



KYMERA Independent Physicians

**A PATIENT GUIDE TO CHEMOTHERAPY
AND BIOTHERAPY
“Simply Stated”**

575.627.9110

www.kymeramedical.com

What Medicines Will I Be Taking?

Your Chemotherapy Protocol is called

Your Chemotherapy will be given every

Chemotherapy medication names:

1. _____
2. _____
3. _____
4. _____
5. _____

Your nausea medications and how to use them:

1. _____
2. _____
3. _____
4. _____

Other medications your Cancer doctor has ordered for you:

1. _____
2. _____
3. _____

OTHER FREQUENTLY ASKED QUESTIONS

Q. How do I speak to a nurse or doctor?

A. Call 575.627.9110 either during or after business hours if you need to speak to a nurse.

After 5 pm and before 8am you will reach the answering service. Introduce yourself and let the answering service know what you are calling about and you will be put through to a nurse or doctor. Please reserve after hour calls for emergency questions otherwise you will be referred to office staff the following business day.

*During business hours, you will need to leave a message with the reception or on the Triage nurse voicemail and the nurse will call you back within that business day to answer questions. **If you think you have an emergency you should dial 911, if you are uncertain inform the receptionist in order to bring it to the nurses' attention immediately.***

Q. How do I get a refill?

A. The doctors will fill prescriptions ***that they have prescribed only*** during your course of treatment, be sure you let your doctor know during appointment that you will require refills. Most pain medications require a written prescription and can only be picked up during business hours. So be sure to plan ahead before your appointment to get these prescriptions filled in a timely manner. *Your regular medicines that are prescribed by your primary care doctor will have to be filled by that office.*

Q. Should I call to check on my blood work?

A. It is suggested that you call and leave a message for the triage nurse to follow up on you lab work if you are interested in the results. This would be especially true if you have to drive a long distance to the cancer center to receive your chemotherapy. The triage nurse will not call you in regards to you lab work unless there is a concern of abnormal value.

****The nursing staff will not give results on PET scans, CT scans, Biopsies, or any other test, those will be given to you by your doctor during regular visits.**

WHAT IS CHEMOTHERAPY?

Chemotherapy means chemical treatment.

Cancer chemotherapy is the use of chemicals (medicines) to treat cancer. Chemotherapy travels throughout your body in your bloodstream and kills cancer cells as well as some of your normal healthy cells. This is why you have side effects after your treatment.

WHAT IS BIOTHERAPY?

Biotherapy is targeted therapy. This differs from chemotherapy because it does not affect normal cells. These chemicals, come from biological (living organisms) sources, target only the cancer cells. For this reason, side effects after treatment are not as common, although there are possible side effects during the infusion of these medicines. There are many possible combinations and together you and your doctor will choose the right treatment for your particular cancer.

HOW IS CHEMOTHERAPY/BIOOTHERAPY GIVEN?

Depending on the chemotherapy/biotherapy your doctor has chosen for you, your medication or combination of medicines will be given:

- a. By mouth as a tablet or ***“pill”***
- b. By injection into a muscle or skin as a ***“shot”***
- c. By injection into your bloodstream using an intravenous needle or access device.

HOW DOES CHEMOTHERAPY WORK?

The medicines used in cancer chemotherapy are very strong. They can:

- a. Kill cancer cells
- b. Stop them from growing
- c. Keep new cells from forming

HOW DOES BIOTHERAPY WORK?

Biotherapy works in many different ways in many different ways against cancer cells. Some of the ways, but not limited to the list, that biotherapy works is to:

- a. Change cancer cells so that they behave like normal cells.
- b. Enhance repair of normal cells damage by treatment.
- c. Prevent normal cells from converting to cancer cells.
- d. Making cancer cells more vulnerable to your own immune system as well as enhancing your own immune system.

WILL CHEMOTHERAPY MAKE ME FEEL WORSE?

Cancer medication is so strong that it may also affect normal healthy cells and cause unwanted side effects. Common side effects of chemotherapy can affect:

- Bone marrow where blood originates
- Gastrointestinal tract including the mouth, stomach, intestines
- Hair follicles where the hair starts growing including your scalp, eyelashes, eyebrows etc...

There is no way to know whether you will or will not experience side effects from your cancer medication, but you should know that:

- If the chemotherapy kills the cancer cells, you are most likely to feel better rather than worse.
- Most side effects are only temporary.
- Your doctor has ways to help you if side effects disappear.

HAIR LOSS

EFFECTS ON YOUR HAIR FOLLICLES

Certain medicines can affect the hair follicles (the places that hair grows from). You may lose your hair while you are on chemotherapy because of the medication. This is usually temporary, and most of your hair will grow back. Your hair may look and feel somewhat different than it did before.

If your chemotherapy is one that will cause your hair to fall out, you will usually see this begin to happen in 20 days (about 3 weeks).

Patients who have experienced hair loss state that it is not painful, but the scalp can feel tender

It is not recommended that you have any chemicals placed on your hair (such as perm or color) during your treatment, even if you have not lost your hair, this could cause your hair to fall out or damage it.

It is recommended that if you choose to wear a wig, you find one before hair loss occurs. Patients have stated that it is easier to match to your natural hair color and style.

If you do lose your hair, it is important to remember to cover your scalp with a hat, scarf, and/or sunscreen. This area of your body has not seen the sun before and can get severely burned. Loss of heat is also a problem and during cooler months it is recommended to keep your head covered and even keep covered at night.

GASTROINTESTINAL SIDE EFFECTS

- STOMATITIS
- NAUSEA AND VOMITING
- LOSS OF APPETITE/TASTE CHANGE
- DEHYDRATION
- DIARRHEA
- CONSTIPATION

EFFECTS ON THE GASTROINTESTINAL SYSTEM

The gastrointestinal tract extends from the mouth to your throat, esophagus, stomach, intestines and ends at your rectal area.

Side effects that you may experience are:

- Sore in your mouth, including lips and throat called *stomatitis*.
- Nausea and vomiting
- Loss of appetite
- Dehydration
- Diarrhea
- Constipation

THE GASTROINTESTINAL SIDE EFFECTS OF STOMATITIS

Stomatitis means the lining of your mouth may become red and sore and small white blisters or patches may appear. It may be helpful to:

- Avoid spicy, acidic foods
- Eat a soft, bland diet
- Avoid alcohol and cigarettes
- Practice good oral hygiene. This means that you need to clean your mouth at least three times a day with a soft toothbrush after you eat. If you wear dentures you should leave them out when you are not eating, so that your gums and mouth can get air and heal. Do not forget to clean your tongue!
- **You should also use a solution of 1 tablespoon of baking soda with 1 teaspoon of salt in a regular size glass of water (12oz), made fresh every day, to rinse your mouth throughout the day.** You should not use any over the counter mouthwashes that contain alcohol. Alcohol can worsen the pain and irritate the already damaged lining of your mouth. It is okay and recommended to use some type of Chap Stick or lip moisturizer to keep your lips moist during this time period.
- You may need a prescription medicine called “Mucositic Cocktail” to help with the pain and to heal your mouth.

If the above recommendations are not helping, let your nurse or doctor know so we can get you on pain medications for your mouth. Sometimes Stomatitis just takes time to heal. We want you to be as comfortable and a pain free as possible during this time period.

GASTROINTESTINAL SIDE EFFECTS OF NAUSEA AND VOMITING

Some chemotherapy treatments will cause more nausea than others. Luckily, the nurse and doctors have a lot of experience with this and will give you the appropriate medication or combination of medications to help prevent this feeling. However, there are always instances when someone who really should not be sick with a particular treatment will end up having a lot of nausea and vomiting.

If you are not getting relief from nausea or find your are vomiting a lot you need to let your nurse or doctor know immediately! We are here to help you! We just need to know that you are having problems.

Nausea and vomiting may occur a few hours to days after your treatment. If you experience this problem it may be helpful to:

- Eat small meals often, rather than three large ones.
- Eat bland foods such as dry toast, crackers, tea or soups.
- Avoid sweets, fatty or fried foods.
- Eat cold or icy foods such as popsicles unless your chemo prohibits the ability to drink cold foods.
- Drink carbonated drinks caffeine free, ginger ale, or sports drinks.
- If you are dizzy upon standing and/or confused you may need intravenous fluids and you should contact your doctor if this occurs.

If family members are cooking try to avoid the smells of the kitchen, and have the food served at room temperature to decrease odors. Take your nausea medication at the first sign of nausea do not wait until you start vomiting. Vomiting means your nausea is out of control. **DO NOT WAIT!**

THE GASTROINTESTINAL SIDE EFFECTS OF DEHYDRATION

If you do not eat or drink enough because of uncontrolled nausea you will become dehydrated. This can make the feeling of nausea worse. Again, let your nurse or doctor know that you are having difficulties. Most of the time we will ask you to come in for intravenous hydration and nausea medications will be given.

We do recommend that you drink at least 2 quarts of fluid a day during chemotherapy treatment. Some recommendations are:

- Limit your caffeine intake to 1-2 beverages a day (caffeine is a diuretic and causes dehydration).
- You do not have to drink just water. Other fluids like juices, broth and sports drinks are okay.
- Frozen food items like popsicles, fruit bars, and other frozen fruits are good for hydration and nutrition.
- Broths, soups, jell-o and puddings can also count toward you fluid intake.

THE GASTRONINTESTINAL SIDE EFFECT OF LOSS OF APPETITE

Sometimes patients on chemotherapy find their stomach is upset or they just do not feel like eating after taking their medication due to changes in taste.

It may be helpful to:

- Eat small, frequent meals
- Eat with other people
- Include foods you especially like
- Use dietary supplements such as milkshakes high in protein and calories.
- Take a multiple vitamin

Make sure you tell your doctor or nurse if loss of appetite is a problem!

Experiencing an alteration in your taste often occurs during your chemotherapy treatment.

It can be a direct result of chemotherapy, an oral infection, dry mouth, or a tumor in that area. Some of the changes you may experience are:

- A decrease in tolerance for sour or bitter tastes, which may make eating pork, beef, chocolate and tomatoes less appetizing.
- An increase or decrease in the tolerance for sweets.
- An increase in desire for salt.
- The presence of medicinal or metallic taste in the mouth.

THE GASTROINTESTINAL SIDE EFFECT OF DIARRHEA

Chemotherapy may cause your bowel movements to become loose or watery. One to two loose bowel movements a day are okay. However, if your bowel movements are accompanied by cramping, fever, or the frequency increases to 5-8 in a 24-hour period, you need to contact your nurse or doctor.

For the patient with a colostomy, you need to monitor the frequency of bag changes to assess for severe diarrhea.

You may not treat yourself at home for diarrhea. Your nurse or doctor must be told if you are having problems. Do not use anti-diarrheal medications, until your nurse or doctor says that it is okay to use this type of medication.

Dietary foods to try and may help alleviate diarrhea are:

- The *BRAT* diet or eating **Bananas, Rice, Applesauce** and **Toast**.
- Avoiding high fiber foods like raw fruits and vegetables and/or bran.
- Drink plenty of extra fluids.

THE GASTROINTESTINAL SIDE EFFECT OF CONSTIPATION

Certain chemotherapy agents and medications used for pain can cause constipation. Your doctor or nurse will tell you if constipation is likely to be a problem. If you are constipated, it may be helpful to:

- Eat high fiber foods like bran cereal, fruits, and vegetables.
- Prune juice
- Drinking extra fluid

***If you have constipation, abdominal pain, bloating and vomiting you must call your nurse or doctor immediately. This could mean you are experiencing a serious condition called a "bowel blockage".*

The doctors recommend the following regimen for treating constipation with over the counter medications:

1. **Senakot**, take as directed on packet or the instructions given to you by your doctor or nurse.
2. **Milk of Magnesia**, take as directed on the bottle or packet.
3. **Magnesium Citrate**, only take ½ a bottle and follow it with a large glass of water.

****Do NOT wait more than 3 days to start dealing with your constipation. If the above medications do not work be sure and let your doctor or nurse know of your condition.**

****You are not allowed to use any enemas or suppositories to alleviate constipation while you are on chemotherapy due to increased risk of infection in the rectal area.**

EFFECTS ON THE BONE MARROW

1. White blood cells

2. Red blood cells

3. Platelets

EFFECTS ON THE BONE MARROW

New blood cells are formed every day to replace the ones that “wear out” they are formed in the bone marrow (which is found inside your bones).

Chemotherapy can produce side effects in the blood by interfering with the formation of new cells...

- **White Blood Cells (WBC's):** these help fight off infectious diseases.
- **Red Blood Cells (RBC's):** these carry oxygen to all parts of the body.
- **Platelets:** these help your blood to clot to prevent bleeding after injury.

While you are on chemotherapy, your doctor will have blood tests done to see whether your blood cells are high, normal or low. If your blood cell counts are too low, your chemotherapy will be held until your levels come up to an acceptable level.

The tools the nurses and doctors will use to see if your blood cells are high, normal, or low is called a “Complete Blood Count” (CBC). This is a lab test.

****Whole on chemotherapy you must have a weekly lab test done before receiving chemotherapy. You will not receive your chemotherapy unless this is done. (See sample of CBC on the following page).**

Lab example

Test	Results	Abnormal	High/Low	Normal Range*
<i>CBC with differential</i>				
RBC*		2.8	L	4.0-5.2 M/ mm³
Hemoglobin		8.8	L	12-16 gm/dl
Hematocrit		27.3	L	36-46%
Platelet count**		36	L	130-400 0K/mm³
WBC***		2.3	L	4.5-11.0K/mm³
MCV		108.8	H	80-100fl
MCH		37.4	H	26-34 pg
MCHC	34.6		Normal	33-36 dl
RDW		16.1	H	11.5-14.5%
Differential				
MPV	8.6		Normal	
Neutrophil %	42.0		Normal	
Lymphocyte %		52.9	H	
Monocyte %		1.7	L	
Eosinophil %	32.1		Normal	
Basophil%	0.3		Normal	
Neutrophil#***		1.0	L	1.8-7.7
Lymphocyte #	1.2			#
Monocyte#	0			#
Eosinophil#	0.1			#
Basophil#	0			#

Anemia is low blood cells

Thrombocytopenia

Neutropenia

*Combination ***RBC, Hemoglobin, and Hematocrit*** will show **anemia** if counts are low.

*****Platelets*** are needed to prevent abnormal bleeding if low it will result in **Thrombocytopenia**.

******WBC's*** are needed to fight infection and are broken down into specific infection fighters,

Neutrophil# are what we watch. If these are low it will result in **Neutropenia**.

EFFECTS ON THE WHITE BLOOD CELLS

White blood cells (WBC) are important in preventing, infectious diseases. A healthy total of white blood cells ranges from 4,000 to 12,000 K/mm³ (equals a tiny drop of blood).

There are five different kinds of white blood cells in our body and when added together they give us the total amount of white blood cells (WBC's).

1. Neutrophils
2. Lymphocytes
3. Monocytes
4. Eosinophils
5. Basophils

Each of these cells has a different way of protecting our body against infection. The white blood cells that we are most interested in when giving chemotherapy are you neutrophils. Refer to the sample CBC to find out how to check if your neutrophils are high, normal or low. You will find them at the bottom part of the CBC. This part of the lab is often referred to as the "differential".

MOST CHEMOTHERAPY IS KNOWN TO LOWER YOUR WHITE BLOOD CELLS (WBC'S). THIS PUT YOU AT HIGHER RISK FOR GETTING AN INFECTION!

SIGNS AND SYMPTOMS OF AN INFECTION

During your chemotherapy treatments it will be important to pay attention to your body and how you are feeling. Listed below are some side effects that will tell you that you may have an infection:

1. A temperature of 100.4°F / 38° C.
2. Chills (you may not have an elevation in your temperature right away but once the chilling has stopped it may be wise to check your temperature for an increase).
3. Pain or burning when you urinate.
4. A new cough or sore throat.
5. Yellow, brown, or green mucus, wither from you sinuses or from a cough.
6. Diarrhea
7. An area of redness, swelling or pain on your skin, around your rectal area or around an implanted catheter or tube on your body.
8. Tenderness in your mouth or lips with sores. A toothache or swollen gums.

****Out of all the signs and symptoms of infection the one the nurses and doctors want you to really watch for is fever. If your temperature is 100.4 degrees or greater you must call day or night and report it to the nurse or doctor. Do not take Tylenol, Ibuprofen or Aspirin if you develop a fever. The only thing you must do is call your nurse or doctor!**

EFFECTS ON THE RED BLOOD CELLS

Red blood cells (RBC's) are made up of oxygen and iron molecules. Their main function is to supply the body with energy.

If your red blood cell count is low, your doctor might tell you that you are anemic. Some of the side effects that you may feel are:

1. Being more tired than usual
2. Dizzy
3. Chilly
4. Short of Breath
5. Weak
6. Feeling as if your heart is racing, especially when you do any sort of physical activity.

Be sure to tell your doctor or nurse if you have any of these problems. Again this lab will be monitored every week while you are on chemotherapy. Referring to the sample lab near the top, look for the words hemoglobin and hematocrit. These two labs will let you know if you are anemic.

If your red blood cells get too low you may need a blood transfusion. There is also medication to help stimulate your body to make new red blood cells a little faster to replace what you have lost.

EFFECTS ON THE PLATELETS

Platelets help your blood to clot and prevent bleeding. If your platelet count is low, you may bruise more easily or bleed more often and longer than usual.

Signs of low platelets are:

1. Bruises (black and blue marks)
2. Small red spots under the skin (petechiae)
3. Wounds that bleed longer than usual
4. Blood in your urine
5. Bleeding gums

Tell your doctor or nurse if you have any of these problems. Again, this lab will be monitored every week while you are on chemotherapy. Referring to the sample lab once more, look for the ***platelet count*** in the middle of the lab. This value will let you know if your platelets are low. On the following page is an instruction sheet for you to keep at home.

****The nurse will call and review these precautions if your platelet count gets to a worrisome level.**

PRECAUTIONS TO TAKE WHEN YOUR PLATELET COUNT IS LOW

When your platelet count drops below 50,000 you are considered to have thrombocytopenia (low platelets). You will know if your platelets are low because you will get your labs done weekly and the nurse will call you to give you the following precautions.

1. Avoid any contact sport or activities that can cause a bleeding injury whether internally or externally.
2. Do not work with sharp instruments such as knives, chain saws, scissors, axes, lawn mowers or anything that could cause a bleeding injury.
3. Use an electric razor to shave not a straight razor.
4. Avoid Aspirin, naproxen (Aleve), Ibuprofen (Motrin, Advil) or any products containing these elements, these products tend to “thin the blood”.
5. Use daily stool softener to avoid constipation. Straining to have a bowel movement could cause a hemorrhoid to bleed, rectal bleed or a bleed in your brain due to any weakened vessels that could rupture due to you having to strain to have a bowel movement.
6. Avoid alcohol since it also acts to “thin the blood”.
7. Use anti-nausea medicines for any nausea or vomiting to prevent any bleeding from your esophagus.
8. Use hemorrhoid creams and sitz baths to minimize known hemorrhoid problems to prevent bleeding.
9. Use humidifiers or vaporizers (cool mist only) to prevent nosebleeds.
- 10. Call office immediately for any bleeding that occurs. *If bleeding is more than half a cup, you must report to the emergency room immediately!***
11. Call the office if you fall or hit your head in any way.
12. Wear your seatbelt when you are in a vehicle.

OTHER LESS COMMON SIDE EFFECTS

Other less common side effects that occur with specific medicines include:

1. Changes in skin color.
2. Changes in heart function (your doctor will be ordering tests such as electrocardiograms, echocardiograms, MUGA scans) to check for this.
3. Changes in lung function (your doctor will be ordering tests like Chest X-Ray or Pulmonary Function Tests (PFT's)) to check for this.
4. Changes in the color of your urine (with certain medicines your urine may look red, orange, pink, or green).
5. Blood in your urine (for this notify your doctor or nurse).
6. Soreness or irritation of your veins (notify your doctor or nurse if this occurs).

****Remember, your doctor and nurses are here to help you.**

Please do not hesitate to ask questions, and share your feelings or concerns.

SEXUALITY AND CHEMOTHERAPY

Infertility: Some chemotherapies cause infertility. Your doctor can refer you to a sperm/egg banking organization before your therapy begins if you want to have children after chemotherapy.

Sexual side effects: Over half of patients notice a loss of sexual desire following chemotherapy. Chemotherapy can make you very tired and decrease your desire for sex. Surgical alterations can also be a cause for decreased sexual interest.

Men who have had cancer in the pelvic areas are at higher risk for sexual problems than men who have had cancers in other areas of the body. Surgical alterations can also change the desire for sex related to changes in body image.

MEN may experience some of the following:

- The inability to maintain an erection
- Climaxing
- Lack of fluid after orgasm (dry climax)
- Weaker orgasm, not lasting as long
- Loss of libido (or desire to have sex)
- Pain

Women who have had cancer in the pelvic areas are at higher risk for sexual problems than men who have had cancers in other areas of the body. Surgical alterations can also change the desire for sex related to changes in body image. There are water-based lubricants, vaginal creams, and Vitamin E that may be recommended by your doctor.

WOMEN may experience some of the following:

- Difficulty reaching climax
- Loss of desire for sex
- Pain during penetration
- Reduce size of the vagina
- Vaginal dryness
- Mastectomy (Breast Surgery)
- Hair loss
- Chemotherapy induced menopause

If you are having concerns related to sexual problems, be sure to let your doctor or nurse know. There are many over the counter products that can help. Be sure to check with your doctor before using any herbal remedies, as some cause serious interactions with your chemotherapy. Hormones (including plant estrogen use, i.e. Flaxseed oil) **should not** be started unless approved by your doctor.

Sexual intercourse: Sex is not prohibited during chemotherapy. There may be times, however, when your white blood cells are low. Sex may be restricted until your blood counts return to normal, usually in about a week. Your nurse will notify you when you need to follow restrictions because of low white blood cells. Birth control is essential to prevent pregnancy (women) or creating a pregnancy (men) while on chemo. Condoms should always be used to protect your partner, whether the cancer patient is male or female.

Remember to include your partner in any and all concerns you may have during this time regarding this issue. Maintaining an intimate relationship is very important and encouraged.

Resources: contacting your doctor or nurse will provide you with answers to specific questions or concerns. We are not here to embarrass you. We are here to help, so please do not hesitate to call and ask questions.