



Provincial Health Services Authority

For the Patient: FCR

Other Names: LYFCR, Treatment of chronic lymphocytic leukemia (CLL) or prolymphocytic leukemia with fludarabine, cyclophosphamide and rituximab

LY = LYmphoma (tumour group)

F = Fludarabine (also known as FLUDARA®)

C = Cyclophosphamide (also known as PROCYTOX®)

R = Rituximab (also known as RITUXAN®, RITUXAN® SC)

Uses:

- FCR is a drug treatment given for patients with chronic lymphocytic leukemia (CLL), small lymphocytic lymphoma (SLL) or prolymphocytic leukemia who require treatment to relieve symptoms.

Treatment Plan:

- Your treatment plan consists of several (up to 6) chemotherapy cycles. A cycle of treatment is 28 days. Your drugs/treatment are given for the first three days of each cycle.
- For each cycle you will have three chemotherapy drugs. Two drugs (fludarabine and cyclophosphamide) are pills taken by mouth for 3 days although they may also be given by injection into a vein (intravenously) if needed. Rituximab can be given by injection into a vein or under the skin (subcutaneously or SC).
- If you are taking the two drugs by mouth, the first day (Day 1) will take about 5 hours. Days 2 and 3 are pills taken at home. If rituximab is well tolerated intravenously, the next cycle may be given under the skin (SC) and subsequent cycles will take half an hour.
- If you are receiving all three drugs intravenously, the first day (Day1) will take 1.5 hours, the second day (Day 2) will take about 6 hours and the third day (Day 3) will take 1.5 hours. If rituximab is tolerated intravenously, subsequent cycles will be take about 1.5 hours each time.
- The day before each scheduled chemotherapy treatment you will have a blood test and an appointment with your doctor and/or nurse to assess how you are tolerating your treatment.

Drugs:

- Three chemotherapy drugs (fludarabine, cyclophosphamide, and rituximab) will be given at each cycle. Fludarabine and cyclophosphamide are pills taken daily by mouth for 3 days, although they are also available intravenously for patients who are unable to swallow them. Rituximab is given intravenously or SC once per cycle and may be given on the same day (Day 1) after the first cycle.
- You will be given a prescription for anti-nausea pills to help prevent nausea and vomiting. Fill this prescription at your drugstore. Please also buy acetaminophen 325 mg and diphenhydramine 25 mg tablets as you will need these prior to rituximab.
- During the rituximab infusion, the nurse might monitor your heart rate, breathing and blood pressure.

Instructions:

- Bring your anti-nausea drugs, and the acetaminophen and diphenhydramine with you to take before each IV treatment. The nurse will instruct you when to take your pills. You may also need to take anti-nausea pills at home after the chemotherapy. It is easier to prevent nausea than treat it once it has occurred, so follow directions closely.
- Call your cancer doctor immediately (day or night) at the first sign of any infection but especially if you have a fever over 38°C or 100°F.
- Check with your doctor or pharmacist before you start taking any new drugs. Other drugs such as barbiturates, digoxin (LANOXIN®), ciprofloxacin (CIPRO®) and similar antibiotics, phenytoin (DILANTIN®), carbamazepine (TEGRETOL®), ketoconazole (NIZORAL®) and similar antibiotics, nifedipine (ADALAT®), blood pressure medications and warfarin (COUMADIN®), may interact with FCR.
- **We may ask you to skip your dose of blood pressure medication 12 hours before and during rituximab treatment.**
- **Drink** 8-12 cups of liquid a day on the day of your treatment and the day after your treatment. **Empty your bladder** (pass urine) every 2 hours while you are awake and at bedtime for at least 24 hours after your treatment. Your doctor may also tell you to get up in the night to empty your bladder. This helps prevent bladder and kidney problems.
- You may drink small amounts of alcohol, as it will not affect the safety or effectiveness of your treatment. Drinking alcohol may increase the risk of some side effects of prednisone; discuss this with your doctor or pharmacist.
- Tell other doctors or dentists that you are being treated with FCR chemotherapy before you receive any treatment from them.
- Tell doctors, nurses, and pharmacists that you are being treated with rituximab subcutaneous injection before you receive other subcutaneous injections. Wait until at least three days before injecting other medications into the same injection site as rituximab.
- Use effective contraception (birth control) if you could become pregnant or if your partner could become pregnant. Becoming pregnant while on chemotherapy will likely harm the baby. Do not breast feed.

Serious Side Effects:

Unexpected and unlikely side effects can occur with any drug treatment. The ones listed below are particularly important as they are directly related to the common actions of the drugs in your treatment plan.

- **Infection:** The number of white blood cells that help fight infections will be lowered by the treatment. Your blood count is expected to return to normal by Day 1 of the next cycle. If your white blood cell count becomes very low you could get a serious infection. **If you have a fever over 38°C or 100°F, call your cancer doctor immediately (24 hours a day) or go immediately to your nearest Hospital Emergency and tell the doctor that you are on chemotherapy. It is recommended you have a working thermometer at home.**
- **Allergic Reaction:** Rituximab can cause allergic type reactions during or hours after your treatment. Report any light-headedness or dizziness, difficulty breathing, shortness of breath, cough, rash, skin flushing, itchy skin, tickle in throat, or chest tightness to your chemotherapy nurse immediately.
- **Bleeding Problems:** If you develop black tarry stools, blood in your urine, pinpoint red spots on the skin, or prolonged nose bleeds report them immediately to your doctor or nurse.
- **Early menopause:** If you are a woman still having menstrual periods, FCR may cause your ovaries to stop working, resulting in menopausal symptoms (such as hot flashes) and infertility. Your periods may stop. This may be permanent especially if you are 40 years of age or older.
- **Bladder problems:** Rarely, cyclophosphamide may cause damage to the lining of the bladder. Report any signs of blood in urine, frequent need to pass urine, or pain on passing urine to your doctor immediately.

Common Side Effects and Management:

SIDE EFFECTS	MANAGEMENT
Your white blood cells may decrease after your treatment has started. Normal white blood cells protect your body by fighting bacteria (germs) that cause infection. When they are low, you are at greater risk of having an infection.	To help prevent infection: <ul style="list-style-type: none">• Wash your hands often and always after using the bathroom.• Take care of your skin and mouth.• Avoid crowds and people who are sick.• Call your doctor immediately at the first sign of an infection such as fever (over 100°F or 38°C by an oral thermometer), chills, cough, or burning when you pass urine.

SIDE EFFECTS	MANAGEMENT
<p>Nausea and vomiting can occur with this treatment and you will need to take anti-nausea medications before and after your chemotherapy.</p>	<p>You will be given a prescription for anti-nausea drugs to take before your IV treatment and later at home.</p> <ul style="list-style-type: none"> • It is easier to prevent nausea than treat it once it has occurred, so follow directions closely. • Refer to the following pamphlets: <i>For the Patient: Managing Nausea; Chemotherapy & You; Food choices to help control nausea*</i>
<p>Fevers and chills may occur especially during the first Rituximab treatment.</p>	<ul style="list-style-type: none"> • You will take acetaminophen (eg, TYLENOL®) and diphenhydramine (eg, BENADRYL®) before and every 4 hours during your rituximab treatment. Tell your nurse immediately if you have a reaction during treatment.
<p>Hives, a type of allergic reaction, may occur. Hives are red or pale raised patches on your skin and are usually itchy. These reactions usually occur during or up to 24 hours after the infusion.</p>	<ul style="list-style-type: none"> • Take diphenhydramine (eg, BENADRYL®) 25 or 50 mg up to 4 times a day. (Note: diphenhydramine causes drowsiness)
<p>Redness, swelling, pain, or tenderness commonly occurs where the needle was placed when rituximab is injected under the skin.</p> <p>These reactions typically occur within 1-2 days and usually disappear on their own. Reactions are less common with later treatments even if you have a reaction with the first treatment.</p>	<ul style="list-style-type: none"> • Apply cool compresses for 15-20 minutes several times a day after the injection. • Tell your doctor or your nurse at the next visit if these reactions are very painful or last longer than 2 days.
<p>Loss of appetite may sometimes occur and may persist for 1-2 months after discontinuation of fludarabine.</p>	<ul style="list-style-type: none"> • Try the ideas in Food Ideas to Help with Decreased Appetite.*
<p>Muscle or joint pain may sometimes occur a few days after your treatment</p>	<ul style="list-style-type: none"> • You may take acetaminophen (e.g., TYLENOL®) for mild to moderate pain. Tell your doctor if the pain interferes with your activity.

SIDE EFFECTS	MANAGEMENT
<p>Hair loss is common and may begin within a few days or weeks of treatment. Your hair may thin or you may become totally bald. Your scalp may feel tender. You may lose hair on your face and body. Your hair will grow back once your treatments are over and sometimes between treatments. Colour and texture may change.</p>	<ul style="list-style-type: none"> • Use a gentle shampoo and soft brush. • Care should be taken with the use of hair spray, bleaches, dyes and perms. • Cutting your hair short or shaving your head may be more comfortable • Apply mineral oil to your scalp to reduce itching • Protect your scalp with a hat, scarf or wig in cold weather. Cover your head or apply sunblock on sunny days • If you lose your eyelashes and eyebrows, protect your eyes from dust and grit with a broad-rimmed hat and glasses. • Ask your nurse about information on wigs and head coverings as some extended health plans will pay part of the cost of a wig.
<p>Mouth Sores may occur a few days after treatment. Mouth sores can occur on the tongue, gums and sides of the mouth or in your throat. Mouth sores or bleeding gums can lead to an infection.</p>	<ul style="list-style-type: none"> • Brush your teeth gently after eating and at bedtime with a soft toothbrush. If your gums bleed use gauze instead of a brush. Use baking soda instead of toothpaste. • Try baking soda mouth rinses (using ¼ tsp baking soda in 1 cup warm water) and rinse several times a day. Try ideas in <i>Easy to chew, easy to swallow food ideas*</i>. • Tell your doctor about a sore mouth, as your chemotherapy doses may need to be decreased if mouth sores are severe.
<p>Fatigue is common especially in the first 1-2 weeks after your treatment. As the number of cycles increases fatigue may get worse.</p>	<ul style="list-style-type: none"> • Your energy level should slowly improve (weeks – months) after your final treatment is completed. • Refer to the pamphlet '<i>Your Bank to Energy Savings-How people with cancer can handle fatigue</i>'

SIDE EFFECTS	MANAGEMENT
<p>Your platelets may decrease after your treatment has started and will return to normal with time. Platelets help your blood clot if you cut yourself. You may bruise or bleed more easily than usual.</p>	<p>To help prevent bleeding problems:</p> <ul style="list-style-type: none"> • Try not to bruise, cut or burn yourself. • Clean your nose by blowing gently; do not pick your nose. • Avoid constipation • Avoid ASA (eg, ASPIRIN®) unless recommended by your doctor. • For minor pain use acetaminophen (TYLENOL®). Take your temperature prior to taking acetaminophen-containing products. • Do not take common painkillers such as ibuprofen (eg, ADVIL®, MOTRIN®)
<p>Diarrhea may sometimes occur.</p>	<p>To help diarrhea:</p> <ul style="list-style-type: none"> • Drink plenty of liquids. • Eat and drink often in small amounts. • Avoid high fibre foods as outlined in Food Ideas to Help with Diarrhea During Chemotherapy.* • Note: If lactose in milk usually gives you diarrhea, the lactose in the tablet may be causing your diarrhea. Take LACTAID® tablets just before your fludarabine dose.
<p>Numbness or tingling of fingers or toes may sometimes occur due to fludarabine. This will slowly return to normal once your treatments are over. This may take several months</p>	<ul style="list-style-type: none"> • Be careful handling sharp, hot or cold objects. • Tell your doctor at your next visit if you develop numbness or have trouble picking up small objects, doing up buttons or writing.

* Available through your nurse

If you experience symptoms or changes in your body that have not been described above but worry you, tell your doctor about them at the time of your next visit. If any symptoms are severe, contact:

_____ at telephone number _____

If you have symptoms that are severe or need emergency services, go to your local hospital's Emergency Department.