ABSTRACT

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Emerging Concepts on the Role of Extracellular Vesicles and Its Cargo Contents in Glioblastoma-Microglial Crosstalk.

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Glioblastoma multiforme is the most common, highly aggressive malignant brain tumor which is marked by highest inter- and intra-tumoral heterogeneity. Despite, immunotherapy, and combination therapies developed; the clinical trials often result into large number of failures. Often cancer cells are known to communicate with surrounding cells in tumor microenvironment (TME). Extracellular vesicles (EVs) consisting of diverse cargo mediates this intercellular communication and is believed to modulate the immune function against GBM. Tumor-associated microglia (TAM), though being the resident innate immune cell of CNS, is known to attain pro-tumorigenic M2 phenotype, and this immunomodulation is aided by extracellular vesicle-mediated transfer of oncogenic, immunomodulatory molecules. Besides, oncogenic proteins, long non-coding RNAs (IncRNAs), are believed to carry oncogenic potential, and therefore, understanding the mechanism leading to microglial dysregulation mediated by GBM-derived extracellular vesicle (GDEV) IncRNAs becomes crucial. This review focuses on current understanding of role of GDEV and IncRNA in microglial dysfunction and its potential as a therapeutic target.

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