

Epigenetic therapy shows promise in hard-to-treat lung cancer

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Patients with recurrent metastatic non-small cell lung cancer have a morbid prognosis, but a new epigenetic therapy may have potential for this population, according to data published in *Cancer Discovery*, a journal of the American Association for Cancer Research.

A research team at Johns Hopkins University tested a combination epigenetic therapy of azacitidine and entinostat among 45 patients with recurrent metastatic non-small cell [lung cancer](#) who had been heavily pretreated with other therapies but showed no response. Each patient received azacitidine on nine days and entinostat on two days per month. The trial had an “open-label” design, in which all patients received the treatment and there was no control group receiving a placebo.

Researchers found a median survival of 6.4 months with treatment, where the typical survival for this patient [population](#) is four months. Patients who showed signs of gene methylation reversal in at least two of four key genes had better survival than the rest, and two patients experienced dramatic tumor shrinkages.

Four of the 19 patients who received subsequent anticancer therapies had a major objective response to immediate subsequent treatment with other agents. Seven patients remain alive, including two who began treatment approximately four years ago.

“We are starting to show traction for epigenetic therapy for one of the most difficult-to-treat tumors,” said Stephen A. Baylin, M.D., professor

and deputy director of the Kimmel Cancer Center at Johns Hopkins University and leader of the Stand Up To Cancer (SU2C) Epigenetics Dream Team. “This study appears to show the first durable successes in solid tumors with epigenetic therapy.”

This drug combination has previously shown efficacy among [patients](#) with leukemia.

“We hope these results lead to a larger, more definitive clinical trial of this drug combination,” said Charles Rudin, M.D., Ph.D., professor of oncology and director of the Upper Aerodigestive Cancer Program at Hopkins’ Kimmel Cancer Center. Rudin led the team of physicians and cancer biologists who conducted the study.

This research is funded in part by SU2C, a Specialized Programs of Research Excellence (SPORE) grant from the National Cancer Institute (NCI) and the Flight Attendant Medical Research Institute.

“This research would not have been possible, especially at this accelerated pace, without Stand Up To [Cancer](#),” said Baylin. “Our SU2C Dream Team has benefitted enormously from the initiative’s vision and visibility. The funding helps leverage other support mechanisms, like our SPORE grant from the NCI, which could never separately fund a trial of this magnitude and scope. It has enabled incredibly fruitful collaborations and allowed us, most importantly, to make a real difference in peoples’ lives.”

Provided by American Association for Cancer Research

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