

Pomalidomide

The POMALYST® Program

Overview

Multiple myeloma is a type of cancer that begins in plasma cells in bone marrow. Plasma cells are white blood cells that make antibodies. The abnormal plasma cells build up in the bone marrow and sometimes in the solid part of the bone.

Pomalidomide (brand name Pomalyst®) is approved to treat certain patients with multiple myeloma, but only under a restricted distribution program.

Before you start taking this drug, you and your loved ones should read the important information in this brochure about the medication, side effects, and the rules you must follow if you choose pomalidomide, including the requirement to use birth control.

Safety

Pomalidomide is similar to the drug thalidomide and can cause the same life threatening birth defects. Both medications are approved by the Food and Drug Administration (FDA) to treat multiple myeloma within restricted distribution programs. For pomalidomide, the program is called Pomalyst REMS™ (Risk Evaluation and Mitigation Strategy). The program is in place to make sure that everyone is following the established safety guidelines.

Only providers (doctors, nurse practitioners, etc.) and pharmacies certified by this program can write prescriptions for this medication or dispense it.

To be considered for pomalidomide:

- you must have already tried at least 2 other therapies, including lenalidomide and bortezomib
- your disease must have progressed within 60 days of completing your last therapy
- you must enroll in the Pomalyst REMS program and agree to comply with the program's requirements (detailed in this brochure)

Your healthcare provider will counsel you about the risks and benefits of this therapy. ***You must sign a consent form stating you understand the information explained by your doctor before you can receive the medicine.***

How does pomalidomide work?

Pomalidomide helps the bone marrow to produce normal blood cells and kills abnormal cells in the bone marrow. It has several effects (actions) on your body, though it is not clear exactly how it works against cancer cells. The chart shows some of pomalidomide's actions and how they may work against cancer cells.

Pomalidomide...	Resulting in...
Interferes with the cells' ability to create new blood vessels (angiogenesis)	Cancer cells that do not get the nutrients they need to grow, reproduce, and survive
Boosts certain types of immunities (T cell-mediated and NK cell-mediated)	Increased attacks on the cancer cells by your immune system
Affects genes that control cell growth, reproduction, and the timing of normal cell death	Cancer cells that have a harder time growing, reproducing, and surviving

How do I take pomalidomide?

- ✓ Pomalidomide is a capsule that you take by mouth. **Do not break, chew, or open the capsules.** Do not handle the capsules for longer than necessary.
- ✓ Take it on an empty stomach either 2 hours before eating, or 2 hours after eating.
- ✓ You can take it with water.
- ✓ Try to take it about the same time each day of treatment.
- ✓ Missed dose: If it has been less than 12 hours since you were due to take your medication, take it as soon as you remember. If it has been more than 12 hours, skip your next dose. **Do not take 2 doses at the same time.**
- ✓ Your doctor may prescribe dexamethasone, a steroid medication, to take along with pomalidomide.
- ✓ Improvement usually occurs in about 2 months, but you may feel better anywhere from 2 weeks to 8 months after therapy has begun.

Dose and schedule

Your healthcare providers will discuss your individualized dosing and treatment plan with you. Typically, pomalidomide is taken once a day on days 1 through 21 of a 28 day cycle. This means you take the medication for 21 days in a row and then you do not take it for 7 days. At the end of the 7 days, you begin a new cycle. On this schedule, you would take medication on the days that are shaded below.

Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
Day 8	Day 9	Day 10	Day 11	Day 12	Day 13	Day 14
Day 15	Day 16	Day 17	Day 18	Day 19	Day 20	Day 21
Day 22	Day 23	Day 24	Day 25	Day 26	Day 27	Day 28
Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7 (etc.)

What do I need to tell my doctor before taking pomalidomide?

Tell your doctor if you:

- are allergic to pomalidomide, thalidomide, or lenalidomide
- have kidney or liver disease
- smoke cigarettes
- are breastfeeding
- are not willing to use birth control during treatment
- have any other medical conditions

What should I know before taking pomalidomide?

- This medicine can cause serious or life-threatening birth defects in unborn babies.
- Do not get pregnant or father a child for 4 weeks before starting treatment, during treatment (even if on a treatment break), and for 4 weeks after treatment ends.
- Both males and females must receive counseling from their provider about the risks of this medication, especially in regard to pregnancy, and they sign a POMALYST® Patient-Physician Agreement.
- **Females Who Cannot Become Pregnant** must sign the POMALYST® Patient-Physician Agreement form that says you are currently not pregnant and are not able to get pregnant because either you have been in menopause (no periods) for 24 months - **OR**- you have had your uterus and/or both of your ovaries surgically removed.
- **Minors:** A parent or guardian must confirm that the child will not be engaging in heterosexual sexual contact for at least 4 weeks before therapy, during therapy, and for at least 4 weeks after therapy, and that a female child has not yet begun menstruation.
- **Females who could become pregnant (even if it is unlikely):**
 - Must have an initial pregnancy test within 10-14 days of starting pomalidomide
 - Must have a pregnancy test every week for 4 weeks. After that, they must have a pregnancy test every 4 weeks if their menstrual cycle is regular, or every 2 weeks if they have irregular periods. (If there is a missed period or have unusual bleeding, they will need to have a pregnancy test and get counseling.)
- **Males must:**
 - use a latex or synthetic condom during any sexual contact with a pregnant female or a female that can become pregnant while on pomalidomide and for 4 weeks after treatment ends – **even if they have had a vasectomy**
 - NOT have unprotected sexual contact with any woman who is, or who could become, pregnant
 - NOT donate sperm or blood while taking this medication and for 4 weeks after treatment ends
 - Agree to complete surveys, starting with
- Both males and females must agree to use 2 methods of “reliable birth control” (1 highly effective method and 1 additional effective method – see chart) during treatment and for 4 weeks (28 days) after treatment ends -**OR**- agree to completely abstain from heterosexual activity. If you cannot use an IUD or hormonal methods, talk to your doctor.

Highly effective methods (choose 1)	Additional effective methods (choose 1)
<ul style="list-style-type: none"> ▪ Intrauterine device (IUD) ▪ Hormonal methods: birth control pills, patches, injection, vaginal rings, or implants ▪ Tubal ligation (having your tubes tied) 	<ul style="list-style-type: none"> ▪ Latex or synthetic condom (male) ▪ Vasectomy (male) ▪ Diaphragm (female) ▪ Cervical cap (female)

- Note: Do not use any of these less effective forms of birth control because they do not meet the requirements of the Pomalyst program:
 - Natural family planning (rhythm method)
 - Withdrawal
 - Fertility awareness
 - Breast feeding
 - Progesterone-only mini-pills
 - IUD with progesterone
 - Cervical shield
 - Female condoms
- If you become pregnant or father a child during treatment, stop taking pomalidomide right away and call your healthcare provider.
- If you are female and you have had sex with a male without using birth control, stop taking pomalidomide immediately and call your doctor right away.

What are some possible side effects?

Work closely with your healthcare team so you can recognize and keep track of any side effects, even if you do not think they are caused by your medication. Tell your doctors and nurses immediately about any changes you notice in your body.

For some of these side effects, your doctor may adjust your dose or temporarily discontinue your treatment.

Common side effects and how to manage them

Important: Drink 2-3 quarts/liters every day unless your doctor gives you other instructions. This helps flush the medication out of your system and helps prevent dehydration and constipation.

Side Effect	What You Can Do
Fatigue, weakness	<ul style="list-style-type: none"> • Take your medication at bedtime or in the late evening (at least 2 hours after eating). • Take rests during the day, limit your activities, and do an activity at a time of day when you feel a bit more energetic. Learn to ask for and accept help with household and daily chores. • Do not drink alcohol or take medications that cause drowsiness, such as sleeping pills or tranquilizers, unless directed to do so by your doctor. • If you feel sleepy, do not drive a car or operate machinery.

Side Effect	What You Can Do
Low blood cell counts neutropenia (low white blood cells) anemia (low red blood cells) thrombocytopenia (low platelets)	<ul style="list-style-type: none"> • To help avoid infections, stay away from crowds in confined spaces, and people with colds or other infections. Wash your hands often. Talk to your doctor before you have any vaccinations/flu shots. • See above for how to manage fatigue. • Be careful when handling sharp objects. Avoid rough sports or other situations that could cause bruising or injury. Use an electric razor. Be careful when using a toothbrush or dental floss. Your doctor may recommend other ways to clean your teeth and gums if your platelet count is very low.
Constipation	<ul style="list-style-type: none"> • Eat a healthy, high-fiber diet. • Stay active. Exercise regularly, if possible. • If you become constipated, talk to your doctor/nurse about using stool softeners or mild laxatives. Do not take any medications until you have obtained approval from your doctor or nurse.
Nausea	<ul style="list-style-type: none"> • To help prevent nausea, avoid fried, spicy, and/or fatty foods on the days you take pomalidomide. Eating small, frequent meals may help. • If you feel nauseous, try foods and drinks that are ‘easy on the stomach’ or made you feel better when you were sick in the past. This may include bland foods like ginger ale, dry crackers, and toast. • Ask your doctor about medication to help prevent or lessen nausea. Take it as soon as you begin to feel nauseous. It may also help to alternate which medications you take, depending on what works best for you.
Diarrhea	<ul style="list-style-type: none"> • 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. Do not take any medications unless your doctor give the OK.
<p>Other common side effects: shortness of breath, upper respiratory infections, back pain, and fever.</p> <p>If you develop any of these symptoms, contact your healthcare provider.</p>	

Less Common Side Effects

Side Effect	What You Can Do
Peripheral neuropathy (Numbness, tingling, burning, or pain in your hands or feet, or weakness in your legs)	<ul style="list-style-type: none"> Walk/exercise as possible. Keeping active helps maintain the blood flow to your hands and feet. Massage affected areas to help improve circulation and to temporarily dull the pain. Avoid tight-fitting shoes and socks. Tell your doctors/nurses if you experience any of the symptoms above and about any medications you take. They will monitor you on a monthly basis <p>This potentially severe side effect may happen at any time – or even after you have stopped taking pomalidomide. The nerve damage may improve slowly, may go away after treatment ends, or it may be permanent.</p>
Dizziness	<p>You may experience sudden dizziness after standing from a reclining or sitting position</p> <ul style="list-style-type: none"> Sit upright for a few minutes before standing up from a lying or sitting position, and then stand up slowly. Avoid quick position changes. Be sure your doctors and nurses know about any medications you are taking before you start taking thalidomide – especially diuretics and heart or blood pressure medications.
Rash	<ul style="list-style-type: none"> Avoid sun exposure. 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. You may get a rash within the first two weeks of starting treatment. Since a few of these rashes may be signs of a very serious illness, tell your doctor right away if you develop any type of rash. Do not put any creams, lotions, etc. on the rash until you have spoken to your doctor or nurse.
Swelling in feet, ankles, and legs (edema)	Keep your legs elevated if you develop swelling and contact your healthcare provider. This may require additional monitoring.
Decreased appetite	Continue eating when you can, and talk to your healthcare provider if you do not feel you can eat or you do not want to eat. You may need additional nutritional supplementation, such as Ensure® or Boost®
Other less common side effects: confusion, nosebleeds, muscle spasms, joint pain, tremor, itching, headache, insomnia, anxiety/agitation	

This medication may cause changes in the levels of electrolytes and sugar in your blood. Your doctor will take regular blood tests to monitor these levels.

- Low calcium (hypocalcemia) and/or sodium (hyponatremia)
- High calcium (hypercalcemia) and/or potassium (hyperkalemia)
- High glucose [sugar] level in the blood (hyperglycemia)

Blood Clots: Deep Vein Thrombosis (DVT) and Pulmonary Embolisms (PE)

- There is an increased risk of blood clots, DVTs (blood clots in the legs), and pulmonary emboli (blood clots in the lungs) with the use of pomalidomide. The risk is higher if you are also taking chemotherapy, including dexamethasone.
- If the clot occurs in the large, deep veins of your leg (DVT), you may have swelling, tenderness, pain, and redness in that leg or the groin area.
- If a clot breaks off the wall of the blood vessels and travels to the lungs (PE), it can block the blood flow to the lungs and cause shortness of breath and sharp chest pain that gets worse when you take a deep breath.
- **Tell your doctors and nurses IMMEDIATELY if you experience any of these symptoms. If you cannot reach your doctor, go to the emergency room.**

What will I need to do after the last dose of pomalidomide?

- Return any unused pomalidomide capsules to one of the following:
 - the doctor or provider that prescribed the medication for you
 - the pharmacy that dispensed the capsules to you
 - the manufacturer, Celgene
- Do not donate blood for 4 weeks
- Females must not get pregnant for at least 4 weeks
- Males must use a latex or synthetic condom for 4 weeks so they do not father a child
- Males must not donate sperm for 4 weeks.

What else should I know about pomalidomide?

- Don't donate blood while you are taking this drug, or for 4 weeks after you have stopped treatment.
- Do not breastfeed.
- Remember, pomalidomide can cause birth defects or death to unborn babies. It must not be used by females who are able to get pregnant.
- The pregnancy tests before and during treatment with pomalidomide must be done by your doctor. You cannot use home pregnancy tests.
- Do not share this medication with anyone. It may harm them and can cause birth defects.
- Keep your medication in a cool, dry place.

- Do not handle the capsules more than necessary. If you touch a broken capsule or the medicine in the capsule, wash your hands right away with soap or water.
- Not having sex is the only method of birth control that is 100% effective.
- You must talk to your doctor before changing any birth control methods you have agreed to use.
- You must keep this medication away from children.
- Do not smoke cigarettes while taking pomalidomide. Smoking cigarettes during treatment may affect how well pomalidomide works.
- Even if your disease has stabilized or gone into remission, you need to continue to see your healthcare provider regularly for monitoring.
- Watch for new or old symptoms and report them to your doctor.
- Pay careful attention to your overall health – exercise, eat a nutritious diet, get enough rest, and strive to lower stress in your everyday life.
- Learn all you can about multiple myeloma.
- Keep communications open with your healthcare team at Roswell Park.
- Seek support from patient advocacy groups or join the Roswell Online Community at www.cancerconnect.com/Roswellpark
- The Institutional Insight Program, run by the Multiple Myeloma Research Foundation, keeps patients and their caregivers informed about multiple myeloma, new treatments and research. Website: www.multiplemyeloma.org
- The International Myeloma Foundation hosts a toll-free hotline staffed by trained specialists, at 1-800-452-CURE (1-800-452- 2873) in the U.S. and Canada, between 9 am and 4 pm PST. <http://myeloma.org> .
- If you have any concerns or questions about pomalidomide, talk to your doctor or pharmacist.

Glossary

Anemia – A condition marked by low numbers of red blood cells, which carry oxygen

Antibodies – Protein molecules that bind to a foreign substance (antigen) and either destroy it or make it easier for other cells to destroy it

Arsenic trioxide (Trisenox) – An anti-cancer drug to treat multiple myeloma

Basophil – A type of white blood cell involved in inflammation and allergic reactions

Biopsy – Removal of cells or tissues for examination under a microscope

Bone marrow – The soft tissue in the center of most large bones. Bone marrow produces white blood cells, red blood cells, and platelets

Bortezomib (Velcade) – The first of a new class of chemotherapy drugs (proteasome inhibitors) approved as treatment for multiple myeloma

Chemotherapy – The use of medications, often in combination, to stop the growth of cancer cells either by killing them or by preventing them from dividing

Clinical trials – Research studies in which data from direct medical care is used to assess the effectiveness of treatments and other interventions

Dexamethasone – A corticosteroid used either by itself or in combination with other drugs to treat multiple myeloma

Eosinophil – A type of white blood cell involved in inflammation and allergic reactions

Hypercalcemia – Abnormally high levels of calcium in the blood

Hyperglycemia – An increase in the sugar level in your blood

Hypocalcemia – Abnormally low levels of calcium in the blood

Hyponatremia – A significant decrease in the level of sodium in the blood

Immune system – The group of organs and cells that defend the body against infection and disease

Immunotherapy (biological therapy) – medications that are made in living cells or organisms that cause your own immune system to attack cancer cells

Leukopenia – Abnormally low levels of white blood cells

Lymphocyte – A class of white blood cell, including T cells and B cells, which produces antibodies and other substances that fight disease and infection

Metastasis – The spread of cancer from one part of the body to another

Monocytes – A type of white blood cell that eventually develops into a cell called a *macrophage*, which surrounds and digests foreign substances

M-proteins – The antibody made by myeloma cells. Multiple myeloma patients often have high amounts of M-proteins in blood and urine

Myeloma cells – Cancerous plasma cells

Natural killer cell – A type of lymphocyte that directly kills invading foreign cells

Neoplasm – An abnormal growth of cells/tissue that may be benign or cancerous

Neutrophil – A type of white blood cell that directly kills invading bacteria

Peripheral neuropathy – Injury to the nerves that supply sensation to the arms and legs

Plasma cells – A type of B-lymphocyte that produces antibodies

Plasma cell neoplasms – Diseases in which white blood cells called *plasma cells* grow abnormally and may become cancerous. Multiple myeloma is the most common plasma cell neoplasm

Platelets – Platelets are fragments of cells that circulate in the blood and help form clots to stop bleeding

Pulmonary embolism (PE) – A blood clot in an artery that prevents normal blood flow to the lungs

Red Blood Cells (RBCs) – The cells in the blood that carry oxygen to the body's tissues

Remission – When there is no evidence of an illness

Stem cells – The cells from which all other cells develop

Thalidomide (Thalomid®) – An immunomodulatory drug (ImiD); a drug that appears to inhibit the growth and survival of myeloma cells and the growth of new blood vessels that feed tumors

Thrombus – A blood clot that forms on the walls inside blood vessels

White blood cells (WBCs) – Cells that help the body fight infection and disease