chemotherapy. It is suggested that you should maintain good oral hygiene using a soft toothbrush twice a day. You should also use antiseptic mouth washes (e.g. Hexidine, Povidone-iodine etc) 2-3 times a day throughout your chemotherapy. To relieve mouth pain (in case you do develop ulcers) you may use Xylocaine viscous (to be liberally applied to mouth before every meal).

c) **Diarrhea:** This may develop at any time after the start of chemotherapy and is usually due to one of the two reasons. First, the chemotherapy drug may affect the cells lining the intestinal epithelium and cause ulceration. Second, it may be due to unhygienic food (e.g. fruit juices & coconut water from road-side vendors, raw salad at restaurants etc) consumed

during the period of chemotherapy. If you develop diarrhea while taking any oral chemotherapy like capecitabine then it should be stopped at once. Whenever you start having diarrhea, Oral Rehydration Solution must be started at once. This will prevent electrolyte imbalance and dehydration.

d) **Constipation:** This is usually a side effect of anti-emetics prescribed with the chemotherapy drugs. However it may also be due to the chemotherapy drugs themselves or the underlying disease. You may take Isabgol husk (Naturolax or Softovac powder) 4-6 tsf with water at bedtime for a few days beginning with each cycle of chemotherapy.

e) **Hair loss:** You might have partial or complete hair loss during treatment. There is no proven effective measure to prevent this side-effect. You will regain the hair within 4-6 months of completion of chemotherapy.

f) **Skin toxicity:** Many drugs can cause darkening of the skin particularly in the light exposed parts of the body. Some drugs can also cause darkening of the nail beds. These side effects are at least partially reversible after the completion of chemotherapy.

g) **Pain and aches in limbs and other parts of the body:** Certain drugs like paclitaxel can cause significant pain in limbs, bones and other body parts. This usually starts within a few hours after starting the drug and lasts for up to a few days. Similarly filgrastim (G-CSF) might cause severe back and limbs ache. Pain-killers can be prescribed by your doctor to overcome this effect.

h) **Low white blood cell counts (leukopenia) with or without infection:** This complication usually starts about 6 to 7 days after start of chemotherapy and lasts for a variable period of time (usually few days). This side effect of chemotherapy occurs in a somewhat predictable, dose and regimen dependent manner. Low WBC counts may or may not be associated with infection. The first sign of infection is usually fever (≥ 100 F) although some patients can develop severe infection without fever. The other common indications

of infection are chills, sweating, loose motions, sore throat, cough, burning during urination, redness or swelling in the skin or in the genital area, unusual vaginal discharge or swelling, etc. There are several measures which can help to lower the risk of infections. You must follow the instructions regarding diet given below. Stay away from people who have cold, flu, boils etc. Avoid crowds. Stay away from children who have been recently immunized. Despite these precautions some patients will develop infection. In the vast majority of patients, infection can be controlled with either oral or injectable antibiotics if it is diagnosed and treated early. In a very small fraction of patients it may be fatal. You must report to the hospital as early as possible if you develop fever or other signs of infection after the administration of chemotherapy. Your doctor may call you to check your blood count after the 1st or subsequent cycles of chemotherapy. The risk of developing low blood count is not altered by any specific food item. Patients should measure temperature with the help of thermometer and should note that down in a diary. All patients must have a thermometer before embarking on chemotherapy.

i) **Low platelet counts:** This can develop at a variable time after the administration of chemotherapy (usually in the 2nd week) and last from a few days to several weeks. Platelet count is important because the chance of spontaneous bleeding (for e.g. from nose, gums, skin, or with vomiting or stools) increases with low platelet count particularly when it falls below 20000/mm^3 or when accompanied by fever. The most significant site of bleeding is brain, which can lead to altered consciousness and other manifestations. It is suggested that you should not take any medication without asking your doctor, prevent cuts during shaving and/or using scissors and avoid strenuous physical activity that may lead to injury. Platelet transfusions may be required (as decided by your doctor) in some patients.

j) **Anemia:** This refers to low hemoglobin levels in the blood and is a well-documented side effect of many chemotherapy drugs. This is often a cumulative effect i.e. it has a higher propensity to occur after several cycles of chemotherapy. There are several other factors that may contribute to the development of anemia, for e.g. bleeding, heavy or prolonged menses, pre-existing malnutrition, poor food intake etc. It manifests as malaise, weakness, fatigue, palpitations, shortness of breath, poor concentration etc. Your doctor may decide to give you packed RBC transfusions to treat this condition or you may require certain medications.

Q. What are the less common side effects of chemotherapy?

The relatively uncommon toxicities that may result due to chemotherapy are as follows:

a) **Extravasation or exudation** of the chemotherapeutic drug can cause pain, swelling and ulceration at the site of injection. Please contact your doctor IMMEDIATELY if you develop any of these symptoms.

b) **Hypersensitivity and anaphylaxis:** This usually manifests as a varying combination of urticaria (a type of skin eruption), shortness of breath, chest tightness, palpitations, sweating and a sinking feeling within a short time (minutes to hours) after starting chemotherapy. The treatment is immediate cessation of the chemotherapeutic drug and other supportive medications. It is an uncommon but potentially serious complication of chemotherapy and is unpredictable. It can happen due to any drug although some like paclitaxel, rituximab etc have higher propensity to cause hypersensitivity. This type of reaction can occur after the first or subsequent cycles of chemotherapy. Any prior history of allergy should be reported to your doctor.

c) **Heart (Cardiac) toxicity:** Some chemotherapy drugs like doxorubicin, epirubicin, daunorubicin, idarubicin, mitoxantrone, 5-fluorouracil, Herceptin etc can cause cardiac toxicity in the form of arrhythmias (irregular

cardiac rhythm) or heart failure. This may happen from minutes to years after the administration of chemotherapy. The occurrence of this complication is low; it is usually related to the cumulative dose of the chemotherapy drug and the existence of pre-existing heart diseases.

d) **Kidney (Renal) toxicity:** Patients undergoing chemotherapy are prone to renal toxicity for a variety of reasons. Certain tumours (for e.g. some lymphomas and leukemias) can lyse rapidly after chemotherapy, leading to clogging of kidneys and failure. Some chemotherapy drugs like cisplatin and antibiotics like amikacin can cause direct injury to kidneys. With appropriate precautions like adequate hydration, urinary alkalinization and allopurinol, this complication can be prevented to some extent.

e) **Lung (Respiratory) toxicity:** Patients undergoing chemotherapy are prone to develop upper or lower respiratory tract infections due to impaired immunity. These manifest as cough, fever, chest pain and shortness of breath. In addition to this, some chemotherapy drugs (most notably bleomycin) can cause direct injury to the lung, presenting as cough, shortness of breath and infiltrates on chest X-ray. You must report any of these symptoms to your doctor at the earliest.

f) **Neurotoxicity:** Some chemotherapy drugs can cause direct injury to peripheral nerves manifesting as tingling, numbness, weakness of muscles and occasionally as constipation. The most commonly implicated drugs are vincristine, cisplatin, oxaliplatin and paclitaxel. These effects are partially reversible after further exposure to the drug is stopped. In addition to this, other drugs like ifosfamide and high-dose cytosine arabinoside can cause central nervous system toxicity presenting as altered consciousness. Some drugs like cisplatin can cause hearing impairment particularly for high frequencies. This is often related to the cumulative dose of the drug.

g) **Liver (Hepatic) toxicity:** Very occasionally chemotherapy drugs or antibiotics can cause toxicity to the liver, which can present as loss of appetite, jaundice and/or impairment of liver function tests. More commonly these abnormalities are due to involvement of the liver by the underlying cancer.

R. Is chemotherapy regimen same for all the diseases? I met some other cancer patients outside OPD and they had lot of side effects? So wanted to know that will I have similar side effects?

Chemotherapy regimen is different for different cancers, some are intensive while others are not. Tolerance to chemotherapy and its effectiveness also varies from patient to patient. So side effects happening in other patients doesn't mean that even you will have it.

S. Can I access my reports online/ or can I see my reports from my native place?

Yes, you can access all the reports online even from your native place by using your PIN usually mentioned on the left side of 1st page of the file.

ACTINOMYCIN-D

Drug type:

- Actinomycin-D is also known as Dactinomycin.
- Actinomycin-D is a well-known antibiotic of the actinomycin group.
- It is a chemotherapy drug.

Actinomycin-D is used for:

- Dactinomycin is used to treat Wilms' tumor, rhabdomyosarcoma, germ cell tumours, gestational trophoblastic disease, Ewing's sarcoma, testicular cancer, melanoma, choriocarcinoma, retinoblastoma, uterine sarcomas, Kaposi's sarcoma, sarcoma botryoides and soft tissue sarcoma.

Actinomycin-D is given:

- Administered by IV infusion (preferred) or IV injection
  *Dactinomycin is classified as a vesicant medication, meaning it can cause damage to tissues that come in direct contact with the drug. You should notify your doctor immediately if you have pain or swelling at the infusion site.

Actinomycin-D side effects:

The following side effects are common: (occurring in greater than 30%)

- Low blood counts: Your white and red blood cells and platelets may temporarily decrease making you more prone to anemia, infection and bleeding.
  Onset: 7 days Nadir: 14-21 days Recovery: 21-28 days
  (Nadir: Meaning low point, nadir is the point in time between chemotherapy cycles in which you experience low blood counts)
- Hair loss
- Nausea and vomiting
- Mouth sores
- Diarrhea

These side effects are less common side effects: (occurring in about 10-29%)

- Loss of appetite
- Fatigue
- Darkening of the skin where previous radiation treatment has been given.
- Liver problems
- Loss of fertility

ANASTROZOLE

Drug type:

- Anastrozole is an oral form of hormonal therapy.
- It is an "aromatase inhibitor".

Anastrozole is used for:

- It is used to treat breast cancer in postmenopausal women.

Anastrozole is given:

- Anastrozole is an oral drug to be swallowed.

Note-

- You should take anastrozole at about the same time each day.
- You may take anastrozole with or without food.
- If you miss a dose, do not take a double dose the next day to compensate for the miss.
- You should not stop taking anastrozole without discussing with your physician.

Anastrozole side effects:

The following side effects are common (occurring in greater than 30%) for patients taking anastrozole:

- Hot flashes
- Muscle/joint pain

The following below side effects are less common (occurring in 10-29%) for patients taking anastrozole:

- Nausea (mild)
- Decreased energy
- Mood disturbances

*It causes loss of bone mineral density and altered lipid level of the blood, so doctors might suggest you doing bone mineral density and lipid level tests at regular intervals. Joint pain caused by this drug usually responds to acupuncture, yoga and exercise.

*This drug is generally prescribed along with oral calcium and bone strengthening agents like osteophos. Bone fractures due to negligible injuries can happen as this drug weakens bones. Use of osteophos and calcium supplements help in reducing these fractures.

BEVACIZUMAB

Drug type:

- Bevacizumab is a targeted agent which blocks formation/ growth of blood pipes or tubes by targeting and inhibiting human vascular endothelial growth factor (VEGF).

Bevacizumab is used for:

- Treatment of advanced colon or rectal cancer, used as part of a combination chemotherapy regimen.
- Treatment for non-squamous, non-small cell lung cancer.
- Treatment of advanced breast cancer, used as part of a combination chemotherapy regimen.
- Treatment of glioblastoma, a brain tumour (GBM).
- Treatment of advanced renal cell carcinoma.

Bevacizumab is given:

- Bevacizumab is given through an infusion into a vein (intravenous, IV). The first dose is given over 90 minutes. The infusion time can eventually be shortened to </=30 minutes if well-tolerated.

Bevacizumab side effects:

The following side effects are common (occurring in greater than 30%) for patients taking bevacizumab:

- Proteinuria
- Nose bleed
- Dizziness
- High blood pressure

These are rare but serious complications of bevacizumab therapy:

- Abdominal pain can be related to a hole in intestine or bleeding inside the tummy.
- Fistula formation/ delayed wound healing complications.
- Hemorrhage (severe bleeding)
- Hypertensive crisis (severe high blood pressure)
- Nephrotic syndrome - a condition marked by very high levels of protein in the urine (proteinuria), low levels of protein in the blood, swelling, especially around the eyes, feet and hands.

BP and urine protein monitoring should be done before every cycle of chemotherapy and should be managed as per what your doctor suggests.

BLEOMYCIN

Drug type:

- Bleomycin is a chemotherapeutic drug.
- Bleomycin is an "antitumour antibiotic".

Bleomycin is used for:

- It is used to treat squamous cell cancers, melanoma, sarcoma, testicular cancer, Hodgkin's and non-Hodgkin's lymphoma.

Bleomycin is given:

- As an injection through a needle placed into a vein or muscle, or as a shot given under the skin.
- As an infusion into the vein (intravenous, IV).
- As an injection into the muscle and subcutaneous tissue.
- As an injection into the pleural cavity to treat pleural effusion.

Bleomycin side effects:

The following side effects are common (occurring in greater than 30%) for patients taking bleomycin:

- Fever and chills
- Skin reactions: redness, darkening of the skin, stretch marks on the skin, skin peeling, thickening of the skin, ulceration.
- Nail thickening, nail banding
- Hair loss
- Pigmentation of the trunk and nails

These side effects are less common side effects: (occurring in about 10-29%)

- Nausea and vomiting
- Lung problems: pneumonitis - The incidence of lung problems increases with age and pre-existing lung conditions. There is a maximum lifetime dose of bleomycin. Your health care professional will monitor the amount of bleomycin you receive as well as your lung function during treatment (can get spirometry for lung evaluation).

CAPECITABINE

Drug type:

- It is a chemotherapy drug.
- It belongs to a class of drug-antimetabolites.

Capecitabine is used for:

- It is used for the treatment of breast, colon, rectum, stomach cancer.

Capecitabine is given:

- Capecitabine is taken orally as a tablet of 500 mg.
- Not to be taken with multivitamin preparation (Folic acid).
- Swallow whole tablet with a glass of water, within 30 minutes after a meal (breakfast and dinner). Do not crush or chew.
- If you have nausea and vomiting while on capecitabine you can take tablet ondansetron (8mg)/ tablet domperidone (10 mg) half an hour before taking the drug.

Capecitabine side effects:

COMMON SIDE EFFECTS: (> 10%)

- Pigmentation of hand and feet
- Pain, burning, redness on palms or feet, including tingling, numbness, peeling (Hand-foot syndrome).
- Diarrhea
- Soreness of mouth or ulcers
- Nausea and vomiting
- Drop in white cells

Measures to take if you have Hand-foot syndrome:

- Avoid activities that cause rubbing, pressure or heat exposure to hands and feet (i.e. gripping tools, vigorous washing, and hot baths). Wear loose comfortable footwear and clothes.
- Clean hands and feet with lukewarm water and apply moisturizer liberally and often to your hands and feet, especially in the creases. You can apply emollients/ petroleum jelly also.

- If you experience ulcers, or blisters on hands or feet, or symptoms affecting your regular activities you must withhold capecitabine and consult your doctor/oncologist.

Measures to take if you have diarrhea:

- Take plenty of liquids and salt. You can take ORS dissolved in 1 litre of water as much as you can.
- You can take tablet Lomotil 2mg/ tablet Imodium if you have diarrhea and can repeat it as often as four times per day.
- If your diarrhea is increasing/increase in stoma output/ loose motions more than 4-6 times per day/pain in belly/fever or blood in stools then immediately stop your medicine and consult your nurse/doctor.
- Avoid direct sun exposure

LESS COMMON SIDE EFFECTS: (1-10%)

- Low blood counts and infection
- Low platelet count/bleeding
- Altered taste/ loss of appetite

RARE SIDE EFFECTS: (< 1%)

- Changes in heart rhythm or precipitation of any cardiac illness or angina or infarction.

CARBOPLATIN

Drug type:

- Is a chemotherapy medication used to treat a number of forms of cancer.
- It belongs to a class of drug-platinum.

Carboplatin is used for:

- Carboplatin infusion is used for the treatment of some types of lung cancer, ovarian cancer and breast cancer.

Carboplatin is given:

- This medicine will be given by infusion (drip) into a vein over 15-60 minutes. Your doctor will work out the correct dose of carboplatin for you and how often it must be given.

- The dose will depend on your medical condition, your size and how well your kidneys are working. Your doctor will tell how well your kidneys are working using blood samples. You will have regular blood tests after your dose of carboplatin. You may also have checks for nerve damage and hearing loss.
- There is likely to be about 3-4 weeks between each dose of carboplatin.

Carboplatin side effects:

Like all medicines, carboplatin can have side effects, although not everybody gets them.

If any of the following happen, tell your doctor immediately:

- Abnormal bruising, bleeding, or signs of infection such as a sore throat and high temperature.
- Severe allergic reaction (anaphylaxis/ anaphylactic reactions) - you may experience a sudden itchy rash (hives), swelling of the hands, feet, ankles, face, lips, mouth or throat (which may cause difficulty in swallowing or breathing), and you may feel you are going to faint. This is more likely after multiple doses of carboplatin (usually 5-6 cycles).
- These are serious side effects. You may need urgent medical attention.

Very common side effects: (affects more than 1 user in 10)

- Tiredness, shortness of breath and paleness caused by anemia (a condition in which there is a decreased number of red blood cells).
- Feeling sick (nausea) or being sick (vomiting)
- Ringing in the ears or changes in your hearing
- Tightness of the chest or wheezing
- Diarrhea or constipation
- Sore lips or mouth ulcers (mucous membrane disorders)
- Rash and/or itchy skin
- Pain or discomfort in your bones, joints, muscles, or surrounding structures (musculoskeletal disorder).
- Problems with your kidneys or urine
- Extreme tiredness/weakness (asthenia)

Drug type:

- Cetuximab is a targeted drug also called as a monoclonal antibody binding to epidermal growth factor receptor (EGFR).

Cetuximab is used for:

- Cetuximab is used to treat advanced RAS family genes NON-mutated colorectal cancers especially left sided cancers.
- Also in the treatment of squamous cell carcinoma of the head and neck.

Cetuximab is given:

- Cetuximab must be given slowly, and the IV infusion can take up to 2 hours to complete.

Cetuximab side effects

The following side effects are common (occurring in greater than 30%) for patients taking cetuximab:

- Rash (acne-like) {report to the doctor, use sunscreen, avoid sun exposure}
- Generalized weakness, malaise
- Fever
- Low magnesium level

These side effects are less common side effects (occurring in about 10-29%) of patients receiving cetuximab:

- Diarrhea
- Constipation
- Poor appetite
- Headache
- Abdominal pain
- Nail disorder - inflammation of the skin surrounding a fingernail or toenail
- Mouth sores
- Itching
- Low red blood cell count (anemia)

*Infusion reactions (chills, fever, shortness of breath) have been experienced with this infusion - rarely, this reaction can be severe with difficulty in breathing, itching, low blood pressure. Pre-medication is given prior to infusion as a precaution.

CISPLATIN

Drug type:

- It is a chemotherapy drug.
- It belongs to a class of compound-platinum.

Cisplatin is used for:

- It is used to treat head & neck, esophagus, lung, breast, cervix, urinary tract and testis cancers.

Cisplatin is given:

- Cisplatin is injected in a vein over 1-2 hours as an infusion.
- It is also given along with radiation as a radio sensitizer, means to enhance the benefits of radiotherapy.
- Caution / dose reduction / stoppage of the drug may be required in kidney disorder, hearing problems, congestive heart failure, tingling in hands and feet, heart disease, low blood counts and platelets, pregnancy, breast feeding and drug allergy.
- A litre of extra saline with some added potassium and magnesium are given before and after cisplatin to reduce kidney injury caused by this drug. It is repeated weekly when given along with radiation or else thrice weekly when given alone or with other chemotherapy drugs.
- If cisplatin escapes from the vein it can cause tissue damage. If you experience pain or notice redness or swelling at the IV site while you are receiving cisplatin, alert your doctor/nurse immediately.
- You need to drink lots of water during cisplatin therapy.

Cisplatin side effects:

COMMON SIDE EFFECTS: (> 10%)

- Nausea and vomiting
- Kidney toxicity
- Low sodium and potassium in your body
- Ringing in ears, hearing loss

LESS COMMON SIDE EFFECTS: (1-10%)

- Decreased sensation, numbness and tingling of the extremities, sensory loss (neuropathy)
- Hair loss
- Low blood counts and infection

- Low platelet count/bleeding
- Altered taste/loss of appetite

RARE SIDE EFFECTS: (< 1%)

- Allergic reaction
- Acute kidney failure
- Blockage of vessels of heart or brain
- Seizures

CYCLOPHOSPHAMIDE

Drug type:

- It is a chemotherapy drug.
- This medication is classified as an "alkylating agent".

Cyclophosphamide is used for:

- It is used for the treatment of breast cancer, ovarian cancer, lymphoma and myeloma.

Cyclophosphamide is given:

- It is given either alone or in combination with other chemotherapy drugs like anthracyclines in breast cancer
- Cyclophosphamide can be administered both orally and intravenously. It is given orally as a component of metronomic chemotherapy with other drugs.
- Regarding IV dose and duration, it's different in different protocols and will be decided by your physician.

Cyclophosphamide side effects:

- Nausea and vomiting
  - Anti-sickness medicines can be given to reduce or prevent these symptoms.
- Hair loss: Some or all hair may be lost including eyebrows and eyelashes.
- Reduced bone marrow function:

  This can cause anemia, bruising or bleeding and infection.

This only tends to occur with higher doses. Blood counts will be checked regularly to see how the bone marrow is working.

- Strange taste:

  Cyclophosphamide can cause a strange taste in the mouth. This is temporary and different flavoured food may be preferred whilst on treatment.

- Fertility:

  The ability to become pregnant or father a child may be affected by taking this drug. This will depend on the combination of medicines and dose given.

What are the less common side effects?

- Irritation of the bladder wall:

  Cyclophosphamide may cause irritation of the bladder wall. This may appear as blood in the urine. If this happens contact the Oncology Unit for advice.

- Mouth sores and ulcers
- Secondary cancers:

  There is a very small risk of a second cancer developing after many years. If you would like more information, please discuss this with your consultant.

- Changes in nails and skin:

  The nails and skin may become darker.

DENOSUMAB

Drug type:

- Denosumab is a monoclonal antibody that works as a RANK ligand (RANKL) inhibitor.
- This medication is classified as a "bone-modifying agent".

Denosumab is used for:

- Used to prevent skeletal-related events (need for radiation, fracture due to cancer in the bone, surgery to the bone, or compression of the spinal cord) in patients with bone metastases from solid tumours.

Denosumab is given:

- It is administered as a subcutaneous injection in the upper arm, upper thigh, or abdomen.
- A subcutaneous injection is a quick injection into the layer of skin directly below the outer skin layer.

Denosumab side effects:

The following are common (occurring in greater than 30%) side effects for patients taking denosumab:

- Fatigue
- Muscle weakness
- Decreased levels of phosphorus in your blood (hypophosphatemia)
- Nausea

These are less common side effects: (occurring in 10-29%)

- Diarrhea
- Shortness of breath
- Low levels of calcium in your blood (hypocalcemia)
- Joint pain
- Back pain
- Eczema (a skin condition)
- Osteonecrosis of the jaw has been reported rarely in patients with cancer receiving treatment regimens that include bone modifying agents. Invasive dental procedures should be avoided during treatment.

This injection works better and is safe in patients with kidney issues.

Drug type:

- Docetaxel is an anti-cancer ("antineoplastic" or "cytotoxic") chemotherapy drug.
- This medication is classified as a "plant alkaloid", a "taxane" and an "antimicrotubule agent".

Docetaxel is used for:

- Approved in treatment of breast cancer, non-small cell lung cancer, advanced stomach cancer, head and neck cancer, metastatic prostate cancer and soft tissue sarcoma.

Docetaxel is given:

- Docetaxel is given through a vein (intravenously, IV).
- Premedication with a corticosteroid pill starting a day prior to docetaxel infusion for 3 days is given to reduce the severity of fluid retention and allergic reactions.

Docetaxel side effects:

Infusion-related side effects (symptoms which may occur during the actual treatment) include:

- Allergic reactions (rash, flushing, fever, lowered blood pressure). Happens rarely, usually occurs in the first or second infusion. Frequency is reduced by premedication with corticosteroid starting one day before infusion. You will be monitored closely during the infusion for any signs of allergic reaction.
- Infusion site reactions (uncommon and generally mild, consist of darkening of the vein, inflammation, redness or dryness of the skin, or swelling of the vein).

The following side effects are common (occurring in greater than 30%) for patients taking docetaxel:

- Low white blood cell count (This can increase your risk of infection).
- Low red blood cell count (anemia).
- Fluid retention with weight gain, swelling of the ankles or abdominal area.
- Peripheral neuropathy (numbness in your fingers and toes) may occur with repeated doses. This should be reported to your healthcare provider.

- Nausea
- Diarrhea
- Mouth sores
- Hair loss
- Fatigue and weakness
- Infection
- Nail changes (Color changes to your fingernails or toenails may occur while taking docetaxel. In extreme, but rare cases nails may fall off. After you have finished docetaxel treatments, your nails will generally grow back).

These side effects are less common, meaning they occur in 10-29 percent of patients receiving docetaxel:

- Vomiting
- Muscle/bone/joint pain (myalgias and arthralgias)
- Low platelet count (This can increase your risk of bleeding)
- Increase in blood tests measuring liver function. These return to normal once treatment is discontinued.

DOXORUBICIN

Drug type:

- Doxorubicin is an injection that contains doxorubicin hydrochloride.
- Doxorubicin is in the “anthracycline” and “antitumour antibiotic” family of medications.

Doxorubicin is used for:

- Doxorubicin is commonly used to treat some leukemias and Hodgkin's lymphoma, as well as cancers of the bladder, breast, stomach, lung, ovaries, thyroid, soft tissue sarcoma, multiple myeloma, and others.

Doxorubicin is given:

- Doxorubicin is administered via an intravenous (IV) injection through a central line or a peripheral venous line, and the drug is given over several minutes.
- It is a highly extravasant drug and if you have pain or swelling during infusion, PLEASE INFORM THE DOCTOR/ NURSE ASAP.

Note- Do not use doxorubicin if you have suffered from severe heart trouble in the past, or are presently receiving treatment for this. We usually ask for 2D echocardiography/ ECG or other relevant test to make sure heart is functioning well.

Doxorubicin side effects:

Apart from side effects mentioned in the general information booklet, following are the specific side effects of doxorubicin:

- Reddening of your urine (which is normal and related to the colour of the medicine). You should inform your doctor if it does not stop in a few days or you think there is blood in your urine. Let your doctor know if you get these symptoms.
- You may notice your heart beating abnormally quickly, with an increase in pulse rate. In some cases, you may notice heart problems several months or years after medication has been completed.
- Heart failure which can be associated with the symptoms of shortness of breath and swelling of the ankles.
- Abnormal ECG (this is an electrical trace of your heart) results.
- Hair loss is common and may be quite severe. Beard growth may stop in men. Hair normally regrows when your treatment course ends.
- Sunlight may cause excessive irritation to your skin. Skin rashes, redness, hives, numbness and tingling in the palms and feet may also occur whilst being treated with doxorubicin. Nails and skin may appear darker than usual.
- It may cause low counts (including platelet counts and low white blood cell counts). Usually 7-14 days after infusion, thus predisposing to infection and bleeding.
- Might cause severe vomiting and nausea if given in combination with cyclophosphamide. In that case see your oncologist if vomiting is uncontrolled despite taking medications that are usually given after chemo cycle.

EPIRUBICIN

Drug type:

- Epirubicin is an anti-cancer ("antineoplastic" or "cytotoxic") chemotherapy drug.
- Epirubicin is classified as an "anthracycline antitumour antibiotic".

Epirubicin is used for:

- Epirubicin is used to treat breast cancer.
- It is used as adjuvant therapy in women who have had surgery and have lymph node involvement.

Epirubicin is given:

- Epirubicin is given by intravenous injection (IV).
- The syringe needle is placed directly in to the tubing of a freely flowing IV solution into a vein or central line and the drug is given over several minutes.
- It is a highly extravasant drug and if you have pain or swelling during infusion, please inform the doctor/ nurse ASAP.
- The amount of epirubicin that you will receive depends on many factors, including your height and weight, your general health or other health problems, and the type of cancer or condition being treated.
- Your doctor will determine your dose and schedule.

Epirubicin side effects:

Important things to remember about the side effects of epirubicin:

- Most people do not experience all of the side effects listed.
- Side effects are almost always reversible and will go away after treatment is complete.
- The side effects of epirubicin and their severity depend on how much of the drug is given. In other words, high doses may produce more severe side effects.

The following side effects are common (occurring in greater than 30%) in patients taking epirubicin:

- Early: (within one week after treatment begins)
  - Pain along the site where the medication was given
  - Nausea or vomiting
  - Urine will appear red for 1-2 days
- Later: (within two weeks after treatment begins)
  - Low blood counts: Your white and red blood cells and platelets may temporarily decrease. This can put you at increased risk for infection, anemia and/or bleeding.
- Hair Loss
- Symptoms of heart failure, ECG changes

ERIBULIN

Drug type:

- Eribulin is an anti-cancer ("antineoplastic" or "cytotoxic") chemotherapy drug.
- This medication is classified as a "non-taxane microtubule inhibitor".

Eribulin is used for:

- Eribulin is used for the treatment of patients with metastatic breast cancer.
- Recently it has also shown activity in soft tissue sarcoma.

Eribulin is given:

- Eribulin is given through a vein as an intravenous push or as intravenous infusion over 2 to 5 minutes.

Eribulin side effects:

The following side effects are common (occurring in greater than 30%) for patients taking eribulin:

- Low blood counts: Your white and red blood cells may temporarily decrease. This can put you at increased risk of infection and/or anemia.

- Fatigue/weakness
- Hair loss
- Nausea
- Peripheral neuropathy (numbness and tingling of the hands and feet)

  These are less common (occurring in 10-29%) side effects in patients receiving eribulin:

- Constipation
- Arthralgia/myalgia (pain in the joints/ muscles)
- Fever
- Weight loss
- Loss of appetite
- Headache
- Diarrhea
- Vomiting
- Mouth sores
- Increase in blood test measuring liver function.
- Back pain

If you develop some other symptoms not mentioned above, you need to contact your health care provider.

ETOPOSIDE

Drug type:

- It is a chemotherapy medication used for the treatment of various cancers.
- It belongs to a class of drugs called plant alkaloids.

Etoposide is used for:

- This includes bladder, prostate, lung, stomach, and uterine cancers. Hodgkin's and non-Hodgkin's lymphoma, mycosis fungoides, Kaposi's sarcoma, Wilms' tumor,

rhabdomyosarcoma, Ewing's sarcoma, neuroblastoma, brain tumours.

- It also may be given as high-dose therapy in bone marrow transplant setting.

Etoposide is given:

- It is consumed by mouth or
- As an infusion into the vein (Intravenous, IV), as a short infusion or as a continuous infusion over 24 hours.

Etoposide side effects:

The following side effects are common: (occurring in greater than 30%)

- Low white blood cell count (This can increase your risk of infection).
- Low platelet count (This can increase your risk of bleeding).

  Onset: 5-7 days Nadir: 7-14 days Recovery: 21-28 days

  (Nadir: Meaning low point, nadir is the point in time between chemotherapy cycles in which you experience low blood counts)
- Hair loss
- Menopause (chemotherapy induced)
- Loss of fertility
- Nausea and vomiting (especially at high doses)
- Low blood pressure (if the drug is infused too fast)

These side effects are less common, meaning they occur in 10-29 percent:

- Mouth sores (especially at high doses)
- Diarrhea (especially at high doses)
- Radiation recall
- Delayed effects:

  There is a slight risk of developing a blood cancer such as leukemia years after taking etoposide.

EVEROLIMUS

Drug type:

- Everolimus is a targeted therapy and is classified as an mTOR inhibitor.

Everolimus is used for:

- Treatment of advanced renal cell cancer, after sunitinib and sorafenib treatment failure.
- Advanced pancreatic neuroendocrine tumours.
- Treatment of advanced hormone receptor positive, HER2 negative breast cancer in post menopausal women, after letrozole or anastrozole treatment failure.

Everolimus is given:

- Everolimus is given as a tablet by mouth.
- Take at the same time each day, may be taken with or without food.
- Swallow whole with a glass of water, do not chew or crush tablets.
- Avoid contact with or exposure to crushed or broken tablets.

There are 2 tablet strengths :

5mg tablet

10mg tablet

Everolimus side effects:

The following side effects are common (occurring in greater than 30%) for patients taking everolimus:

- Low red blood cell count (anemia)
- Increased blood cholesterol level
- Increased blood triglyceride level
- Increased creatinine
- Mouth sores
- Low phosphorus level
- Infection
- Weakness
- Diarrhea
- Cough

These are less common (occurring in 10-29%) side effects for patients receiving everolimus:

- Rash
- Low blood counts: Your white blood cells and platelets may temporarily decrease. This can put you at increased risk for infection and/or bleeding.
- Nausea, vomiting
- Increased liver enzymes
- Swelling
- Poor appetite
- Shortness of breath
- Fever
- Fatigue
- Pneumonitis manifested by breathlessness.

5-FU (Fluorouracil)

Drug type:

- 5-FU is an anti-cancer ("antineoplastic" or "cytotoxic") chemotherapy drug.
- This medication is classified as an "antimetabolite".

5-FU is used for:

- Colon and rectal cancer
- Breast cancer
- Gastrointestinal cancers including: anal, esophageal, pancreas and gastric (stomach).
- Head and neck cancer

5-FU is given:

- As an injection into the vein (intravenous or IV), or as an infusion. The amount of time and schedule of infusion varies depending on a specific protocol, it may be given over several hours to several weeks.

5-FU side effects:

*The following side effects are common (occurring in greater than 30%) for patients taking 5-FU:

- Diarrhea
- Nausea and possible occasional vomiting
- Mouth sores
- Poor appetite
- Watery eyes, sensitivity to light (photophobia)
- Taste changes, metallic taste in mouth during infusion.
- Discoloration along vein through which the medication is given.
- Low blood counts: Your white and red blood cells and platelets may temporarily decrease. This can put you at increased risk for infection, anemia and/or bleeding.

* These side effects are less common (occurring in about 10-29%) of patients receiving 5-FU:

- Skin reactions: Dry, cracking, peeling skin. Darkening of the skin (hyperpigmentation), darkening of the skin where previous radiation treatment has been given (radiation recall).
- Hair thinning
- Nail changes - discoloration, loss of nails (rare)(see skin reactions)
- Hand-foot syndrome (Palmar-plantar erythrodysesthesia or PPE)-skin rash, swelling, redness, pain and/or peeling of the skin on the palms of hands and soles of feet. Usually mild, starting 5-6 weeks after start of treatment. May require reductions in the dose of the medication.

* Serious adverse reactions to 5-FU:

- Chest pain, ECG changes and increase in cardiac enzymes - which may indicate problems with the heart. These symptoms are very rare but increases for patients with a prior history of heart disease.

*Not all side effects are listed above. Some that are rare (occurring in less than 10% of patients) are not listed here. However, you should always inform your health care provider if you experience any unusual symptoms.

Drug type:

- It is a chemotherapy medication
- It belongs to class of drug "antimetabolites"

Gemcitabine is used for:

- Pancreas and gall bladder cancer
- Non-small cell lung cancer
- Urinary bladder cancer
- Soft-tissue sarcoma
- Advanced breast cancer
- Ovarian cancer

Gemcitabine is given:

- Gemcitabine is given by infusion through a vein (intravenously, by IV)

Gemcitabine side effects:

The following side effects are common (occurring in more than 30%) for patients taking gemcitabine:

- Flu-like symptoms (muscle pain, fever, headache, chills, fatigue)
- Fever (within 6-12 hours of first dose)
- Fatigue
- Nausea (mild)
- Vomiting
- Poor appetite
- Skin rash
- Low blood counts: Your white and red blood cells and platelets may temporarily decrease. This can put you at increased risk for infection, anemia and/or bleeding.

These are less common side effects (occurring in 10-29%) for patients receiving gemcitabine:

- Diarrhea
- Weakness
- Hair loss
- Mouth sores
- Shortness of breath

IFOSFAMIDE

Drug type:

- Ifosfamide is an anti-cancer ("antineoplastic" or "cytotoxic") chemotherapy drug.
- It belongs to a class of alkylating agents.

Ifosfamide is used for:

- Recurrent testicular cancer and germ cell tumours.
- Sarcomas (soft-tissue, osteogenic , Ewing's)
- Non-Hodgkin's lymphoma
- Hodgkin's disease
- Non-small cell and small cell lung cancer
- Bladder cancer
- Head and neck cancer

Ifosfamide is given:

- Ifosfamide is given through an infusion into a vein (intravenous, IV).
- This drug should be given with MESNA and hydration.

It is recommended to drink 3 to 5 litres of water per day along with this drug.

Ifosfamide side effects:

* The following side effects are common (occurring in greater than 30%) for patients taking ifosfamide:

- Low white blood cell count (This can put you at an increased risk of infection)
- Low platelet count (This can put you at an increased risk of bleeding)
- Hair loss
- Nausea and vomiting. Usually occurs 3-6 hours after therapy and may last up to 3 days.
- Poor appetite
- Blood in the urine (hemorrhagic cystitis) . The medication mesna should be given with or following treatment with ifosfamide to prevent or decrease the severity of this side effect. You need to take a lot of water.

* These side effects are less common side effects (occurring in about 10-29%) in patients receiving ifosfamide:

- Central neurotoxicity (including sleepiness, confusion and occasionally hallucinations)
- Delayed effects:

  There is a slight risk of developing a blood cancer such as leukemia after taking ifosfamide. Talk to your doctor about this risk.

Your fertility, meaning your ability to conceive or father a child, may be affected by ifosfamide. Please discuss this issue with your health care provider.

* Not all side effects are listed above. Some that are rare (occurring in less than 10% of patients) are not listed here. However, you should always inform your health care provider if you experience any unusual symptoms.

IMATINIB

Drug type:

- It is an oral targeted drug.
- It is a chemotherapy medication used to treat cancer.

Imatinib is used for:

- Used in newly diagnosed adult and pediatric patients with Philadelphia chromosome positive chronic myeloid leukemia (Ph+ CML).
- Adult patients with relapsed or refractory Philadelphia chromosome positive acute lymphoblastic leukemia (Ph+ ALL).
- Gastrointestinal stromal tumors, soft tissue sarcoma and melanoma in some cases.

Imatinib is given:

- Imatinib is a tablet, swallowed with a large glass of water, after a meal.

Imatinib side effects:

The following side effects are common: (in greater than 30%)

- Low blood counts
- Nausea and vomiting

- Edema (swelling of the face, feet, hands)
- Muscle cramps and bone pain
- Diarrhea
- Hemorrhage
- Skin rash
- Increase in liver function tests

These side effects are less common side effects: (about 10-29%)

- Fatigue
- Joint pain
- Abdominal pain
- Shortness of breath

Avoid pregnancy while being on this tablet.

IRINOTECAN

Drug type:

- It is a chemotherapy medication.
- It belongs to a class of drugs called "plant alkaloid" and "topoisomerase I inhibitor".

Irinotecan is used for:

It is used for the following indications:

- Advanced colon or rectal cancer
- Sometimes ovarian cancer and gall bladder cancer (still investigational)

Irinotecan is given:

- This medication is given by infusion through a vein (intravenously, IV).
- Irinotecan is an irritant. An irritant is a chemical that can cause inflammation of the vein through which it is given.
- If the medication escapes from the vein it can cause tissue damage. The nurse or doctor who gives this medication must be carefully trained. If you experience pain or notice redness or swelling at the IV site while you are receiving irinotecan, alert your doctor immediately.

Irinotecan side effects:

The possible side effects (occurring in greater than 30%) for patients taking irinotecan:

- Diarrhea; two types early and late forms.

  Early diarrhea: Occurs within 24 hours of receiving the drug, accompanied by symptoms like runny nose, increased salivation, watery eyes, sweating, flushing, abdominal cramping. (This can occur while the drug is being administered. If so, alert your doctor promptly. Medication can be given to stop and/or lessen this early side effect).

  Late diarrhea: Occurs after 24 hours of receiving the drug, usually peaks at about 11 days after treatment. Because of concerns of dehydration and electrolyte imbalances with diarrhea it is important to be in contact with health care professionals for monitoring, and for medication and diet modification advice.
- Nausea and vomiting
- Weakness
- Low white blood cell count (This can put you at increased risk of infection)
- Low red blood cell count (anemia)
- Hair loss

These side effects are less common side effects (occurring in about 10-29%) of patients receiving irinotecan:

- Constipation
- Shortness of breath
- Cough
- Headache
- Dehydration
- Flatulence (see abdominal pain)
- Flushing of face during infusion
- Mouth sores
- Heartburn

LAPATINIB

Drug type:

- It is an orally active drug.
- It is a dual tyrosine kinase inhibitor which interrupts the HER2/neu and epidermal growth factor receptor (EGFR) pathways.

Lapatinib is used for:

Lapatinib is used to treat certain types of breast cancer (HER2-overexpressing) which have spread beyond the original tumour or to other organs (advanced or metastatic breast cancer).

Lapatinib is prescribed to be taken in combination with another anti-cancer medicine.

- Lapatinib is prescribed in combination with capecitabine, for patients who have had treatment for advanced or metastatic breast cancer before.
- Lapatinib is prescribed in combination with trastuzumab, for patients who have hormone receptor-negative metastatic breast cancer and have had other treatment for advanced or metastatic breast cancer.
- Lapatinib is prescribed in combination with an aromatase inhibitor, for patients with hormone sensitive metastatic breast cancer.

Lapatinib is given:

Taking your tablets

- Swallow the tablets whole with water, one after the other, at the same time each day.
- Take lapatinib either at least one hour before or at least one hour after your food. Take lapatinib at the same time in relation to food each day – for example, you could always take your tablet one hour before breakfast.

Note - If you forget to take lapatinib, don't take a double dose to make up for a missed dose. Just take the next dose at the scheduled time.

Lapatinib side effects:

Possible side effects

Like all medicines, this medicine can cause side effects, although not everybody gets them.

A severe allergic reaction is a rare side effect (may affect up to 1 in 1000 people) and may develop rapidly.

Symptoms may include:

- Skin rash (including itchy, bumpy rash)
- Unusual wheezing, or difficulty in breathing
- Swollen eyelids, lips or tongue
- Pain in muscles or joints
- Collapse or blackout

Very common side effects: (may affect more than 1 in 10 people)

- Diarrhea (which may make you dehydrated and lead to more severe complications)
- Skin rash

Other very common side effects:

- Loss of appetite
- Nausea
- Vomiting
- Sore mouth/mouth ulcers
- Stomach pain
- Joint or back pain
- A skin reaction on palms of hands or soles of feet (including tingling, numbness, pain, swelling or reddening).
- Hot flush

In most cases, the effect on your heart will not have any symptoms. If you do experience symptoms associated with this side effect, these are likely to include an irregular heartbeat and shortness of breath.

- Liver problems, which may cause itching, yellow eyes or skin (jaundice), or dark urine or pain or discomfort in the right upper area of the stomach.
- Nail disorders – such as a tender infection and swelling of the cuticles.

METHOTREXATE

Drug type:

- It is a chemotherapy agent and immune system suppressant.
- It belongs to a class of “antimetabolites”.

Methotrexate is used for:

- Used in the treatment of breast, head and neck, lung, stomach, and esophagus cancers.
- Acute lymphoblastic leukemia (ALL), sarcomas, non-Hodgkin's lymphoma (NHL), gestational trophoblastic cancer, and mycosis fungoides.

Methotrexate is given:

- As an infusion into the vein (intravenous, IV)
- There is also a pill form of methotrexate.

Methotrexate side effects:

- The side effects of methotrexate and their severity depend on how much of the drug is given. In other words, high doses may produce more severe side effects. Leucovorin is sometimes used as rescue to decrease toxicities of methotrexate.

The following side effects are common: (occurring in greater than 30%)

- Low blood counts: Your white and red blood cells and platelets may temporarily decrease. This can put you at increased risk for infection, anemia and/or bleeding.

  Onset: 7 days Nadir: 10 days Recovery: 21 days

  (Nadir: Meaning low point, nadir is the point in time between chemotherapy cycles in which you experience low blood counts)

- Mouth sores (usually occur in 3-7 days after treatment)
- Nausea and vomiting (uncommon with low dose)

These side effects are less common side effects (occurring in about 10-29%) in patients receiving methotrexate:

- Kidney toxicity particularly with high-doses in severe cases can lead to kidney failure. Care is taken to make sure patient is well hydrated with IV fluids before infusion of high-dose methotrexate.
- Skin rash, reddening of the skin (with high doses)
- Diarrhea
- Hair loss
- Increase in blood tests measuring liver function, often seen with high dose treatment. These return to normal within about 10 days.
- Loss of fertility, meaning, your ability to conceive or father a child may be affected by methotrexate.

OXALIPLATIN

Drug type:

- Oxaliplatin is a platinum heavy metal compound that halts RNA, DNA, and protein production in cells.
- It belongs to a class of compound-platinum.

Oxaliplatin is used for:

- Oxaliplatin is used to treat colon/rectal cancer, gastric, pancreatic and gall bladder cancers.

Oxaliplatin is given:

- Oxaliplatin is given by intravenous (into a vein) infusion over a period of about 2 hours. It is often given in combination with other chemotherapy medications such as fluorouracil/ capecitabine, docetaxel, epirubicin and gemcitabine.
- Oxaliplatin is always given as a combination regimen.

Oxaliplatin side effects:

- Drop in hemoglobin (anemia), drop in white blood cells and platelet counts.
- Numbness or tingling in the hands, feet and throat (neuropathy).
- Liver function damage
- Nausea and vomiting
- Constipation
- Fatigue

This medication can cause two types of neuropathy, which are caused by damage to nerves. One type tends to occur within few minutes to 1-2 days of receiving the drug, tends to resolve within 2 weeks and can reoccur with subsequent doses. It can feel like a tingling or numbness (pins & needles) or burning in the hands, feet, area around the mouth, in the throat or the area where IV canula was inserted. This neuropathy can be exacerbated by exposure to cold temperature or cold objects (drinking a cold drink can trigger a feeling of spasm in the throat, or touching a cold steering wheel could cause numbness or tingling of the hands). Avoid cold exposure for several days after treatment. Drink room temperature fluids and wear gloves and socks in cool weather. Sudden severe choking sensation can occur especially at the end of infusion of oxaliplatin.

Acute onset of choking may require prolongation of dose infusion to 6 hours . May consider super dilution protocol.

The second type of neuropathy tends to develop after several doses, persists between treatments (no break in the symptoms) and can get progressively worse with additional doses of the medication. It is typically numbness and tingling in the hands and/or feet in the area a glove or sock would cover. This can progress to be painful and can affect your ability to perform daily tasks safely (unable to sense temperature of bath water, cannot feel the step with your toe, becoming a fall risk). Patients may have changes in proprioception, which is the ability of the body to be aware of its position. For instance, you can't button a shirt without looking at them. These symptoms are caused by damage to the nerves in the hands and feet. This neuropathy typically resolves or improves gradually over the months and sometimes years following the discontinuation of treatment, but can become permanent in some patients especially diabetics.

Be sure to tell your oncology team about any neuropathy symptoms, as this may require dose changes to prevent long-term damage.

Other side effects:

- Some patients may develop pulmonary fibrosis, a scarring of the lung tissue. Notify your oncology team if you develop cough, have difficulty breathing or shortness of breath.

PACLITAXEL

Drug type:

- It is a chemotherapy drug
- It belongs to a class of compound microtubule inhibitors

Paclitaxel is used for:

- It is used for the treatment of breast, ovary, lung, head, neck and some gastrointestinal tumours.

Paclitaxel is given:

- It is given by injection in a vein after dissolving in saline or dextrose solution. Usually given over three hours every three week.
- It is also given in smaller doses weekly infused over a shorter time (1 hour).
- You will be given steroids half an hour before this drug which will help to reduce allergic reactions.
- Also you will be given drugs (Ondansetron/ Granisetron) to prevent and treat nausea and vomiting anticipated with this drug.

Paclitaxel side effects:

Mild reactions may consist of fever, chills, skin itching, or feeling flushed. More serious reactions happen rarely, but can be dangerous. Symptoms can include feeling lightheaded or dizzy (due to low blood pressure), chest tightness, and shortness of breath, back pain, or swelling of the face, tongue, or throat.

COMMON SIDE EFFECTS: (> 10%)

- Low white blood cell count with increased risk of infection and anemia (lowest counts are from 8-14 days after chemotherapy).
- Mild allergic reaction (fever, flushing, itching, rapid heart rate)
- Numbness, tingling, or pain in the hands, feet, or elsewhere.
- Nausea and/or vomiting

- Hair loss, including hair on the face and body.

This drug may cause damage to certain nerves in the body, which can lead to a condition called peripheral neuropathy. This can cause numbness, weakness, pain, burning, or tingling, usually in the hands or feet. These symptoms can get worse, leading to you having trouble walking or holding things in your hands. Let your nurse/doctor know right away if you notice any of these symptoms.

LESS COMMON SIDE EFFECTS: (1-10%)

- Sores in the mouth or on the lips
- Muscle or joint pain
- Pain, redness or swelling at the infusion site
- Fever
- Weakness or tiredness
- Rash may be itchy and might develop on the same day or after few days of paclitaxel infusion.

RARE SIDE EFFECTS: (< 1%)

- Low platelet count and bleeding
- Serious allergic reaction
- Changes in heart rhythm or precipitation of any cardiac illness or angina

PANITUMUMAB

Drug type:

- Panitumumab is a targeted drug also called as a monoclonal antibody binding to epidermal growth factor receptor (EGFR).

Panitumumab is used for:

- Panitumumab is used to treat advanced RAS family genes NON-mutated colorectal cancers especially left sided cancers.

Panitumumab is given:

- By intravenous (IV) infusion

Panitumumab side effects:

The following side effects are common: (occurring in greater than 30%)

- Rash (acne-like) {report to the doctor, use sunscreen, avoid sun exposure}
- Generalized weakness, malaise
- Fever
- Low magnesium level

These side effects are less common side effects: (occurring in about 10-29%)

- Diarrhea
- Constipation
- Poor appetite
- Headache
- Abdominal pain
- Nail disorder - inflammation of the skin surrounding a fingernail or toenail.
- Mouth sores
- Itching
- Low red blood cell count (anemia)

Infusion reactions (chills, fever, shortness of breath) have been experienced with this infusion - rarely, this reaction can be severe with difficulty in breathing, itching, low blood pressure. Premedication is given prior to infusion as a precaution.

PAZOPANIB

Drug type:

- Pazopanib is a targeted therapy.
- Pazopanib is a tyrosine kinase inhibitor and Vascular Endothelial Growth Factor (VEGF) inhibitor. That means it targets the growth pathways of the cancer cells and blood vessels to tumour are also affected.

Pazopanib is used for:

- Pazopanib is used for the treatment of advanced renal cell carcinoma and soft tissue sarcoma.

Pazopanib is given:

- Pazopanib is given in a tablet form to be taken by mouth on an empty stomach, at least one hour before or two hours after eating.

Pazopanib side effects:

The following side effects are common (occurring in greater than 30%) for patients taking pazopanib:

- Diarrhea
- Hypertension
- Hair and skin color changes
- Low blood counts (low white blood cells, low platelets)
- Elevated liver function tests (AST, ALT)
- Elevated bilirubin level
- Blood test abnormalities (low phosphorus, low sodium, increased glucose)

These are less common side effects (occurring in 10-29%) for patients receiving pazopanib:

- Nausea
- Vomiting
- Poor appetite
- Fatigue
- Weakness
- Abdominal pain
- Headache
- Blood test abnormalities

  Low magnesium

  Low glucose - Low blood sugar

Always inform your health care provider if you experience any unusual symptoms.

PERTUZUMAB

Drug type:

- Pertuzumab is a monoclonal antibody. Monoclonal antibodies attach themselves to specific proteins or antigens.
- HER2 testing is performed on the biopsy specimen commonly by pathology department with IHC method. Sometimes, FISH method is used to confirm it.

Pertuzumab is used for:

- Metastatic breast cancer with a strong HER2 positivity. Pertuzumab may be prescribed in combination with the chemotherapy medicine paclitaxel or docetaxel as first treatment for metastatic breast cancer or it may be prescribed alone if other treatments have proved unsucc - essful.
- It is also used in combination with medicines called aromatase inhibitors.
- Before starting the treatment your doctor will determine the amount of HER2 in your tumour. Only patients with a strong HER2 positivity will be treated with pertuzumab. The dose of pertuzumab depends on your body weight.

Pertuzumab is given:

- Pertuzumab is given as an infusion into a vein (intravenous infusion).
- Pertuzumab causes irreversible cardiotoxicity which is clinically relevant only in 3-5% of cases. That's why your treating doctor gets your 2D echocardiography done.
- Special precaution should be considered when lung is affected with large number of metastatic lesions, previous cardiac dysfunction, previous doxorubicin treatment.

Pertuzumab side effects:

May affect up to 1 in 10 people:

- Allergic reactions, skin rash

Common side effects:

- Infections
- Diarrhea
- Skin rashes
- Chest pain
- Abdominal pain
- Joint pain

The following side effects are uncommon for patients taking pertuzumab**:**

- Increased liver enzymes (AST, ALT)
- Decreased platelet count
- Decreased red blood cells/ hemoglobin
- Nausea, vomiting, diarrhea, oral ulcer
- Decreased white blood cells
- Fatigue
- Musculoskeletal pain (joint and muscle pain)
- Decreased potassium
- Fatigue/tiredness
- Flu-like reactions or allergic reactions

REGORAFENIB

Drug type:

- Regorafenib is an oral targeted agent.
- It blocks the blood vessel formation plus inhibits cell growth.

Regorafenib is used for:

- For the treatment of colorectal cancer and gastrointestinal stromal tumor.

Regorafenib is given:

- Regorafenib is a tablet, taken via mouth, once daily. Take regorafenib at the same time every day.
- Swallow regorafenib tablets whole. Do not crush or dissolve.

Note: If you miss a dose, take it as soon as you remember. If it is too close to your next dose (within 12 hours), just take your next dose at your regular time.

Regorafenib side effects:

The following side effects are common (occurring in greater than 30%) for patients taking regorafenib :

- Increased liver enzymes (AST, ALT)
- Fatigue
- Protein in the urine
- Low calcium
- Low phosphorus
- Low white blood cells
- High bilirubin in the blood
- Hand-foot syndrome (redness, swelling, pain, skin changes on the palms and feet)
- Diarrhea
- Low platelets
- Mouth sores/inflammation
- High blood pressure (monitor on weekly basis)

These side effects are less common side effects (occurring in about 10-29%) of patients receiving regorafenib :

- Rash
- Low potassium
- INR increased (decreased blood clotting)
- A serious, but very uncommon side effect of regorafenib is liver problems. Also risk of intestine perforation along with bleeding can happen though it is very rare.

SORAFENIB

Drug type:

- Sorafenib is an oral targeted therapy.
- It works by targeting some specific targets on cancer cells to kill them and also by reducing the blood flow to the tumour.
- It belongs to a class of kinase inhibitors.

Sorafenib is used for:

- Drug is approved for the treatment of primary kidney cancer (advanced renal cell carcinoma).
- Advanced primary liver cancer (hepatocellular carcinoma).
- Radioactive iodine resistant advanced thyroid carcinoma.

Sorafenib is given:

- Sorafenib comes as a tablet to be taken orally.
- It is usually taken twice a day and should be taken on an empty stomach, 1 hour before or 2 hours after a meal.
- Take sorafenib at around the same time every day.
- The blood levels of this medication can be affected by certain foods and medications, so they should be avoided. These include: dexamethasone, carbamazepine, rifampin, phenytoin and phenobarbital.
- Be sure to tell your oncologist about all medications and supplements you take.

Sorafenib side effects:

- Rise in blood pressure
- Fatigue
- Diarrhea
- Hand and Foot Syndrome (HFS): peeling or ulceration of skin over palms and soles.
- Oral ulcers
- Loss of urine protiens
- Can affect thyroid function
- Skin rash
- Rare side effects are intestinal perforation, intracranial bleed.
- Regular monitoring of blood pressure is required.

Sorafenib may interfere with wound healing. The manufacturer recommends stopping the drug before any surgical procedure and not restarting until there is adequate wound healing.

PRECAUTION:

If you have previous heart attack or heart pumping problems, avoid taking sorafenib or be cautious while on sorafenib.

SUNITINIB

Drug type:

- Sunitinib is a targeted drug acting as a receptor protein-tyrosine kinase inhibitor.

Sunitinib is used for:

- Used to treat gastrointestinal stromal tumor (GIST).
- Used to treat advanced renal cell cancer.
- Used to treat advanced pancreatic neuroendocrine tumour.

Sunitinib is given:

- As a capsule taken by mouth, swallowed with or without food.

Sunitinib side effects:

The following side effects are common (occurring in greater than 30%) for patients:

- Fatigue
- Diarrhea
- Nausea and vomiting
- Taste changes
- Hypertension (high blood pressure)
- Low blood counts
- Skin discoloration (yellowish tinge to skin)

The following side effects are less common: (occurring in 1-29%)

- Increased liver enzymes

- Weakness
- Constipation
- Abdominal pain
- Dry skin
- Swelling of ankles and feet
- Shortness of breath
- Generalized aches and pains
- Rash
- Hand-foot syndrome (Palmar-plantar erythrodysesthesia or PPE)-skin rash, on the palms of hands and soles of feet.
- Hair color changes
- Hypothyroidism
- Hair loss

TAMOXIFEN

Drug type:

- Tamoxifen is an orally administered hormonal therapy.
- This medication is classified as an "anti-estrogen" which blocks the action of estrogen.
- It belongs to class of steroid hormones and their antagonist.

Tamoxifen is used for:

- Tamoxifen may be prescribed in advanced breast cancer in both women and men.
- Tamoxifen may be given as a post surgery treatment in women or men with breast cancer. Tumours with presence of estrogen and progesterone receptors are more likely to benefit from tamoxifen. Tamoxifen when administered after surgery of one sided breast cancer, it reduces the risk of getting breast cancer in the opposite breast.
- Tamoxifen may be prescribed in women with ductal carcinoma in situ (DCIS).

Tamoxifen is given:

- Tamoxifen should be swallowed as a whole tablet.

Tamoxifen side effects:

The common side effects are:

- Hot flashes
- Vaginal discharge
- Swelling (fluid retention in feet, ankles, or hands)
- Loss of libido (particularly in men)

Less common side effects are:

- Nausea
- Menstrual irregularities
- Vaginal bleeding
- Weight loss
- Mood changes (anxiety and/or depression)

While a patient is on tamoxifen, a barrier contraceptive has to be used as it is harmful to the fetus. Any vaginal bleeding should be reported to your doctor immediately. It can rarely cause uterine cancer.

It can also cause blood clots anywhere in the body, hence watch on symptoms like, leg swelling, breathlessness etc.

T-DM1 (Trastuzumab emtansine)

Drug type:

- T-DM1 is an anti-HER2 monoclonal antibody (Trastuzumab) combined with a microtubular inhibitor (emtansine).

T-DM1 is used for:

- T-DM1 is used as a single agent to treat HER2-positive, metastatic breast cancer who previously received trastuzumab and a taxane, separately or in combination. Patients should have either:

  Received prior therapy for metastatic disease, or

  Developed disease recurrence during or within 6 months of completing adjuvant therapy.

T-DM1 is given:

- T-DM1 is given through an infusion into a vein (intravenous, IV)

T-DM1 side effects:

Important things to remember about the side effects of T-DM1:

The following side effects are common (occurring in greater than 30%) for patients taking T-DM1:

- Increased liver enzymes (AST, ALT)
- Decreased platelet count
- Decreased red blood cells
- Nausea
- Decreased white blood cells
- Fatigue
- Musculoskeletal pain (joint and muscle pain)
- Decreased potassium
- Neuropathy

These are less common (occurring in 10-29%) side effects for patients receiving T-DM1:

- Headache
- Constipation
- Diarrhea
- Nose bleeds
- Peripheral neuropathy (numbness or tingling in hands or feet)
- Vomiting
- Fever
- Abdominal pain
- Cough
- Increased bilirubin
- Dry mouth
- Mouth sores
- Shortness of breath
- Rash

Drug type:

- Temozolomide is an oral chemotherapy drug.
- It belongs to a class of alkylating drugs.

Temozolomide is used for:

- Treatment of anaplastic astrocytoma, glioblastoma multiforme (GBM) (types of brain tumours).
- Treatment of neuroendocrine tumours of GI tract.
- Also used in advanced anal melanoma.

Temozolomide is given:

- This comes in a capsule form in 5 mg, 20 mg, 100 mg, 250 mg sizes.
- To be taken on an empty stomach (1 hour before or 2 hours after meals or at bedtime) to reduce stomach upset.

Temozolomide side effects:

The common side effects are :

- Constipation
- Headache, nausea and vomiting

Less common side effects are:

- Low blood counts e.g. white and red blood cells and platelets may temporarily decrease. This can put you at increased risk for infection, anemia and/or bleeding. This side effect is not common but can be severe.

  Onset: none noted Nadir: 7-10 days Recovery: 22-28 days

  (Nadir: Meaning low point, nadir is the point in time between chemotherapy cycles in which you experience low blood counts)

Delayed effects:

- Swelling (edema)
- Central neurotoxicity, dizziness, problems with balance, weakness to one side of body (hemiparesis), seizures, or excessive sleepiness. When used in treatment of brain tumours it is difficult to distinguish if these effects are more due to medication or disease.
- Diarrhea
- Skin rash and itching

A rare but serious complication of severe life threatening liver failure can happen. Though very very rare, it should also be kept in mind.

TRASTUZUMAB

Drug type:

- Trastuzumab is a monoclonal antibody.
- Monoclonal antibodies attach themselves to specific proteins or antigens.
- HER2 testing is performed on the biopsy specimen commonly by the pathology department with IHC method. Sometimes, FISH method is used to confirm it.

Trastuzumab is used for:

- Early breast cancer, with a strong HER2 positivity.
- Metastatic breast cancer with a strong HER2 positivity .
- Trastuzumab may be prescribed in combination with the chemotherapy medicine paclitaxel or docetaxel as first treatment for metastatic breast cancer or it may be prescribed alone if other treatments have proved unsuccessful.
- It is also used in combination with medicines called aromatase inhibitors.
- Metastatic gastric cancer with a strong HER2 positivity.

  Note- Before starting the treatment your doctor will determine the amount of HER2 in your tumour. Only patients with a strong HER2 positivity will be treated with trastuzumab. The dose of trastuzumab depends on your body weight.

Trastuzumab is given:

- Trastuzumab is given as an infusion into a vein (intravenous infusion).
- Trastuzumab causes reversible cardiotoxicity which is clinically relevant only in 3-5% of cases. That's why your treating doctor gets your 2 D echocardiography done.
- Special precaution should be considered when lung is affected with large number of metastatic lesions, previous cardiac dysfunction, previous doxorubicin treatment.

Trastuzumab side effects:

Common side effects of Trastuzumab: (may affect up to 1 in 10 people)

- Allergic reactions

Uncommon side effects: (~1 to 5% patients)

- Infections
- Diarrhea
- Skin rashes
- Chest pain
- Abdominal pain
- Joint pain

VINCRISTINE

Drug type:

- Vincristine is a chemotherapy drug.
- Vincristine is a plant alkaloid.
- It belongs to a class of drug microtubule inhibitors.

Vincristine is used for:

- Cancers treated with vincristine include: acute leukemia, Hodgkin's and non-Hodgkin's lymphoma, neuroblastoma, rhabdomyosarcoma, Ewing's sarcoma, Wilms' tumor, multiple myeloma, chronic leukemias, thyroid cancer, brain tumours.

Vincristine is given:

- Vincristine is given through a vein by intravenous injection (IV push) or infusion (IV).
- Vincristine is a vesicant. A vesicant is a chemical that causes extensive tissue damage and blistering if it escapes from the vein.
- If you notice pain, redness or swelling at the IV site while you are receiving vincristine sulfate, alert your doctor immediately.

Vincristine side effects:

The following side effects are common: (occurring in greater than 30%)

- Hair loss (in 20-70% of patients) may be partial or complete

The following are less common side effects (occurring in 10-29%) in patients receiving vincristine:

- Constipation may sometimes lead to intestinal obstruction (so use laxatives liberally with vincristine)
- Abdominal cramps
- Peripheral neuropathy: Although uncommon, a serious side effect of decreased sensation and paresthesia (numbness and tingling of the hands and feet) may be noted. Though myelosuppression is not a very prominent side effect but it might happen specially in the presence of other drugs given along with it.

ZOLEDRONIC ACID

Drug type:

- Zoledronic acid is a bisphosphonate derivative.

Zoledronic acid is used for:

- Zoledronic acid is used as a support medication to treat symptoms of cancer such as hypercalcemia (high blood calcium levels) or to decrease complications (such as fractures or pain) produced by bone metastasis (spread of cancer to the bone).
- A dental examination with appropriate preventive dentistry should be considered prior to treatment with bispho - sphonates particularly in patients with additional risk factors (e.g. cancer, chemotherapy, corticosteroids, poor oral hygiene). Invasive dental procedures should be avoided during treatment.

Zoledronic acid is given:

- As an infusion into the vein (intravenous, IV)

Zoledronic acid side effects:

The following side effects are common (occurring in greater than 30%) for patients taking zoledronic acid:

- Fever is usually mild and short lived.
- Flu-like symptoms; mild fever sometimes accompanied by malaise, chills, fatigue and flushing. Usually occurs with first treatment with zoledronic acid only.

These are less common side effects (occurring in <10%) for patients receiving zoledronic acid:

- Infusion site reaction with redness, pain swelling at IV site
- Bone, muscle or joint pain
- Nausea and vomiting
- Loss of appetite
- Blood tests indicating worsened kidney function (increased creatinine levels). Your levels will be closely monitored.
- Headache
- Blood test abnormality: low magnesium level

Osteonecrosis of the jaw has been reported rarely in patients with cancer receiving treatment regimens including bisphosphonates. Many of the reported cases were associated with dental procedures such as removal of a tooth. Renal function test and calcium levels are regularly monitored in patients on zoledronic acid.

i) I, the patient/guardian of

_____

_____

_____

registered with Tata Memorial Centre, Case File No.

_____

_____

understand that I/my ward has been diagnosed with

_____

ii) I have been advised the following systemic treatment (chemotherapy/ hormonal therapy/ targeted therapies/ immunotherapy) with

☐ Curative intent or ☐ Non-curative with the intent to control the disease

1		4	
2		5	
3		6	

iii) I understand that a team of healthcare professionals at Tata Memorial Centre will supervise this treatment.

iv) I have been informed about the following:

- Potential benefits of undergoing the above treatment.
- Possible consequences of not undergoing the above treatment.
- Alternative treatment options.
- Potential expenses involved in undergoing chemotherapy.
- Possible side effects including infertility and remote possibility of death due to this treatment.
- I should not become pregnant or father a child while undergoing this treatment or as advised by the treating doctor.

The above facts have been explained to me in a language that I understand and I have read the **'systemic/anticancer therapy booklet',** of which the document is a part.

Name, Signature & Date

Patient / Guardian	Witness and Relationship	Health Care Provider

ACRONYM OF COMMONLY USED PROTOCOLS

ABVD	Adriamycin (A) Bleomycin (B) Vinblastine (V) Dacarbazine (D)
AC	Adriamycin (A) Cyclophosphamide (C)
AD	Adriamycin (A) Dacarbazine (D)
ADE	Cytarabine (A) Daunorubicin (D) Etoposide (E)
ADOC	Adriamycin (A) Oncovin (O) Cyclophosphamide (C) Cisplatin
BEACOPP	Bleomycin (B) Etoposide (E) Adriamycin (A) Cyclophosphamide (C) Oncovin (O) Procarbazine (P) Prednisone (P)
BEP	Bleomycin (B) Etoposide(E) Platinol (P)
CAF	Cyclophosphamide(C) Adriamycin (A) 5-Fluorouracil(F)
CAPIRI	Capecitabine (CAP) Irinotecan(IRI)
CAPOX	Capecitabine (CAP) Oxaliplatin (OX)
CB	Cetuximab (C) Bevacizumab (B)
CBI	Cetuximab (C) Bevacizumab (B) Irinotecan (I)
CEF	Cyclophosphamide (C) Epirubicin (E) 5-Fluorouracil (F)
CEPP	Cyclophosphamide (C) Etoposide (E) Procarbazine (P) Prednisone (P)
CFAR	Cyclophosphamide (C) Fludarabine (F) Alemtuzumab (A) Rituximab (R)
CHOP	Cyclophosphamide (C) Doxorubicin (H) Oncovin (O) Prednisone (P)
CHOP+R	Cyclophosphamide (C) Doxorubicin (H) Oncovin (O) Prednisone (P) Rituximab (R)
CIM	Cisplatin (C) Ifosfamide (I) Mesna (M)
CLAG	Cladribine (CL) Cytarabine (AG)
CLAG-M	Cladribine (CL) Cytarabine (AG) Mitoxantrone (M)

CMC	Cladribine (C) Mitoxantrone (M) Cyclophosphamide (C)
CMF	Cyclophosphamide (C) Methotrexate (M) 5-Fluorouracil (F)
COI	Capecitabine (C) Oxaliplatin (O) Irinotecan (I)
CVD	Cisplatin (C) Vinblastine (V) Dacarbazine (D)
CVP	Cyclophosphamide (C) Vincristine (V) Prednisone(P)
DHAP	Cisplatin Cytarabine Dexamethasone
DVD	Doxorubicin (D) Vincristine (V) Dexamethasone (D)
ECF	Epirubicin (E) Cisplatin (C) 5-Fluorouracil (F)
ECX	Epirubicin Oxaliplatin Capecitabine
EOF	Epirubicin (E) Oxaliplatin (O) 5-Fluorouracil (F)
EOX	Epirubicin (E) Oxaliplatin (O) Capecitabine (X)
EP	Etoposide (E) Platinol (P)
EPOCH	Etoposide (E) Prednisone (P) Oncovin (O) Cyclophosphamide (C) Adriamycin (H)
EPOCH+R	Etoposide (E) Prednisone (P) Oncovin (O) Cyclophosphamide (C) Adriamycin (H) Rituximab (R)
FAMTX	5-Fluorouracil (F) Adriamycin (A) Methotrexate (MTX)
FC	Fludarabine (F) Cyclophosphamide (C)
FCR	Fludarabine (F) Cyclophosphamide (c) Rituximab (R)
FEC	5-Fluorouracil (F) Epirubicin (E) Cyclophosphamide (C)
FLAG-IDA	Fludarabine (FL) Cytarabine (AG) Idarubicin (IDA)
FLO	5-Fluorouracil (F) Leucovorin (L) Oxaliplatin (O)
FLOX	5-Fluorouracil (F) Leucovorin (L) Oxaliplatin (OX)
FOLFIRI	5-Fluorouracil (FO) Leucovorin (LF) Irinotecan (IRI)
FOLFOX	5-Fluorouracil (FO) Leucovorin (LF) Oxaliplatin (OX)
FOLFOXIRI	5-Fluorouracil (FO) Leucovorin (LF) Oxaliplatin(OX) Irinotecan (IRI)
GEMOX-B	Gemcitabine (GEM) Oxaliplatin (OX) Bevacizumab (B)

GVD	Gemcitabine (G) Vinorelbine (V) Doxorubicin(D)
HYPER-CVAD	Cyclophosphamide Doxorubicin Vincristine Dexamethasone Mesna Methotrexate Leucovorin Cytarabine
HDAC	High-Dose Cytarabine
ICE	Ifosfamide (I) Carboplatin (C) Etoposide (E) Mesna
ICE-V	Ifosfamide (I) Carboplatin (C) Etoposide (E) Mesna Vincristine (v)
IFL	Irinotecan (I) 5-Flourouracil (F) Leucovorin (L)
IROX	Irinotecan (IR) Oxaliplatin (OX)
LV5FU2	5-Flourouracil (LV5) Leucovorin (FU2)
LV5FU-P	5-Flourouracil (LV5) Leucovorin (FU) Irinotecan (P)
MAID	Mesna (M) Adriamycin (A) Ifosfamide (I) Dacarbazine (D)
MFL	Methotrexate (M) 5-Fluorouracil (F) Leucovorin (L)
MINE	Mesna (M) Ifosfamide (I) Mitoxantrone (N) Etoposide (E)
MOPP	Mechlorethamine (M) Oncovin (O) Prednisone (P) Procarbazine (P)
MP	Melphalan (M) Prednisone (P)
MPV	Methotrexate (M) Leucovorin Procarbazine (P) Vincristine (V)
MVAC	Methotrexate (M) Vinblastine (V) Adriamycin (A) Cisplatin (C)
OFF	Oxaliplatin (O) 5-Fluorouracil (F) Leucovorin (F)
PAC	Platinol (P) Adriamycin (A) Cyclophosphamide (C)
PAD	Bortezomib (P) Adriamycin (A) Dexamethasone (D)
PCV	Procarbazine (P) CeeNU (C) Vincristine (V)
R-MPV	Rituximab (R) Methotrexate (M) Leucovorin Procarbazine (P) Vincristine (V)
R-GemOx	Rituximab (R) Gemcitabine (GEM) Oxaliplatin (OX)

R-CVP	Rituximab (R) Cyclophosphamide (C) Vincristine (V) Prednisone (P)
R-FCM	Rituximab (R) Fludarabine (F) Cyclophosphamide (C) Mitoxantrone (M)
RICE	Rituximab (R) Ifosfamide (I) Carboplatin (C) Etoposide (E) Mesna
TAC	Taxotere (T)1 Adriamycin (A) Cyclophosphamide (C)
TC	Taxotere (T)1 Cyclophosphamide (C)
TCH	Taxotere (T)1 Carboplatin (C) Herceptin (H)
TIP	TAXOL (T)2 Ifosfamide (I) Mesna Platinol (P)
TPC	Trastuzumab (T) Paclitaxel (P) Carboplatin (C)
TPF	Taxotere (T)1 Platinol (P) 5-Fluorouracil (F)
VAD	Vincristine (V) Adriamycin (A) Dexamethasone (D)

VIP	Vinblastine (V) Ifosfamide (I) Platinol (P) Mesna Etoposide
VMP	Valcade (V)3 Melphalan (M) Prednisone (P)
VMPT	Valcade (V)3 Melphalan (M) Prednisone (P) Thalidomide (T) Mesna
XELIRI	Capecitabine (XEL) Irinotecan (IRI)
XELOX	Oxaliplatin (XELOX)
7+3	Cytarabine Daunorubicin Idarubicin Mitoxantrone
PCR	Pentostatin (P) Cyclophosphamide (C) Rituximab (R) Prednisone(P)

Adriamycin	➡	Doxorubicin
Vincristine	➡	Oncovin
Cisplatin	➡	Platinol
Ceenu	➡	Lomustine
Trastuzumab	➡	Herceptin
Taxotere (T)1	➡	Docetaxel
TAXOL(T)2	➡	Paclitaxel
Valcade(V)3	➡	Bortezomib

Patient Information Book: Systemic Therapy
A guide for people with cancer, their families and friends

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This book will be reviewed approximately every two years. Check the publication date above to ensure this copy is up to date.

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