Lay Summary

BRAIN UK Ref: 18/009

Dissecting GBM invasion

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Glioblastoma (GBM) is the most common and aggressive type of primary brain tumour, with 2,200 new cases diagnosed each year in the UK. Despite available therapies, the median survival of GBM patients remains at less than 15 months and 5-year survival rate at less than 5%. There is therefore an urgent medical need to increase basic and translational research in this devastating disease.

A major reason for this dismal prognosis is the invasion of GBM cells into the normal brain. Invasion is a major clinical challenge because it prevents complete surgical resection and hinders radiotherapy, resulting in tumour regrowth from residual invasive cells. GBM cells invade into the brain by hijacking pre-existing structures such as blood vessels and white matter tracts (WMT). WMT infiltration is particularly common, yet despite its importance, the molecular basis of this type of invasion remains almost entirely unknown.
We have identified molecules that are increased in white matter invading cells in mouse models and would now like to understand how relevant these are to the human disease. These studies have the potential to identify novel markers and therapeutic targets to block GBM invasion and recurrence.