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Innate immune landscape in glioblastoma patient tumors

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Glioblastoma is an extremely aggressive brain tumor with limited treatment options. Recent progress in using immunotherapy-based treatment options in other tumor types has spurred interest in developing approaches that might be effective in this devastating malignancy. Myeloid-derived innate immune cells, such as macrophages, microglia, and myeloid-derived suppressor cells, are known to be present within glioblastomas.

Previous work suggested that the tumor microenvironment triggers microglia and macrophages to polarize to a cell state that dampens immune responses to tumors; however, there has been only a limited assessment of the immune cell populations in patient tumors.

In this month's issue of *JCI Insight*, Amy Heimberger and colleagues at the University of Texas MD Anderson Cancer Center provide a comprehensive analysis of myeloid lineage immune cells in the circulation and in tumors of glioblastoma patients.

Their extensive survey relied on immune phenotyping, whole genome microarray analysis, and microRNA expression profiling to characterize myeloid cells in surgical samples from 43 patients.

Their results surprisingly indicated that glioblastoma-associated myeloid cells were most similar to non-polarized cells. Importantly, these findings suggest that strategies to stimulate myeloid cells to assume an anti-tumor identity may be possible and merit future exploration.

More information: Konrad Gabrusiewicz et al. Glioblastoma-infiltrated innate immune cells resemble M0 macrophage phenotype, *JCI Insight* (2016). DOI: 10.1172/jci.insight.85841