About the International Myeloma Foundation

Founded in 1990, the International Myeloma Foundation (IMF) is the oldest and largest myeloma-specific charity in the world. With more than 350,000 members in 140 countries, the IMF serves myeloma patients, family members, and the medical community. The IMF provides a wide range of programs in the areas of Research, Education, Support, and Advocacy:

**RESEARCH** The IMF is the leader in globally collaborative myeloma research. The IMF supports lab-based research and has awarded over 100 grants to top junior and senior researchers since 1995. In addition, the IMF brings together the world’s leading experts in the most successful and unique way through the International Myeloma Working Group (IMWG), which is publishing in prestigious medical journals, charting the course to a cure, mentoring the next generation of innovative investigators, and improving lives through better care.

**EDUCATION** The IMF’s educational Patient & Family Seminars, Medical Center Workshops, and Regional Community Workshops are held around the world. These meetings provide up-to-date information presented by leading myeloma specialists and researchers directly to myeloma patients and their families. Our library of more than 100 publications, for patients and caregivers as well as for healthcare professionals, is updated annually and available free of charge. Publications are available in more than 20 languages.

**SUPPORT** Our toll-free InfoLine at 800-452-CURE (2873) is staffed by coordinators who answer questions and provide support and information via phone and email to thousands of families each year. The IMF sustains a network of more than 150 support groups and offers training for the hundreds of dedicated patients, caregivers, and nurses who volunteer to lead these groups in their communities.

**ADVOCACY** The IMF Advocacy program trains and supports concerned individuals to advocate on health issues that affect the myeloma community. Working both at the state and federal level, the IMF leads two coalitions to advocate for parity in insurance coverage. Thousands of IMF-trained advocates make a positive impact each year on issues critical to the myeloma community.

Learn more about the way the IMF is helping to improve the quality of life of myeloma patients while working toward prevention and a cure. Contact us at 800-452-CURE (2873) or 818-487-7455, or visit myeloma.org.

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What you will learn from this booklet

The IMF’s Understanding series of booklets is designed to acquaint you with treatments and supportive care measures for multiple myeloma (which we refer to simply as “myeloma”). Words in bold type are explained in the “Terms and definitions” section at the end of this booklet, as well as in a more complete compendium of myeloma-related vocabulary, the IMF’s Glossary of Myeloma Terms and Definitions, located at glossary.myeloma.org.

As more drugs become available to treat myeloma, it is vital to learn as much as possible about each new type of therapy. The Understanding POMALYST® (pomalidomide) capsules booklet is about a drug that is approved only for patients with relapsed and refractory myeloma. This booklet presents information on pomalidomide and how it works, the results of clinical trials and ongoing research with pomalidomide, how and when to take pomalidomide, its possible side effects, and how to manage them.

What is pomalidomide?

Pomalidomide is a medication in capsule form that is taken by mouth. Pomalidomide in combination with dexamethasone was approved by the US Food and Drug Administration (FDA) in February 2013, by the European Medicines Agency (EMA) in August 2013, and by Health Canada in February 2014. Pomalidomide + dexamethasone is indicated for patients with myeloma who have received at least two prior therapies including lenalidomide and bortezomib, and have demonstrated disease progression on or within 60 days of completion of the last therapy. For steroid-intolerant individuals, the NCCN Multiple Myeloma Panel suggests considering pomalidomide alone, without dexamethasone. For more information about the corticosteroid dexamethasone, please see the IMF publication Understanding Dexamethasone and Other Steroids.

Pomalidomide is the newest in the line of anti-myeloma agents called immunomodulatory drugs, also known as IMiD® compounds. These agents can modify or regulate the functioning of the immune system. Since myeloma is a cancer of certain cells in the immune system, immunomodulators are particularly effective anti-myeloma agents. Thalidomide® (thalidomide), an immune modulator, was approved by the FDA for the treatment of myeloma in 2003. Revlimid® (lenalidomide) was approved by the FDA in June 2006.

How does pomalidomide work?

Immunomodulatory drugs have multiple actions. They have both anti-cancer and anti-inflammatory effects. They are vascular endothelial growth factor (VEGF) inhibitors, drugs that prevent the formation of blood vessels necessary to sustain tumor cells. Immunomodulatory drugs are also able to reduce the levels of various cellular growth factors, called cytokines and interleukins, which promote the growth of cancer cells. Interleukin-6 (IL-6), for example, is known to stimulate and support the growth of myeloma cells, and it has been reported that pomalidomide “down-regulates,” or reduces the amount, of IL-6. In addition, immunomodulatory compounds enhance the activation of specialized white blood cells (WBC), both the T-cell lymphocytes and T-cells known as “natural killer” (NK) cells, which kill cancer cells.

Lab tests have shown that pomalidomide is more potent in stimulating T-cell proliferation than thalidomide.

What are the results with pomalidomide in clinical trials?

Data from the large, randomized, international phase III MM-003 clinical trial for 455 patients with relapsed/refractory myeloma was presented at the 2012 annual meeting of the American Society of Hematology (ASH) and was the basis for the FDA approval of pomalidomide. Follow-up data of pomalidomide + dexamethasone presented at ASH 2015 firmly established the efficacy of pomalidomide in the relapsed/refractory setting.

A French study published in January 2016 showed that patients with relapsed/refractory myeloma who had longer exposure (≥1 year) to pomalidomide + dexamethasone had an overall response rate (ORR) of 83%, with median overall survival (OS) of 91% at 18 months, both of which far exceed the response rate, progression-free survival (PFS), and OS of patients treated for <1 year.

Data presented at ASH 2016 included two important clinical trial updates of the FDA-approved combination of pomalidomide + dexamethasone.

- MM-014: pomalidomide + low-dose dexamethasone (Pd) was demonstrated to be effective in relapsed/refractory myeloma irrespective of the number of prior therapies. Patients refractory to lenalidomide can be successfully treated with Pd. However, patients may achieve longer PFS and OS if Pd is used 18 months or more after the last dose of lenalidomide. Further investigation is needed to identify an optimal treatment strategy.

- MM-010: about 6% of newly diagnosed myeloma patients present with renal failure severe enough to require dialysis. Half of these patients can become dialysis-independent after bortezomib-based therapy, especially if they achieve a rapid myeloma response. Pomalidomide + bortezomib + dexamethasone therapy increases the probability of renal response when compared to bortezomib + dexamethasone alone. Independence from dialysis is associated with longer survival.
How is pomalidomide taken?

- Pomalidomide is taken in capsule form by mouth.
- On the days that pomalidomide is taken, it should be taken at the same time of the day.
- Swallow pomalidomide with water. Pomalidomide may be taken with or without food.
- Do not break, chew, or open the capsules.
- Do not handle the capsules more than needed.
- If you touch a broken pomalidomide capsule, wash the area of your body that came in contact with the medicine immediately and thoroughly with soap and water.
- If you miss a dose of pomalidomide, and it has been less than 12 hours since your regular time to take it, you should take it as soon as possible. If it has been more than 12 hours since your regular time, just skip your missed dose. Do NOT take two doses at the same time.
- If you take too much pomalidomide or overdose, call your healthcare provider or poison control center right away.
- Store pomalidomide at room temperature, and keep it and all medications out of the reach of children.

What are the dose and schedule of pomalidomide?

Pomalidomide capsules are given orally at 4 mg per day on days 1 to 21 of repeated 28-day cycles until disease progression. Pomalidomide was approved in combination with dexamethasone, an adrenocortical steroid. The recommended dose of dexamethasone is 40 mg per day on days 1, 8, 15, and 22 of each 28-day cycle, but your doctor can adjust the dose if you are experiencing intolerable side effects. You must report any and all new problems when you visit the oncologist's office. Pomalidomide capsules are manufactured in 4 mg, 3 mg, 2 mg, and 1 mg strengths. Your doctor will determine if it is necessary and/or appropriate to treat you with less than the recommended 4 mg dose and, as above, you must report any side effects to the members of your healthcare team.

Table 1. Pomalidomide Capsules

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Warnings and precautions

While most of the side effects associated with pomalidomide are manageable and predictable, there are certain potential side effects that are serious enough to require an FDA-mandated "Boxed Warning" on the package insert. A Boxed Warning is the strictest warning put in the labeling of prescription drugs when there is reasonable evidence of an association with a serious hazard from the drug. In the 2016 prescribing information for pomalidomide, the Boxed Warnings include the risk of embryo-fetal toxicity (birth defects or death of a developing fetus), and an increased risk of venous and arterial thromboembolism (blood clot, pulmonary embolism, heart attack, and stroke).

Female patients of childbearing potential and all male patients are required to complete a monthly phone survey. Doctors must check monthly pregnancy tests, limit prescriptions to a 28-day supply, and report any pregnancies to the FDA.

Pomalyst REMS

Because of the embryo-fetal risk, pomalidomide is available only through a restricted program under a Risk Evaluation and Mitigation Strategy called "Pomalyst REMS®." Prescribers and pharmacists must be certified with the program. Patients must sign an agreement form and comply with the requirements. Patients or their physicians must report any suspected fetal exposure to pomalidomide to the FDA via the MedWatch program at 800-332-1088, and also to Celgene Corporation at 888-423-5436.

Women of childbearing potential

One of the most important discoveries about pomalidomide during lab studies is that it harms the developing fetuses of laboratory animals. Because pomalidomide is a chemical analog of thalidomide, which is known to harm human fetuses, pomalidomide should never be taken by pregnant women and women who are capable of becoming pregnant.

Male patients

Pomalidomide is present in the semen of male patients who take it, so they must also comply with mandatory contraceptive measures.

Nursing mothers

Because many drugs are excreted in human milk and because of the potential for adverse events in nursing infants from pomalidomide, a decision should be made whether to discontinue nursing or to discontinue the drug, taking into account the importance of the drug to the mother.

Drug interactions

No formal drug interaction studies have been conducted with pomalidomide, which is primarily metabolized by CYP1A2 and CYP3A enzyme systems. Pomalidomide is also a substrate of P-glycoprotein (P-gp). Patients should not take pomalidomide with drugs that are strong inhibitors of CYP1A2, CYP3A, or P-gp. Patients should be aware that cigarette smoking may reduce the efficacy of pomalidomide due to CYP1A2 activation. Any concerns and questions about smoking and/or possible drug interactions should be discussed with your doctor and pharmacist.

Age

Safety and effectiveness of pomalidomide in patients under the age of 18 have not been established. No dosage adjustment is required for pomalidomide based on age. In clinical trials, however, patients aged 65 years or older were more likely to experience pneumonia than patients less than 65 years of age.

Second primary malignancy

Cases of acute myelogenous leukemia (AML) have been reported in patients receiving pomalidomide in clinical trials, although none of these were patients in myeloma trials.
Use in renal and hepatic impairment

Pomalidomide is metabolized in the liver. Pomalidomide and its metabolites are excreted by the kidneys. The influence of renal (kidney) and hepatic (liver) impairment on the safety, efficacy, and pharmacokinetics of pomalidomide has not been evaluated. The following patients should not take pomalidomide:

- Patients whose serum creatinine is > 3.0 mg/dL;
- Patients whose serum bilirubin is > 2.0 mg/dL;
- Patients whose AST/ALT is > 3.0 X ULN (upper limit of normal).

Patients must be aware of these and other warnings and precautions before taking pomalidomide. Speak with your doctor or nurse if you notice any changes in your health. Being a “good patient” doesn’t mean suffering in silence; it means accurately and promptly reporting any problems or changes in your health to your healthcare providers so that they can take appropriate steps. No problem is too small to report. Be proactive.

Adverse events

In the clinical trial of 219 patients who received pomalidomide alone or pomalidomide + low-dose dexamethasone, all patients had at least one adverse event (side effect). The most common adverse events, occurring in 30% or more of patients, included fatigue and weakness (asthenia), low white blood cell count (neutropenia), constipation, nausea, diarrhea, difficulty breathing, upper respiratory tract infection, back pain, and fever. The most common serious adverse events were low blood counts and pneumonia. For serious adverse events, treatment with pomalidomide should be held, and then when the side effect resolves, restarted at 1 mg less than the previous dose.

Hypersensitivity reactions

Patients with a prior history of serious sensitivity to Thalomid or lenalidomide were excluded from studies with pomalidomide and may be at higher risk of allergic reactions to pomalidomide. Drug hypersensitivity results from the interaction of a drug and the immune system. Risk factors for drug hypersensitivity reactions include age, female gender, concurrent illnesses, and previous hypersensitivity to related drugs. Symptoms may include difficulty breathing, rash, hives, fever, swelling, vomiting, or diarrhea.

Prevention and treatment of hypersensitivity reactions

Treatment is largely supportive and includes discontinuation of the medication and treatment of the symptoms. Contact your healthcare provider immediately if you experience any symptoms after taking pomalidomide.

Neutropenia

Neutropenia (decreased white blood cell count) of any grade was reported in 50% of patients and was the most frequently reported serious adverse event, followed by anemia (low red blood cell count) and thrombocytopenia (low platelet count). Since your white blood cells make up your immune system, which is your defense against viral and bacterial illnesses, having too few of these cells can lead to infection. Fever is the most common sign of having too few neutrophils, and is a sign that you need immediate medical attention. Other common symptoms associated with a low neutrophil count include sore throat and mouth sores. When patients with relapsed myeloma begin therapy with pomalidomide, neutropenia is often a problem that results from the combined effects of myeloma infiltration of the bone marrow, the impact of prior therapy, and the impact of the pomalidomide.

Prevention and treatment of neutropenia

In the first 2–3 months of therapy, it is especially important to try to maintain the full dose of pomalidomide as much as possible and, if need be, to support the white blood cells with a drug such as Neupogen® (G-CSF, colony-stimulating factor), a growth factor to stimulate neutrophil production. As the myeloma cells are cleared out of the bone marrow, the neutrophils recover, and tolerance for the full dose of pomalidomide improves.

Patients should be monitored with weekly complete blood counts for the first eight weeks of treatment, and monthly thereafter. Treatment can be modified if blood counts are too low. You should inform your doctor if you have any cold or flu symptoms. Neutropenia accompanying viral infections (such as the flu) may be short-term and may resolve quickly after the infection has cleared.

With ongoing pomalidomide therapy beyond the initial cycles, support for white blood cell production may be an ongoing concern. Mild neutropenia generally has no symptoms and may not need treatment. In severe cases of neutropenia, the doctor may prescribe a white blood cell growth factor to achieve a safe level of neutrophils. If the white blood cell count remains low, dose reduction of pomalidomide may also be required once response has been achieved.

Dizziness and confusion

18% of patients in the clinical trial leading to FDA approval of pomalidomide experienced dizziness and 12% of patients experienced some mental confusion.

Prevention of dizziness and confusion

Patients should be aware that dizziness and confusion are potential side effects and should avoid situations where this would pose a risk to, or problem for, themselves or others. You may need to
Neuropathy
18% of patients experienced neuropathy (toxicity to nerve tissue), approximately half of which was peripheral neuropathy (PN). There were no cases of serious neuropathic adverse events. Symptoms of neuropathy include dizziness and fainting; symptoms of peripheral neuropathy include numbness, tingling, and pain in the hands and/or feet.

Prevention and treatment of neuropathy
We strongly urge you to contact your physician if you experience new or worsening symptoms of this condition. Early detection and dose modification can prevent progression of neuropathy.

Fatigue
Feeling unusually tired is a common side effect of treatment for myeloma (and other cancers). Although many of the patients in clinical trials with pomalidomide felt fatigued, very few had severe fatigue that prevented them from performing the activities of daily living. As a general rule, any patient suffering from fatigue should exercise caution if operating machinery, including automobiles. The IMF has a publication called Understanding Fatigue that will be useful if you or someone you care for experiences this side effect.

Prevention and treatment of fatigue
If your fatigue is severe, your doctor may have to intervene with appropriate supportive care measures. There are drugs, such as Provigil® (modafinil), to treat this problem. The effects of fatigue may be minimized by maintaining:
- A moderate level of activity (because inactivity breeds greater fatigue)
- A healthy diet and proper fluid intake
- A consistent sleeping schedule with enough rest
- Regularly scheduled visits with your healthcare providers to discuss your fatigue issues.

Prevention and treatment of asthenia
In cases of severe asthenia, there are several things that can be done to help. First and easiest, try taking your pomalidomide at night before you go to sleep. This will help limit the drug’s effects to the hours when you’re asleep in bed. If you are still experiencing significant physical weakness during your waking hours, your doctor may reduce the dosage of pomalidomide. Asthenia may also improve by itself with prolonged therapy. Doctors have reported that asthenia and fatigue often improve as the myeloma disease burden decreases, usually after the first two cycles of therapy. Finally, in cases of severe asthenia, the doctor can prescribe drugs that are given at low doses early in the morning (for example, Ritalin® or Adderall®) to ensure that patients are able to be more active during the day.

Thrombocytopenia
Patients taking pomalidomide may experience a decrease in the level of blood cells called thrombocytes, or platelets, which are responsible for clotting the blood. Low levels of platelets can result in bruising, bleeding, and slower healing.

Prevention and treatment of thrombocytopenia
You should inform your physician if you experience excessive bruising or bleeding. Management may include platelet transfusions at the discretion of your physician.

Anemia
Red blood cells contain hemoglobin, a protein that contains iron and transports oxygen from the lungs to the body’s organs and tissues. When a patient has anemia, the result is low levels of oxygen in the body, which may cause shortness of breath and feelings of exhaustion.

Prevention and treatment of anemia
Your healthcare providers will determine which treatment regimen for anemia is best suited to and safest for you. The following are options for treatment of anemia:
- Adjusting medications
- Blood transfusions
- Erythropoietic (red blood cell-making) agents.

Looking forward
Data presented at the 2016 ASH annual meeting included pomalidomide clinical trial updates, as well as studies of pomalidomide as part of combination therapies with new and recently approved drugs:
- One study of carfilzomib + pomalidomide + dexamethasone demonstrated favorable data in comparison with pomalidomide + low-dose dexamethasone in relapsed/refractory myeloma after a median follow-up of 10 months. Another study showed activity in heavily pretreated patients but reflected the challenges encountered with managing often less fit patients in the real-world setting outside of clinical trials.
- Pomalidomide + dexamethasone + daily low-dose oral cyclophosphamide in relapsed/refractory myeloma compared favorably to pomalidomide + dexamethasone as well as other triplet regimens containing cyclophosphamide, showing improved ORR and PFS.
- Ixazomib (Ninlaro®) + pomalidomide + dexamethasone in relapsed/refractory myeloma is a well-tolerated oral combination therapy, and responses were seen even in double/triple refractory myeloma and poor-risk cytogenetics.
- Selinexor + pomalidomide + low-dose dexamethasone has significant clinical activity (ORR 60%) in patients with heavily pretreated relapsed/refractory myeloma.
- Pembrolizumab + pomalidomide + dexamethasone for relapsed/refractory myeloma shows promising activity and an acceptable safety profile.
- Marizomib + pomalidomide + low-dose dexamethasone in relapsed/refractory myeloma was well tolerated and demonstrated promising activity in heavily pretreated, high-risk patients.
- Filanesib + pomalidomide + dexamethasone demonstrated efficacy, with 50% ORR and 100% disease control rate with manageable toxicity in relapsed/refractory myeloma patients.
In closing

While a diagnosis of cancer is something you cannot control, gaining knowledge that will improve your interaction with your doctors and nurses is something you can control, and it will have a significant impact on how well you do throughout the disease course.

This booklet is not meant to replace the advice of your doctors and nurses who are best able to answer questions about your specific healthcare management plan. The IMF intends only to provide you with information that will guide you in discussions with your healthcare team. To help ensure effective treatment with good quality of life, you must play an active role in your own medical care.

We encourage you to visit myeloma.org for up-to-date information about myeloma, and to contact the IMF InfoLine with your myeloma-related questions and concerns. The IMF InfoLine consistently provides callers with the best information about myeloma in a caring and compassionate manner. IMF InfoLine specialists can be reached at InfoLine@myeloma.org, or 800-452-CURE (2873) or 818-487-7455.

**Terms and definitions**

**Adrenocortical steroid:** Any of the steroid hormones produced by the adrenal cortex (the outer part of the adrenal gland) or their synthetic (man-made) equivalents. Also known as adrenocorticoids, glucocorticosteroids, or corticosteroids.

**Adverse event (AE):** Also known as adverse reaction. See “Side effect.”

**Anemia:** A decrease in hemoglobin contained in red blood cells that carry oxygen to the body’s tissues and organs. Anemia is usually defined as hemoglobin below 10 g/dL, with over 13–14 g/dL considered normal, and/or a decrease of ≥ 2 g/dL from the normal level for an individual.

**Asthenia:** A condition in which the body lacks or has lost strength either as a whole or in any of its parts.

**Cancer:** A term for diseases in which malignant cells divide without control. Cancer cells can invade nearby tissues and spread through the bloodstream and lymphatic system to other parts of the body.

**Cell:** The basic unit of any living organism. Millions of microscopic cells comprise each organ and tissue in the body.

**Cytokines:** Proteins secreted by cells which can stimulate or inhibit growth/activity in other cells. Cytokines are produced locally (i.e., in the bone marrow) and circulate in the bloodstream. They are normally released in response to infection.

**Deep vein thrombosis (DVT):** A condition that occurs when a blood clot (thrombus) forms in one or more of the deep veins in the body, usually in the legs. Deep vein thrombosis can cause leg pain or swelling, but may occur without any symptoms.

**Down-regulation:** The process by which a cell decreases the quantity of a cellular component, such as RNA or protein, in response to an external variable.

**Immune system:** The complex group of organs and cells that produces antibodies, cellular responses to defend the body against foreign substances such as bacteria, viruses, toxins, and cancers.

**Immunomodulatory drug:** An agent that affects, enhances, or suppresses the immune system. Sometimes called an IMiD® compound.

**Inflammatory:** Pertaining to a protective response of the body against injury or disease.

**Interleukin:** A naturally produced chemical released by the body, or a substance used in biological therapy. Interleukins stimulate the growth and activities of certain kinds of white blood cells. Interleukin-2 (IL-2) is a type of biological response modifier that stimulates the growth of certain blood cells in the immune system that can fight some types of cancer. Interleukin-6 (IL-6) is a cytokine that is a potent stimulus to osteoclast and plasma cell activities.

**Lymphocytes:** B-cells, T-cells, and natural killer (NK) cells, which together constitute 30% of white blood cells. B-lymphocytes and T-lymphocytes are responsible for the adaptive immune response, which enables immune system cells to attach to specific antigens on the cell surfaces of infectious organisms, tumors, and other foreign substances.

**Multiple myeloma:** A cancer arising from the plasma cells in the bone marrow. The cancerous plasma cells are called myeloma cells.

**Neutropenia:** A reduced level of neutrophils.

**Neutrophil:** A type of white blood cell necessary to combat bacterial infection.

**Overall response rate (ORR):** The percentage of patients in a clinical trial whose monoclonal protein decreased by at least 50% in response to treatment.

**Overall survival (OS):** For a group of individuals suffering from a cancer, this term denotes the chances of staying alive. It denotes the median number of individuals in the group who are likely to be alive after a particular duration of time. At a basic level, OS is representative of cure rates. OS is often used as a measure of treatment efficacy in clinical trials.

**Peripheral neuropathy (PN):** Numbness, tingling, and/or pain in the hands, feet, legs, and/or arms.

**Pharmacokinetics:** The study of the processes by which a drug is absorbed, distributed, metabolized, and eliminated by the body.

**Platelets:** One of the three major blood elements, others being the red blood cells and white blood cells. Platelets plug up breaks in the blood vessel walls and release substances that stimulate blood clot formation. Platelets are the major defense against bleeding. Also called thrombocytes.

**Progression-free survival (PFS):** The improved survival of a patient that can be directly attributed to the treatment given for the myeloma. The time period during which the patient survives, and the myeloma does not regrow or relapse. See “Progressive disease.”

**Progressive disease:** Myeloma that is becoming worse or relapsing, as documented by tests. Defined as an increase of ≥ 25% from lowest confirmed response value in the myeloma protein level and/or new evidence of disease.
Pulmonary embolism (PE): A condition that occurs when a blood clot in the vein (deep vein thrombosis, or DVT) breaks loose, travels through the bloodstream, and lodges in a lung, blocking blood flow.

Refractory: Disease that is no longer responsive to standard treatments. Patients with refractory myeloma have had progressive disease either during treatment or within 60 days following treatment. Most clinical trials for advanced disease are for patients with relapsed and/or refractory myeloma.

Relapse: The reappearance of signs and symptoms of a disease after a period of improvement. Patients with relapsed disease have been treated, then developed signs and symptoms of myeloma at least 60 days after treatment ended. Most clinical trials for advanced disease are for patients with relapsed and/or refractory myeloma.

Salvage therapy: A treatment regimen that is given after the patient’s disease does not respond to preferred therapies or the patient cannot tolerate other available therapies.

Side effect: Unwanted effect caused by a drug. Also known as adverse event or adverse reaction.

Steroid: A type of hormone. Steroids are often given to myeloma patients along with one or more anticancer drugs and typically enhance the anti-myeloma treatment benefit.

Substrate: A molecule upon which an enzyme acts.

Supportive care: Treatment given to prevent, control, or relieve complications and side effects and to improve the patient’s comfort and quality of life.

T-cells (T-lymphocytes): A type of white blood cell that plays a central role in the immune system. T-cells can be distinguished from other lymphocytes, such as B-cells and natural killer (NK) cells, by the presence of a T-cell receptor (TCR) on the cell surface. They are called T-cells because they mature in the thymus (although some also mature in the tonsils).

Thrombocytopenia: A low number of platelets in the blood. “Normal” levels vary from laboratory to laboratory. The normal level at the Mayo Clinic is 150,000–450,000. If the platelet count is less than 50,000, bleeding problems could occur. Major bleeding is usually associated with a reduction to less than 10,000.

Tumor: An abnormal mass of tissue that results from excessive cell division.

Vascular endothelial growth factor (VEGF): A growth factor that promotes the growth of new blood vessels (angiogenesis).

Venous thromboembolism (VTE): A condition that includes both deep vein thrombosis (DVT) and pulmonary embolism (PE). Nearly two thirds of VTE events result from hospitalization. Risk factors include infection, age > 75, cancer, and a history of VTE. See “Deep vein thrombosis (DVT)” and “Pulmonary embolism (PE).”

White blood cells (WBC): General term for a variety of cells responsible for fighting invading germs, infection, and allergy-causing agents. These cells begin their development in the bone marrow and then travel to other parts of the body. Specific white blood cells include neutrophils, granulocytes, lymphocytes, and monocytes.

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One of the most daunting aspects of being diagnosed with multiple myeloma is learning about – and understanding – an unfamiliar disease that is quite complicated. From diagnosis to long-term survival, the 10 Steps to Better Care® will guide you through the myeloma journey:

1. Know what you’re dealing with. Get the correct diagnosis.
2. Tests you really need.
3. Initial treatment options.
4. Supportive care and how to get it.
5. Transplant: Do you need one?
6. Response Assessment: Is treatment working?
7. Consolidation and/or maintenance.
9. Relapse: Do you need a change in treatment?

Visit 10steps.myeloma.org to gain a better understanding of the disease and diagnosis, and proceed through the steps to learn the best tests, treatments, supportive care, and clinical trials currently available.

As always, the International Myeloma Foundation (IMF) urges you to discuss all medical issues thoroughly with your doctor. The IMF is here to equip you with the tools to understand and better manage your MM. Visit the IMF website myeloma.org or call the IMF InfoLine at 800-452-CURE (2873), which is staffed by trained information specialists, with your questions or concerns. The IMF is here to help.