

# Ramucirumab

Names	The generic drug name is ramucirumab (RA-myoo-SIR-yoo-mab). Cyramza® is a brand name. There may be other names for this medication.
Why am I Taking Ramucirumab and How is it Given?	Ramucirumab is given to treat stomach (gastric) cancer, gastroesophageal junction cancer (where the stomach meets the esophagus), metastatic colon cancer, and non-small cell lung cancer. Your medicine will be given by infusion into a vein (intravenous or IV), usually in your arm, wrist, hand or chest.
How Does it Work?	<p>Ramucirumab is a type of targeted therapy called a monoclonal antibody. Cancer is a group of diseases in which abnormal cells multiply without control. Traditional chemotherapy agents identify cancer cells by their rapid rate of multiplication – and then attack those cells. Unfortunately, it also attacks normal cells that multiply quickly. Targeted therapy identifies other differences between normal cells and cancer cells, and then uses that difference to attack the cancer cells, sparing more of the normal cells.</p> <p>Ramucirumab works like your body's natural antibodies – by recognizing and attaching to a specific protein (antigen) antigen on the cancer cell. The antibody and antigen fit together like a lock and key. When they lock together, it signals the immune system to destroy that cell.</p> <p>Ramucirumab targets the protein, VEGF (vascular endothelial growth factor). VEGF plays an important role in the formation of new blood vessels, a process called angiogenesis. Ramucirumab is an <i>anti-angiogenic agent</i>. It interferes with the cancer's ability to build the new blood vessels it needs to get oxygen and nutrients. This may slow the growth and spread of tumors.</p>
What Should I Tell My Doctor Before I Begin?	<p>Tell your doctor if you:</p> <ul style="list-style-type: none"><li>• have had an allergic reaction to ramucirumab or have allergies</li><li>• have high blood pressure, a wound that has not healed, thyroid disease, liver disease, or a condition affecting your heart or blood vessels</li><li>• are pregnant or breast-feeding</li></ul> <p><b>This drug may interact with other medications. Tell your doctor and pharmacist about <u>all</u> prescription or over-the-counter medications, vitamins, herbal or diet supplements that you are taking.</b></p>

## What Are Some Possible Side Effects?

- High blood pressure (hypertension)
- Diarrhea
- Headache
- Low sodium (hyponatremia)
- Low white blood cell count (neutropenia)
- Bleeding problems such as nosebleeds, coughing blood, or black, tarry stools
- Blood clots or damage to your nervous system (sudden or severe headaches, problems with vision, speech, or walking)
- Fatigue
- Mouth problems: Dry mouth, mouth sores
- Skin problems: Burning, crawling, itching, numbness, tingling; rash; redness of the face, neck, arms, upper chest
- Fever, shivering, sweating, chills
- Infusion-related reactions (tremors, back pain, back spasms, chills, flushing, shortness of breath, wheezing, nausea, headache, fast heartbeat, low blood pressure): Usually occurs during or after first or second infusion.
- Slow wound healing or closed wounds that reopen: This drug should not be started for at least 28 days after you have healed from surgery, and it should be stopped before you have surgery.
- Hand-foot syndrome (Redness/irritation of palms of hands or soles of feet)
- Nausea, vomiting
- Infertility (women), birth defects

## How Can I Manage These Side Effects?

- Drink 2-3 quarts of water every day unless your doctor tells you to limit your fluids. This is even more important in the days before and after chemo. This will help flush out the medications and help prevent dehydration and constipation. Try to drink a variety of fluids to help provide the calories, sodium (salt), and other electrolytes your body needs. Broths are a good source of sodium, and some sports drinks provide additional electrolytes.
- Blood pressure: Check your blood pressure regularly with a home blood pressure monitor or have it checked at your pharmacy. Keep a log of your readings and let us know if your blood pressure is unusually high.
- Headaches: Check with your doctor before taking any medication or product for this or any other side effect.
- Diarrhea: Loperamide (Imodium®) is available over the counter. You can take 2 tablets after the first episode of diarrhea, followed by 1 tablet (2mg) after each loose stool as needed. Do not take more than 8 tablets (16mg) in a 24-hour period. Call the clinic if this does not provide relief within 24 hours.
- To help avoid infections, stay away from people with colds, flu, or other

infections. Wash your hands often. Be careful when handling sharp objects. Stay away from rough sports or other situations where you could be bruised, cut, or injured. Use an electric razor. Talk to your doctor before you have any vaccinations, such as the flu shot.

- Low platelets/preventing nose bleeds: Keep the nostril moist by using a humidifier or not increasing the temperature too high at home.
- Fatigue: Eat well and stay out of bed as much as possible during your treatment to stay strong. If you feel fatigued, take rest periods throughout the day, and try to limit your activities.
- Mouth care is very important while taking this drug. Rinse your mouth with a mixture of ½ teaspoon of baking soda in 8 ounces of water after every meal and at bedtime. Brush your teeth and gums often with a soft toothbrush. (Soften it further by running it under warm water before brushing.) Avoid smoking, alcohol, and mouthwashes that contain alcohol.
- Skin care: Use a sunblock with SPF 30 or higher that protects against both UVA and UVB rays when you are outdoors, even if it is just for a short time. Keep your neck, chest, and back covered. Wear sunglasses and protective clothes (brimmed hat, long sleeves, etc.) when in the sun. Do not use tanning beds. If you develop a rash, keep the area clean and dry and check with your doctor before using any creams or ointments on the area.
- Hand-foot syndrome: To help prevent hand-foot syndrome: frequently apply moisturizer to the palms of your hands and the soles of your feet. Reduce friction and heat exposure to your hands and feet.
- Nausea, vomiting: To help prevent nausea, avoid fried, spicy, and fatty foods on the days you receive chemo and for 2-3 days afterwards. Eating small, frequent meals may help. If you have nausea, try foods and drinks that are 'easy on the stomach' - bland foods, ginger ale, dry crackers, and toast.
- Though this drug can affect fertility, do not assume you can't get pregnant or father a child. Do not get pregnant during treatment and for at least 3 months after treatment ends. Use effective birth control. A barrier method of contraception is recommended, such as a condom or diaphragm. Ramucirumab can harm the fetus.
- Keep all your appointments with the lab and your doctor.

When Should I  
Call the  
Doctor?

**Call 911 or go to the nearest hospital emergency department if you have life-threatening symptoms such as:**

- signs of severe allergic reaction: Swelling or tingling in your face, tongue, mouth, or throat; chest tightness; wheezing; trouble breathing or swallowing; dizziness, shortness of breath; heart palpitations; or hives.
- signs of heart attack: Severe chest pain or pressure, pain spreading to jaw or

shoulder, nausea, sweating

- signs of stroke: Sudden numbness or weakness in face or only on one side, severe headache, confusion, trouble speaking or understanding speech, trouble seeing, problems with balance or coordination

Please let us know if you go to the emergency room or are admitted to the hospital.

**Call your doctor immediately if you have:**

- any sign of infection: **Fever of 100.4°F (38°C) or higher**, chills, cough, sore throat, pain or burning upon urination; redness or tenderness along a vein, at an IV site, or at any other wound or skin irritation
- signs of a blood clot: Pain, tenderness, warmth, redness, or swelling in only one leg or arm; sudden, severe headache; trouble breathing (rapid, painful)
- Symptoms of rare, but serious, side effects:
  - Gastrointestinal ulcerations (a hole in your stomach or intestines): Watch for stomach pain, constipation, nausea, vomiting, and fever.
  - Hypertensive crisis (a severe increase in blood pressure): Watch for severe chest pain, severe headache with confusion or blurry vision, severe anxiety, shortness of breath, nausea, and vomiting.
  - Nephrotic syndrome (kidney damage): Watch for puffy eyes, swelling in ankles or feet, weight gain, foamy or bloody urine, decrease in frequency or amount of urine, increase in blood pressure, increased thirst, loss of appetite, lower back or side pain, nausea/vomiting, and trouble breathing
  - Congestive heart failure (failure of the heart to pump blood well) in people who have a history of treatment with anthracycline chemotherapy (doxorubicin, daunorubicin, etc.) or radiation therapy to the chest: Watch for fatigue, swelling in ankles, legs, or abdomen; shortness of breath – particularly when exercising or lying flat.
  - PRES (posterior reversible encephalopathy syndrome): Watch for seizure, headache, nausea, vomiting, blindness, and changes in your thinking.
  - Severe bleeding: Bleeding that lasts more than 10-15 minutes or that causes dizziness; black or bloody stools; vomit that is bloody or that looks like coffee grounds; or blood in your urine -

**Call your doctor as soon as possible if you have:**

- headache, nausea, or vomiting not relieved by prescribed medication
- vomiting more than 3 times in one day
- unexplained weight gain
- a wound that won't heal