

University of Calgary research leads to brain cancer clinical trial

October 14 2014

Researchers at the University of Calgary's Hotchkiss Brain Institute (HBI) and Southern Alberta Cancer Research Institute (SACRI) have made a discovery that could prolong the life of people living with glioblastoma – the most aggressive type of brain cancer. Samuel Weiss, PhD, Professor and Director of the HBI, and Research Assistant Professor Artee Luchman, PhD, and colleagues, published their work today in *Clinical Cancer Research*, which is leading researchers to start a human phase I/II clinical trial as early as Spring 2015.

Researchers used tumour cells derived from 100 different glioblastoma patients to test drugs that could target the disease. When these human [brain tumour](#)-initiating cells were inserted into an animal model, researchers discovered that when using a drug, AZD8055, combined with Temozolomide (TMZ) – a drug already taken by most glioblastoma patients – the life of the animals was extended by 30 per cent.

"Shutting off vital tumour growth processes can lead to the death of human brain tumour-initiating cells. Our research has identified a key process in brain tumour growth that we were able to target with AZD8055," says Luchman from the university's Cumming School of Medicine and a member of the HBI.

Researchers used the new therapy to inhibit a pathway in the cancer cells known as mTOR signaling – putting the brakes on this pathway, combined with the current standard therapy, caused more of the [cancer cells](#) to die. Scientists are now working with investigators at the NCIC

Clinical Trials Group (NCIC-CTG) to start a Canadian clinical trial that may eventually include glioblastoma patients across the country.

"Discovering new pathways and therapies that can be tested in the clinic provides the greatest hope for [brain cancer](#) patients and their families," says Weiss, leader of the university's Brain and Mental Health strategic research priority.

Glioblastoma is the most common and deadly form of brain cancer among adults. The progression and complexity of the tumours are often difficult to treat. The median survival for patients is 15 months, with less than five per cent of patients surviving beyond five years.

University of Calgary researchers including Luchman, Weiss and Dr. Greg Cairncross – director of SACRI, and leader of the Terry Fox Research Institute (TFRI) 'Therapeutic Targeting of Glioblastoma' research program at the university – are now working with cancer researchers Dr. Warren Mason (Princess Margaret Cancer Centre in Toronto) and Dr. Lesley Seymour (Director of the NCIC Clinical Trials Group's Investigational New Drug Program), and drug manufacturer AstraZeneca, to plan a clinical trial testing a similar, but newer, drug related to AZD8055 (called AZD2014), in combination with TMZ, in patients with glioblastoma.

"This is an important initiative – to test new drugs, being developed for other types of cancers in the laboratory to identify which are most promising for testing in patients with glioblastoma. NCIC CTG is excited to partner in the development of this clinical trial, which will be funded by a grant from the TFRI as well as grants from Canadian Cancer Society Research Institute to NCIC CTG," says Seymour.

Provided by University of Calgary

Citation: University of Calgary research leads to brain cancer clinical trial (2014, October 14) retrieved 11 July 2023 from <https://medicalxpress.com/news/2014-10-university-calgary-brain-cancer-clinical.html>

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