

Lay Summary

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Microglia activation in IDH1 WT glioma is essential for peripheral macrophage recruitment

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Glioma is the most common brain tumour in adults. Gliomas are made up of both tumour cells and non-tumour cells. The majority of non-tumour cells consist of immune cells called macrophages or microglia. Macrophages come from the bloodstream whereas microglia are present in the brain as the resident immune cells. Collectively these two cell types are known as tumour associated macrophages (TAMs). TAMs have been shown to contribute to the progression and spread of glioma.

There are certain groups of patients that have a much better prognosis. These patients have tumour cells that contain a specific mistake in their DNA known as a mutation. These mutations are called IDH1 mutations. IDH1 mutant patients have been shown to contain more microglia than macrophages whereas glioma patients that do not carry this mutation contain more macrophages than microglia. We have found that microglia are activated in a different way in the presence of certain types of gliomas and are essential for the recruitment of macrophages. In this study we want to confirm our findings in human patient tissue and as well as trying to understand what factors are released from microglia that attract macrophages into the glioma tumour.