How Acute Myeloid Leukemia Is Treated at MSK: An Interview with Martin Tallman

By Julie Grisham, **Tuesday, September 11, 2018**

Hematologic oncologist Martin Tallman is Chief of MSK's Leukemia Service.

Summary

> In this interview, Leukemia Service Chief Martin Tallman talks about the latest advances in treatment for AML and how people can benefit from receiving their treatment at MSK.

Acute myeloid leukemia (AML) is one of the most common types of blood cancer. The word "acute" means that the cancer can advance quickly and needs to be treated right away. The word "myeloid" refers to the type of cells that are cancerous.

Myeloid cells are blood cells that develop into many different kinds of immune cells. They also develop into platelets, which are responsible for blood clotting. This explains why excessive bruising and bleeding are symptoms of AML.

We recently spoke with **Martin Tallman**, Chief of Memorial Sloan Kettering's **Leukemia Service**. He reviewed the latest advances in treatment for AML and how people can benefit from receiving their treatment at MSK.

How common is AML?

About 20,000 people in the United States are diagnosed with AML every year. The average age at the time of diagnosis is 72, but it can develop at any age.

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We know that AML is becoming more common, but we're not sure why. For most adults, the cause is not known. But there has been speculation that more people are developing AML because they have been treated with chemotherapy and radiation for other types of cancer. As a result of advances in cancer care, more people are surviving long enough to develop these secondary cancers.

In children and young adults, however, past treatment with chemotherapy and radiation is a common cause of AML.

How is treatment for AML changing?

Until recently, there had been no new continually approved drugs for treating AML since 1973. Then in 2017, four new drugs were approved by the US Food and Drug

Administration. One more has been approved so far in 2018, and there are three or four others that are poised to be approved within the next year or so.

One of the new drugs, liposomal daunorubicin-cytarabine (Vyxeos™), is a new formulation of a standard leukemia drug. Another, gemtuzumab ozogamicin (Mylotarg™), is made from an antibody linked to a potent toxin. Midostaurin (Rydapt®) is a drug that targets a mutated protein called FLT3.

Enasidenib (Idhifa®) was approved to treat AML that carries a mutation in a gene called *IDH2*. **Ivosidenib** (Tibsovo®) targets cancers with a mutation in the related gene *IDH1*. Both enasidenib and ivosidenib work by converting cancer cells back into normal cells rather than killing them. MSK's Leukemia Service led the trials that resulted in both of these drugs being approved.

In addition to new chemotherapy and targeted drugs currently being studied, there are **clinical trials** looking at chimeric antigen receptor (CAR) T therapy and other types of immunotherapy for AML. We are also looking at new combinations of drugs.

We've been able to develop all these new treatments because — thanks to **research** in both the lab and the clinic — we now have a much better understanding of what drives this disease. This knowledge leads to more-effective ways to target malignant cells. It's an amazing, exciting time to be doing leukemia research.

How often are stem cell or bone marrow transplants used to treat AML?

Blood or marrow stem cell transplants are recommended for many, but not all, people with AML. For those who are able to find a donor and are able to safely tolerate the transplant process, this treatment may offer the best chance for a cure.

For people whose disease is considered low risk because of its molecular characteristics, a transplant is usually not recommended. These people usually do well without that procedure.

For others, especially those who have serious, unrelated health problems, a transplant may not be recommended. That's why it's so important that we have all these new treatments. They offer a good alternative to transplants.

Blood & Marrow Stem Cell Transplantation

Stem cell transplants, also called bone marrow transplants, can treat certain blood cancers. These include leukemia, lymphoma, and multiple myeloma. Learn what makes Memorial Sloan Kettering one of the best places to have a stem cell transplant.

Learn more

What does MSK offer people with AML that most other hospitals don't?

We recently conducted a pilot project in which people were able to receive their consolidation chemotherapy — the second part of their treatment — as outpatients. In consolidation therapy, chemotherapy is given on alternating days throughout the week. This is done every week for a month.

Under our new procedure, the way it works is that patients come in on a Monday and get their first treatment. During that appointment, their chemotherapy for Wednesday and Friday is loaded into an electronic pump. At the end of their treatment on Monday, they can go home. Then on Wednesday and Friday, they use

telemedicine to communicate with their nurse, who can then activate the pump remotely for the next two doses.

Historically, induction chemotherapy — the first part of the treatment — has always been done on an inpatient basis. People have to stay in the hospital for at least a month. This is difficult for them and their families. With new developments in technology, a study will soon start for people to receive their induction treatments mostly at home.

The only strict requirement for receiving treatment this way is that patients have to live a reasonable distance from one of our locations, within an hour or two, in case they need to come back in.

What else is special about the way MSK treats AML?

There are 22 doctors on our service who are completely focused on leukemia, **myelodysplastic syndrome**, and **myeloproliferative neoplasms**. We also have nurses and nurse practitioners with fantastic expertise in caring for people with acute leukemia. Some of them have many years of experience.

We have a team of clinical pharmacists who are dedicated to working with the Leukemia Service. They are vital for understanding all the new drugs that are being given to patients, whether as part of standard care or a clinical trial. And they're very good at educating patients about what they need to know when taking these drugs.

We also have wonderful colleagues on the **Infectious Disease Service**. They focus on the prevention and treatment of the infections that are common in people receiving leukemia therapy. They closely monitor our patients for signs of trouble. They also perform clinical and laboratory-based research that's leading to better treatment for all people with cancer.

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