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Intra-arterial chemotherapy for malignant gliomas: a critical analysis.

Burkhardt JK, Riina HA, Shin BJ, Moliterno JA, Hofstetter CP, Boockvar JA.

Department of Neurological Surgery, Weill Cornell Brain Tumor Center, Weill Cornell Medical College, New York Presbyterian Hospital; New York, USA - E-mail: jab2029@nyp.org.

Abstract

Intra-arterial (IA) chemotherapy for malignant gliomas including glioblastoma multiforme was initiated decades ago, with many preclinical and clinical studies having been performed since then. Although novel endovascular devices and techniques such as microcatheter or balloon assistance have been introduced into clinical practice, the question remains whether IA therapy is safe and superior to other drug delivery modalities such as intravenous (IV) or oral treatment regimens. This review focuses on IA delivery and surveys the available literature to assess the advantages and disadvantages of IA chemotherapy for treatment of malignant gliomas. In addition, we introduce our hypothesis of using IA delivery to selectively target cancer stem cells residing in the perivascular stem cell niche.

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