Spotlighting the Latest Leukemia Treatments

University of Colorado experts discuss the drugs Scemblix and Tecartus and the broader context of leukemia research today.

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Illustrating the University of Colorado Cancer Center's research strength in the area of blood cancers, the American Cancer Society Journal recently asked CU Cancer Center members Andrew Kent, PhD, and Dan Pollyea, MD, MS, to give readers an update on the latest advances in leukemia treatment.

In the article published in the journal's April 2023 edition, Kent and Pollyea talk about two new leukemia drugs that were recently approved by the FDA and how they reflect new trends in leukemia research.

The first spotlighted drug, asciminib (Scemblix), stops cancer from spreading by inhibiting the BCR-ABL gene, while the second drug, brexucabtagene autoleucel (Tecartus), is a CAR T cell immune therapy that harnesses the patient's own immune system to attack and destroy cancer cells.

We spoke with Kent — who was a resident and a fellow in the CU School of Medicine before becoming an instructor of hematology and CU Cancer Center member earlier this summer — about the paper and the drugs on which it focuses.

Why did you decide to focus on these two drugs in your article?

We looked over all the publications in leukemia from the whole year, looking for one or two things that really stood out. To be more objective about it, we chose these two new FDA approvals and used those as a basis to talk about the broader context of what's going on in leukemia research these days.

What's so exciting about the asciminib treatment?

Both of these drugs are the fruits of many years of development and research. Asciminib is the result of a really microscopic understanding of this abnormal protein that causes cancer to grow and spread. There was a lot of basic science research to understand structurally what is going on, then they developed a new drug to target it in a really unique way. It's a great example of how

really fundamental research can be translational and impact patients' lives.

What excited you about the CAR T cell product?

CAR T is a whole new strategy to kill cancer cells, using the patient's own immune system to fight the cancer itself. It's something that's been lagging a little bit in myeloid leukemias, though it has worked great in other types of cancers. We're learning better and better how to use it in blood disorders, and I thought that was exemplary of another huge trajectory in leukemia research.

Are these drugs being used as first-line treatments in newly diagnosed people?

Right now, asciminib is an alternate when patients have failed more conventional therapies, or they have a specific mutation that renders them resistant to other treatments. But I do anticipate that it will become used earlier and earlier in therapy. The CAR T cell is also approved as a later-line treatment, but it might actually work better the earlier you use it. It's always a challenge to convince the FDA to let you try something that you don't know is going to work when you have treatments that do work in most people. These drugs always get approved later line and then move up as we better understand how they work.

Have you prescribed both of these drugs to your patients?

I have prescribed asciminib, but I have not prescribed the new CAR T product. It's such a laborious process to engineer that the company can only treat a certain number of patients in a certain timeframe. That is a barrier to those cellular therapies. But we are lucky as an institution to have plenty of CAR T cell patients that we treat and take care of in the hospital.

How did asciminib work for the patient you prescribed it to?

Unfortunately, it didn't work. For some reason, he was very predisposed to all the bad side effects of the drugs he tried. He went through every single drug for his type of leukemia, including asciminib, and had bad side effects from all of them. He's been a challenge to treat, but for someone who had already burned through several lines of therapy, it was great to have another option. It's going to be great to add that to the arsenal for patients like him.

What does it say about the general state of leukemia research that every year, there are new medications coming out and new research being done?

I started graduate school over a decade ago, when immune therapies were just starting to come out. The pace of approvals for immune therapies is accelerating year by year. It's an amazing time to be in science and research. For so long, the conventional therapies for leukemias hadn't changed since the 1950s and 1960s. The progress in the past 10 to 20 years has been unbelievable. It feels really good to be part of that, as a scientist and a physician, and be able to give people hope where they didn't have it before.

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