

What doctors want patients to know about blood cancer

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Benji Feldheim

Contributing News Writer

AT A GLANCE: Blood cancer is a broad group of cancers that originate in the blood, bone marrow or lymphatic system. Fortunately, the majority are highly treatable. Here are key things you will learn about blood cancer from Navneet Majhail, MD, MS, a hematologist and physician-in-chief of blood cancers at HCA Healthcare's Sarah Cannon Transplant and Cellular Therapy Network, in this article:

- Blood cancers fall into three main categories: leukemia, lymphoma and multiple myeloma.
- Leukemia originates in the bone marrow while lymphoma arises from the lymphatic system and multiple myeloma originates in plasma cells that produce antibodies.
- Common symptoms—including fatigue, fever, bleeding and frequent infections—can also be caused by other conditions, so consulting a physician is essential.
- Risk factors include increasing age, family history, prior radiation or chemotherapy, smoking and certain chemical exposures.

Blood cancer is not a single disease. It is a group of cancers that originate in the blood, bone marrow or lymphatic system, together encompassing dozens of distinct conditions that can affect people of all ages. While the terminology can be overwhelming, a common thread runs through them: cells begin growing out of control and disrupt the body's ability to carry out the essential functions of blood, from fighting infection to preventing dangerous bleeding.

Blood cancers collectively affect a significant number of people. According to the National Marrow Donor Program (NMDP), someone in the U.S. is diagnosed with a blood cancer [every three to four minutes](#). Despite this complexity, blood cancer has become one of medicine's most actively evolving areas of progress. Treatments unavailable just a decade ago—including CAR T-cell therapy and bispecific antibodies—have expanded treatment options and improved outcomes for patients across all three main cancer types. People living with a blood cancer diagnosis today have options.

The AMA's What Doctors Want Patients to Know™ series gives physicians a platform to share what they want patients to understand about today's healthcare headlines.

In this installment, [Navneet Majhail, MD, MS](#), a hematologist and physician-in-chief of blood cancers at HCA Healthcare's Sarah Cannon Transplant and Cellular Therapy Network, shared what he wants patients to know about blood cancer—from understanding its many forms and risk factors, to navigating a new diagnosis with confidence.

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Blood cancer encompasses three main types

"Blood cancer is basically a group of cancers that starts within the blood and the bone marrow, as well as the lymphatic system," Dr. Majhail said. "These happen when cancer cells arising from the blood, bone marrow or lymphatic system start growing out of control and then impact the body's ability to have a normal function of those cells."

"It impacts the body's ability to fight infections, increases your risk of bleeding, causes issues related to anemia, such as fatigue, or can cause non-specific symptoms such as fevers and weight loss," he said.

Each of the three main categories of blood cancer has its own origin point.

"Leukemia—these are blood cancers that originate mostly in the bone marrow—occurs because the body starts making abnormal bone marrow cells, which by themselves can

cause some symptoms and organ failure, or they crowd out the normal cells in the bone marrow,” Dr. Majhail explained. “As a result, patients are at risk for bleeding, they're more prone to or not able to fight infections, or get severe anemia.”

“Lymphoma arises from the lymphatic system or the lymph nodes in our body, and the lymphoma cancer cells can cause lymph gland enlargement in various parts of the body, such as the neck, the armpits and the groin,” he noted. “Lymphomas are broadly classified into two groups: non-Hodgkin lymphoma and Hodgkin lymphoma.”

“Multiple myeloma originates in a blood cell called the plasma cell, which essentially produces antibodies to fight infections,” Dr. Majhail said. “In this form of blood cancer, these plasma cells proliferate and can cause abnormal antibodies to accumulate in the body, and can lead to issues like renal failure, anemia, and bone fractures.”

Symptoms are wide-ranging, and overlap with other conditions

“The symptoms of blood cancers can be fairly varied. There are symptoms that can be caused by a variety of conditions which are not blood cancers,” said Dr. Majhail. “One example is symptoms related to severe anemia—fatigue, chest tightness, and shortness of breath—which can be seen in a variety of diseases other than cancer.”

“Symptoms can also occur because of low platelet counts,” he said. “Platelet counts are blood cells which help in clotting and prevention of bleeding, and if the platelet counts are low, people can get bleeding issues and easy bruising, bleeding from the gums, or blood in urine or stool.”

“Sometimes blood cancers involve your white blood cells, which are important for preventing or managing infections,” Dr. Majhail said. “Patients may get recurrent infections, fevers, chills, weight loss. They may also get [pneumonia](#) or [frequent UTIs](#). These symptoms can occur because of other medical conditions as well, but sometimes they indicate underlying blood cancers.”

The causes of blood cancer are not yet fully understood

"For the most part, we don't know what causes blood cancer in most patients. There's good research now which indicates that in certain situations, the DNA of our blood cells gets mutated for a variety of reasons," Dr. Majhail said. "As we age, that's more likely to happen. If there's been prior exposure to radiation therapy or chemotherapy, that's more likely to happen."

"If you've been exposed to certain chemicals, or you are a heavy smoker, that's more likely to happen," he added. "There can be some inherited forms of blood cancers which can cause an increased risk in certain patients. But that's more of an exception than the rule, especially in adult patients."

"We know that there are DNA mutations in the blood cells that can sometimes cause or predispose patients to blood cancers," Dr. Majhail noted. "But again, we don't know why some people are more prone than others to get it."

"Blood cancers typically happen at all ages, but there is a preponderance as people age, mostly beyond the age of 60 or 65 years," he said. "Family history is sometimes important. High radiation exposure or prior chemotherapy and radiation therapy, exposure to chemicals such as benzene, smoking, and having a compromised immune system—such as patients who've had an organ transplant, or certain infections like Epstein-Barr virus—all increase your risk."

"But keep in mind that people who do not have these risk factors can also get blood cancers," Dr. Majhail emphasized.

Confirming a blood cancer diagnosis involves multiple layers of evaluation

"From a diagnosis perspective, your physician will take a good history and do a physical exam—paying attention to things like gum bleeding, any lymph glands that might be palpable in various parts of your body, enlarged liver or spleen, or any skin lesions that

might be indicative of a blood cancer,” said Dr. Majhail. “But then this is often followed up by other testing. That can include blood tests such as a complete blood count and other more specialized tests to look at the type of blood cancer someone might have.”

“It is not unusual for patients to undergo a bone marrow biopsy. A bone marrow biopsy can tell us what is happening in the bone marrow, and we can send that off for a number of specialized tests that the pathologist will conduct to tell us if there is blood cancer and what type it is,” he explained. “For certain situations, we’ll also do imaging—scans like a CAT scan, a PET scan or an MRI scan—either to identify any lesions related to the blood cancer, sometimes to stage it, and to rule out other issues that might be causing blood abnormalities which may be unrelated to cancer.”

The range of blood cancer treatments has expanded

“Many blood cancers today are highly treatable, and some can be cured,” Dr. Majhail said, noting that “the spectrum of treatments we can offer ranges from chemotherapy to radiation therapy, to immunotherapies where we’ll have medications that modulate the immune system to attack these blood cancers.”

“Certain patients need a blood and marrow transplant, or a stem cell transplant, where we either use blood stem cells from the patient himself or herself, called an autologous transplant, or stem cells from a donor, called an allogeneic transplant,” he explained. “Then there are newer therapies called CAR T-cell therapies, or chimeric antigen receptor T-cell therapies, where we take cells from the patient and genetically modify them to treat those blood cancers. Treatment options are expanding rapidly thanks to research and clinical trials in this space.”

“Within the context of immunotherapy, we also have treatment options called bispecific antibodies or bispecific T-cell engagers, which again modulate the body’s immune system to fight these cancers,” Dr. Majhail said. “In some very early stages or certain types of blood cancers, patients may not be offered active treatment and can be watched with close monitoring.”

“Again, a whole spectrum of options of varying intensity are available for treating blood cancers, partly depending on what kind of blood cancer it is, what stage it might be, and what's appropriate for a given patient,” he noted.

These advanced treatments are available through specialized programs across the country. HCA Healthcare’s Sarah Cannon Transplant and Cellular Therapy Network includes 11 complex blood cancer programs across the U.S. that collectively care for more than 1,200 patients with acute leukemia and more than 1,600 blood and marrow transplant and cellular therapy recipients each year.

“Across our network, we’re not only delivering sophisticated therapies such as blood and marrow transplants and CAR T-cell therapy but also helping expand treatment options through clinical trials supported by the HCA Healthcare Research Institute and Sarah Cannon Research Institute,” Dr. Majhail said.

Some blood cancer cases can be controlled like chronic diseases

Whether a blood cancer can be eliminated or managed long-term depends on its type, the patient’s overall health and which treatments are appropriate.

“In the current day and age, the vast majority of blood cancers are curable, and it partly depends on the blood cancer,” Dr. Majhail said. “For some, like leukemias and lymphomas, they’re either curable through the use of chemotherapy or other therapies such as blood and marrow transplant or CAR T-cell therapy.”

“For other blood cancers, like multiple myeloma, we are able to control it with the treatment options we have available,” he noted. “Patients may get one treatment option and then a second one and then a third one and so on. Highly effective treatment options make these blood cancers more like chronic diseases.”

Lifestyle choices can support better outcomes during and after treatment

"There are a couple of broad categories to think about as someone with blood cancer considers what they can do to support their health during treatment and recovery," Dr. Majhail said. "One piece is general health measures—a good diet, exercise as best as they can, and staying hydrated."

"Patients can be at risk for infections because they are immunocompromised," he said, "so measures to minimize that risk include good hand washing, wearing a mask in an appropriate situation, and avoiding crowded situations where they cannot control exposure or risk of infections."

"Then the other domain is just the high level of caring for self, because blood cancer can be an overwhelming diagnosis," Dr. Majhail said. "How do you build your support system with your family, friends, and if needed, a therapist or a support group that can educate you, be an advocate for you, and certainly help you through that process?"

Ask for a second opinion and about clinical trials

"Blood cancers tend to be rare and highly specialized, so don't hesitate to ask for a second opinion," Dr. Majhail said, emphasizing that patients should "see an oncologist or a hematologist who specializes in blood cancers, at least once at the time of diagnosis."

Additionally, "do ask about clinical trials," he said. "A lot of clinical research and innovation is happening in this space, and many of these blood cancers are curable or controllable—and that's thanks to the advances we've had in the treatment options available."

"You, as a patient, or as a patient's caregiver, are your biggest advocate," Dr. Majhail said. "There are many resources out there that talk about blood cancers and can help you educate yourself so you can ask the right questions and be more knowledgeable about the treatment options so that you can have the best outcomes."

A donor can be critical for patients who need a transplant

For some patients with blood cancer and other life-threatening blood disorders, a blood stem cell transplant may offer an important treatment option. Finding an appropriate donor can be a critical part of that process. [About 75% of patients](#) who need a transplant do not have a fully matched donor in their immediate family, according to NMDP, meaning many must look to unrelated donors or other donor options.

"When a patient needs a transplant but doesn't have a matched donor in their family, the search for an unrelated donor can become a critical part of their care," Dr. Majhail said. "Working with NMDP allows us to broaden that search and help more patients find a potential donor."

Know when to contact your doctor

"When blood cancer happens, it can present in one of many ways," Dr. Majhail said. "In one extreme, it can present fairly suddenly with very severe symptoms such as fevers, infections and bleeding."

"In other situations, it creeps up on you—someone might be feeling more tired than usual, more fatigued, may have some shortness of breath on exertion," he added. "Just be cognizant of your body. If you have any of these symptoms, do reach out to your physician or medical provider so that they can assess you, look at your risk factors, look at your history, do a physical exam, and then order any more testing that might be needed to determine if blood cancer is among the suspected causes of what's going on."

"Most people with these symptoms do not have blood cancer. So that's an important takeaway point," Dr. Majhail noted.