

Revisiting a Safer Alternative to Toxic Chemotherapies

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November 15, 2024 By [Damon Runyon Cancer Research Foundation](#)

Although many childhood cancers are now curable with chemotherapy, these lifesaving treatments often carry serious long-term side effects. Studies have shown, for example, that childhood cancer survivors are fifteen times more likely than the general population to suffer from congestive heart failure. For patients and pediatric oncologists, the toxicity of chemotherapy drugs is tolerated only because there are no better options—in the United States, that is.

In China, a compound known as aclarubicin, found naturally in *Streptomyces* bacteria, is widely used as an inexpensive, safe, and effective treatment for leukemia. The drug is not available in the U.S., however, because the compound is not patented, and without a patent, there is no incentive for pharmaceutical companies to invest in clinical trials. In other words, medical economics, not medical concerns, prevent widespread use of this drug among American cancer patients.

Former Damon Runyon-Sohn Pediatric Cancer Fellow Jay F. Sarthy, MD, PhD, aims to change this. In his lab at Seattle Children's Research Institute, Dr. Sarthy and colleagues are investigating aclarubicin as a treatment for pediatric leukemias and lymphomas. Due to the lack of industry funding, the team is relying on philanthropic support to advance their research. "Support from charities has been critical," said Dr. Sarthy.

The results so far have been encouraging. In an animal model of high-risk leukemia, the team found that aclarubicin kills cancer cells more effectively and safely than doxorubicin, a common chemotherapy used in the U.S.

One of the lab technicians who helped with this study was current Damon Runyon SPARK Scholar Carli Newman. A childhood cancer survivor herself, Carli says, "The human impact of cancer is always at the forefront of my attention."

The team is excited about the possibility that aclarubicin may one day be available to patients on this side of the world.

"We showed that you can give this drug at the highest levels ever administered, and we had 100% survival in the model. It shows how promising it could be," said Dr. Sarthy.

This blog was published by [Damon Runyon Cancer Research Foundation](#) on October 12, 2024. It is republished with permission.

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