

Lay Summary

BRAIN UK Ref: 19/009

Characterisation of the Glioblastoma Immune Microenvironment

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Glioblastoma (GBM) is the most common form of brain cancer in adults. If treated, the average survival in patients with this diagnosis is 14 months. So there is an urgent clinical need for new and improved treatments. Glioblastoma cells exploit the brain's internal safety systems which means the cancer cells evade detection. This means that treatments tend to fail. The biology of brain tumours, their environment and how tumour cells interact with it are poorly understood. The tumour's environment contain cells which are part of the immune system and it is thought that these cells protect the tumour from the different treatments and support tumour growth. Our project wants to find out which cells are present in the tumour's environment and find out which genes are active and which ones are switched off. We will be performing this analysis using stored tumour tissues. Specifically we will be staining the tissues with fluorescent dyes. This will identify the different cells present. We will also be measuring the activity of genes related to the immune system and link them with the clinical data to uncover molecular pathways conferring resistance or sensitivity to a particular treatment. This body of work will give us new insight into the communication between cancer cells and normal cells within the brain.