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How OXA GENE Expression is Implicated in the Treatment Resistance and Poor Prognosis in Glioblastoma

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Abstract : The current poor prognosis of glioblastoma has called for the need for an improvement in treatment methods in order to improve its survival rate. Despite the different interventions currently available for this tumor, the average survival is still only a few months. (12-15). The aim is to create a more favorable prognosis and have a reduction in the resistance to treatment currently being experienced, even with surgical interventions and chemotherapy. From the available literature, there is a relationship between the presence of HOX genes (Homeobox genes) and glioblastoma, which could be attributable to the increasing treatment resistance. Hence silencing these genes can be a key to improving survival rates of glioblastoma. A series of studies have highlighted the role that HOX genes play in glioblastoma prognosis. Promotion of human glioblastoma initiation, aggressiveness, and resistance to Temozolomide has been associated with HOXA9. The role of HOX gene expression in cancer stem cells should be studied as it could provide a means of designing CSC-targeted therapies, as CSCs play a part in the initiation and progression of solid tumors.

Keywords : GBM- glioblastoma, HOXA gene- homeobox genes cluster, signaling pathways, temozolomide
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