Delivery strategies of chemotherapy to the central nervous system
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The research thoroughly reviews the importance of the blood-brain barrier (BBB) and the blood-tumor barrier (BTB) along with the current status and future perspectives of interesting physical and surgical strategies to circumvent these central nervous system (CNS) barriers in the treatment of malignant brain tumors.

In this paper, the authors particularly focus on assessing the development of a selected number of strategies that enhance the distribution of therapeutic agents to the CNS in the context of neuro-oncology. This review is unique in the sense that it concentrates on surgical and physical delivery methods that are of present-day interest and in current development. The following strategies are discussed in this review: intra-arterial delivery, osmotic BBB disruption, intra-nasal delivery, convection-enhanced delivery, implanted polymers, magnetic microspheres and ultrasound BBB disruption. For each delivery method, un-biased and up to date information on the current technique, preclinical data and available clinical data is provided.

This detailed overview on the topic will raise great interest in the oncology community as it is shown to be a greatly prospering field of research. Finally, the authors also underline the importance of encouraging collaborations to allow greater progress in preclinical and clinical research with the overall goal to find ways to better impact patient outcomes and survival.


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