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A Brief Report on Treatment of Glioblastoma

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Introduction

Gliomas account for approximately 80% of malignant brain tumours and 30% of all CNS tumours. Gliomas are a diverse group of cancers that originate in the supporting cells of the brain. More than 18,500 new cases of malignant glioma and 13,000 deaths from the disease are reported annually in the United States. The World Health Organization distinguishes four types of glioma: oligodendroglioma, astrocytoma, ependymoma, and pilocytic astrocytoma. A second system of tumor grade (I–IV) is defined by histopathological characteristics, specifically the levels of nuclear polymorphism, increased mitotic activity and cellularity, as well as the presence of neovascularization and necrosis. In addition, advances in next-generation sequencing have made it possible to identify genetic abnormalities in gliomas, which have been used to supplement the diagnosis of gliomas [1].

Description

Astrocytes are the source of glioblastoma, a cancer of the central nervous system (brain or spinal cord). With incidence rates of 2.05 cases per 100,000 patients in the United Kingdom and 3.19 cases per 100,000 patients in the United States, it is one of the most common primary brain cancers. Currently, glioblastoma treatment consists of radiotherapy, adjuvant chemotherapy with temozolomide, and surgical resection of the tumor. However, complete surgical resection of gliomas is extremely challenging because of the local invasion and infiltration of surrounding tissue; Consequently, the tumor recurs, resulting in the death of glioblastoma patients. By preventing chemotherapeutic agents from reaching the central nervous system (CNS), the presence of the blood–brain barrier (BBB) also reduces the effectiveness of chemotherapy. Additionally, chemotherapy drugs' efficacy may decrease further [2]. Chemotherapy and radiotherapy, two common anticancer treatments, are cytotoxic, which means they harm cancer cells' DNA. However, when these treatments are used as a single therapy, there are a number of limitations due to the high heterogeneity of solid tumors and the deregulation of various cell signaling pathways. Due to the tumor's heterogeneity, aggressive invasiveness into surrounding tissues, and presence of BBB, glioblastoma is extremely challenging to treat.

Glioma treatment usually starts with an operation to remove the glioma. Surgery might be the only treatment needed if all of the glioma is removed. Sometimes the glioma can't be removed completely. The surgeon may remove as much of the glioma as is possible. This procedure is sometimes called a subtotal resection. It might be needed if the glioma can't easily be separated from the healthy brain tissue. It can also happen if the glioma is in a sensitive part of the brain. Even removing a portion of the tumor may help reduce your symptoms. Surgery to remove a glioma carries risks. These include infection and bleeding. Other risks may depend on the part of your brain in which your tumor is located. For instance, surgery on a tumor near nerves that connect to your eyes may carry a risk of vision loss.

Glioblastoma can be effectively treated with multimodal therapeutic approaches, which combine different therapies or therapeutic agents with different molecular mechanisms to have a greater cytotoxic effect on tumor cells [3]. By exposing the DNA of tumor cells to the harmful effects of a second agent through the use of a first agent, the multimodal therapeutic approach, in particular, can be effective. The impact of various natural compounds on the onset, progression, and spread of cancer has been the subject of a number of epidemiological studies in recent years. The use of natural products for the maintenance of health, enhancement of mental and physical well-being, and prevention of disease has captivated humans for a long time [4,5].

Conclusion

In addition to their synergistic effects on reducing radiotherapy/chemotherapy complications and increasing the efficacy of cancer therapies, a number of studies have reported the radio/chemoprotective role of some natural compounds when used in conjunction with radiotherapy and chemotherapy. Additionally, some of them have the ability to cross the BBB, which is an important factor to take into account when developing CNS therapies. Curcumin, epigallocatechin gallate (EGCG), and resveratrol are just a few of the natural compounds that have been shown to have anti-cancer properties and chemo preventive potential (RES).

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Conflict of Interest

The authors declare that there is no conflict of interest associated with this manuscript.

References

1. Franke, Martin, Daniel M Ibrahim, Guillaume Andrey and Wibke Schwarzer. "Formation of new chromatin domains determines pathogenicity of genomic duplications." *Nature* 538 (2016): 265–269.
2. Javierre, Biola M, Oliver S.Burren, Steven P.Wilder and Roman Kreuzhuber. "Lineage-specific genome architecture links enhancers and non-coding disease variants to target gene promoters." *Cell* 167 (2016): 1369–1384.e19.
3. Cohen Justin M, David L Smith, Chris Cotter and Abigail Ward. "Malaria resurgence: A systematic review and assessment of its causes." *Malar J* 11 (2012):122.
4. Eylem, Ocal, Beverly Irwin, Douglas Cochrane and Ash Singhal. "Stridor at birth predicts poor outcome in neonates with myelomeningocele." *Childs Nerv Syst* 28(2012): 265–271.
5. Ohrt, Colin, Kathryn W Roberts, Hugh J W Sturrock and Jennifer Wegbreit. "Information systems to support surveillance for malaria elimination." *am j trop med hyg* 93 (2015): 145–152.

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