Positive results for phase 1 trial of ivosidenib against AML

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Daniel A. Pollyea, MD, MS. Credit: University of Colorado Cancer Center

Early phase clinical trial results presented today at the American Society of Clinical Oncology (ASCO) Annual Meeting 2018 of 258 patients with IDH1+ acute myeloid leukemia (AML) treated with the IDH1 inhibitor

ivosidenib show an overall response rate of 41.9 percent, with median progression free survival of 8.2 months. Twenty-four percent of patients achieved a complete response.

The gene IDH1 is cousin to another AML driver, IDH2, which is targeted by the drug enasidenib, which earned FDA approval in 2017. Though the function of both IDH genes is complex, previous work has shown that mutations in either IDH1 or IDH2 can activate other oncogenes while muting the action of tumor-suppressor genes. Both enasidenib and now ivosidenib seek to disrupt the action of these mutated IDH genes.

The current study takes place in the context of increased understanding of the underlying genetics that drive AML.

"Ten years ago, the first cancer genome was sequenced, and it was from an AML patient," says Daniel A. Pollyea, MD, MS, investigator at the University of Colorado Cancer Center and clinical director of Leukemia Services at the CU School of Medicine. AML has remained a frontrunner in the genetic sequencing of cancer, leading to a robust understanding of the genes the drive the condition.

"We know about 50 or so genes that contribute to AML and now researchers are working to design and test drugs that treat the most common and the most powerful of these genes," says Pollyea, presenting author of the current study at ASCO. CU Cancer Center was one of the early sites to offer the current trial.

The conventional wisdom, Pollyea says, is that attacking AML will depend on developing targeted treatments against many, most, or all of these genetic drivers, and then sequencing patients' tumors to match individual cancers with the drug or drugs that target their specific genetic drivers. (In fact, this strategy encapsulates the philosophy of

targeted treatments against cancer, in general.) Parallel to these efforts to match oncogenes with targeted treatments, Pollyea points out that strategies that attack leukemia stem cells also hold promise.

"I think ivosidenib is going to be an important weapon in the arsenal," Pollyea says. "It's a very well tolerated oral therapy for patients who have few options and it will be an important new tool for us to use."

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