Norm MacDonald's Death Puts Spotlight on Acute Leukemia

Colorado University Cancer Center member Dan Pollyea, MD, says the disease can still be deadly despite advances in treatment.

September 24, 2021 By Greg Glasgow at the University of Colorado Cancer Center

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Comedian and former "Saturday Night Live" cast member Norm MacDonald died on Tuesday, September 14, after what his brother, Neil MacDonald, described as a nine-year battle with acute leukemia. Norm MacDonald, known for his intelligence and sarcastic wit, was 61.

Leukemia is a blood cancer that originates in the blood and bone marrow. It usually occurs when the body creates too many abnormal white blood cells and interferes with the bone marrow's ability to make red blood cells and platelets, though some leukemias start in other kinds of blood cells.

Leukemia accounts for about one-third of all blood cancer diagnoses and was the sixth most common cause of cancer deaths in both men and women in the U.S. from 2012 to 2016. It is the most common cancer in children and teens, accounting for almost one-third of all childhood cancer diagnoses.

The main types of acute leukemia are acute myeloid leukemia (AML), which is a disease of mostly older patients and affects about 30,000 people in the U.S. each year, or acute lymphoblastic leukemia (ALL) which is the most common type of cancer in children but is relatively rare in adults.

We asked CU Cancer Center member Dan Pollyea, MD, MS, clinical director of leukemia services at the University of Colorado School of Medicine, to share some insight on leukemia, advances in treatment, and the challenges leukemia patients face.

What is the difference between acute leukemia and other types of leukemia?

There are a lot of different types of leukemia. Roughly, you can break them down into acute leukemia and chronic leukemia. Acute leukemias are more sudden in onset, can have a shorter period in which patients survive, and are typically more aggressive. That's in contrast to chronic leukemias, which can still be very life-limiting, but many times patients with chronic leukemias live for years. Most people who have acute leukemia either are cured, or they die from the disease. It's rare to have a nine- or 10-year period where you're dealing with it. That can happen, but it's less common.

Are there any risk factors or causes of acute leukemia?

Unfortunately, there are very few known risk factors for these diseases, for the most part. They are just mysterious in that way. We really don't understand it well enough, and they're relatively rare, so it's hard to do epidemiologic studies. We don't really understand why they happen or when they happen in most cases.

Are there any screening tests for leukemia?

No, there are there aren't any screening tests.

What about symptoms? How is leukemia typically detected?

This typically comes to attention because of an abnormality in a patient's blood counts. That could be someone who's asymptomatic but has routine bloodwork done, like at their primary care doctor's office, and are noted to have some abnormalities — anemia is one of the more common, or low platelets or a high white blood cell count. Alternatively, many people can have symptoms from those abnormalities. A person might be very, very tired because they're severely anemic, or they start to have bleeding complications because they don't have enough platelets. Those are all potential ways to diagnose somebody.

How is acute leukemia treated?

It depends a lot on the type of disease. Within the acute leukemia world, there are two main types. There's acute myeloid leukemia (AML), which is the most common acute leukemia in adults, but pretty uncommon at the age that Norm MacDonald was. The average age of diagnosis is around 68. Then there's acute lymphoblastic leukemia (ALL), which is the most common cancer in children, but very rare in adults. Either one could potentially have resulted in this drawn-out period that he had between diagnosis and when he passed away. For him to have lived for nine years, he would have definitely had to have been treated successfully, at least for a period of time. In AML, the treatment ranges from very intensive chemotherapy to very targeted oral therapies that we have recently developed for patients. In ALL, it's still mostly chemotherapy. But we're getting better and treating these all the time.

What about clinical trials? Are there any of those going on for these diseases?

Absolutely. AML has really kind of undergone a revolution in the past five or six years, in terms of the number of therapies that are now approved. It's unlike anything that's happened in the history of this disease. We're treating this a lot differently than we ever treated this disease before. There's a lot of enthusiasm and optimism for the future, and we're all pretty hopeful about this, but it requires clinical trials to continue to get better.

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