Revamped drug may overcome resistance in brain tumours

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Cancer Research UK scientists have taken steps to overcome drug resistance in glioblastoma, the most common type of brain tumour in adults, according to research published in *Molecular Cancer Therapeutics*.

Scientists at the University of Bradford, along with colleagues in the USA and Finland, have created a modified version of the cancer drug temozolomide, the first-line treatment for glioblastoma.

The Cancer Research UK team has shown in the laboratory that the revamped drug – called DP68 – is better than temozolomide at killing cancer cells. And it significantly reduced the regrowth of tumour cells that had become resistant to temozolomide.

Glioblastomas account for more than a quarter of all primary brain tumours, with around 2,500 people diagnosed with the disease every year in the UK.

Cancer Research UK led on the development of temozolomide, which marked an important breakthrough in the treatment of glioblastoma. It has become the international standard of care for thousands of patients with this type of cancer. But in many cases the cancer cells become resistant. And, once the disease returns, it is very hard to treat.

Study author, Dr Richard Wheelhouse, based at the University of Bradford, said: "Temozolomide is a widely-used treatment for patients with glioblastoma. But, when resistance to the drug develops, the tumours often grow back more aggressively so it's crucial to find new ways of outmanoeuvring the cancer cells.

"DP68 could become a vital treatment for glioblastoma patients who've developed resistance to the first-line treatment. It's still early days but, unlike temolozomide that's only used to treat gliomas, we hope this new version of the drug may benefit patients with other cancer types."

Professor Peter Johnson, Cancer Research UK's chief clinician, said: "We still need to do much more research in the treatment of brain tumours, where progress has been painfully slow. It is very encouraging to think that this drug might be helpful for people whose cancer stops responding to treatment. Innovative research like this is crucial to find vital new treatments to improve survival."

More information: "Evaluation of novel imidazotetrazine analogues designed to overcome temozolomide resistance and glioblastoma regrowth." *Mol Cancer Ther*. 2014 Oct 28. pii: molcanther.0113.2014. [Epub ahead of print] www.ncbi.nlm.nih.gov/pubmed/25351918