Neurocognitive functioning in adult WHO grade II gliomas: impact of old and new treatment modalities.

Klein M.

Department of Medical Psychology, VU University Medical Center, Amsterdam, The Netherlands. m.klein@vumc.nl

Abstract

In the treatment of patients with low-grade glioma, there still is controversy on how surgical intervention, radiation therapy, and chemotherapy contribute to an ameliorated progression-free survival, overall survival, and treatment-related neurotoxicity. With the ongoing changes in treatment options for these patients, neurocognitive functioning is an increasingly important outcome measure, because neurocognitive impairments can have a large impact on self-care, social and professional functioning, and consequently, health-related quality of life. Many factors contribute to neurocognitive outcome, such as direct and indirect tumor effects, seizures, medication, and oncological treatment. Although the role of radiotherapy has been studied extensively, the adverse effects on neurocognitive function of other treatment-related factors remain elusive. This holds for both resective surgery, in which the use of intraoperative stimulation mapping has a high potential benefit concerning survival and patient functioning, and the use of chemotherapy that might have some interesting new applications, such as the facilitation of total resection for initially primary or recurrent diffuse low-grade glioma tumors. This article will discuss these treatment options in patients with low-grade glioma and their potential effects on neurocognitive functioning.