OPEN ACCESS Freely available online

ISSN: 2168-975X
Brain Disorders & Therapy

Opinion Article

Treatment of Brain Tumors Using Radiation Therapy

Baoshan Juli*

Department of Neurology, Georgetown University, Doha, Qatar

DESCRIPTION

High-energy x-rays or other particles are used in radiation treatment to destroy tumor cells. Radiation therapy is one method that doctors may employ to delay or stop the growth of a brain tumor. It is often administered following the surgery and can also be combined with chemotherapy. External-beam radiation therapy, or radiation delivered from a device outside the body, is the most used form of radiation therapy. Internal radiation therapy, also known as brachytherapy, is the term used when radiation therapy is administered *via* implants. A radiation therapy regimen, often referred as a schedule, usually has a predetermined number of treatments spread out over a specified period of time.

Stereotactic radiosurgery might also be an alternative for some patients with 5 to 10 tumors. In order to minimize the adverse effects, stereotactic radiosurgery concentrates the radiation only on the brain tumor. The radiation dose may be administered in a single treatment, known as a single fraction, or over a course of several doses, known as a multifraction. Some patients may be eligible for whole-brain radiation therapy, which involves providing radiation to the entire brain. If whole-brain radiation therapy is prescribed, our doctor can recommend measures to minimize radiation exposure to the brain and the use of a drug called memantine.

EXTERNAL BEAMS

Conventional radiation therapy

Anatomical landmarks and x-rays are used to pinpoint the treatment site. This method is suitable in some circumstances, such as whole-brain radiation therapy for brain metastases. Different methods are required for targeting that is more exact. The grade of the tumor determines how much radiation is administered.

A 3-dimensional computer model of the tumor and surrounding healthy tissue is made using pictures from CT and MRI scans in 3-Dimensional Conformal Radiation Therapy (3D-CRT). Using this concept, radiation beams can be pointed directly at the tumor, avoiding the healthy tissue and low dosages of radiation therapy.

3D-CRT that uses Intensity-Modulated Radiation Therapy (IMRT) can more precisely target a tumor. The radiation beams are divided into smaller beams, and the intensity of each of these smaller beams can be adjusted. This allows for stronger radiation doses to be delivered to the tumor while giving less radiation to the healthy tissue around it. As a result, only the tumor can receive the stronger beams, or beams that deliver more radiation.

Proton therapy

Proton treatment is a form of external-beam radiation therapy in which protons are used in place of x-rays. Protons have a great energy and can obliterate cancerous cells. When less radiation is required due to the tumor's location, proton beam therapy is often performed. This includes tumors close to the optic nerve as well as those that have spread into adjacent bone, such as the base of the skull.

Stereotactic radiosurgery

Stereotactic radiosurgery is using single, strong radiation dose that is directed at the tumor rather than healthy tissue. It works best for non-cancerous tumors and tumors that are restricted to a single region of the brain. When a person has more than one metastatic brain tumor, it can also be applied.

Fractionated stereotactic radiation therapy

In contrast to radiosurgery, which is performed in a single day, radiation treatment is administered with stereotactic precision but is spread out over a number of days or weeks in the form of fractions, which are modest daily doses. This method is applied on tumors that are adjacent to delicate structures like the brain stem or optic nerves.

Correspondence to: Baoshan Juli, Department of Neurology, Georgetown University, Doha, Qatar, E-mail: baoshanjuli@gmail.com

Received: 03-Oct-2022, Manuscript No. BDT-22-18650; **Editor assigned:** 06-Oct-2022, Pre QC No. BDT-22-18650 (PQ); **Reviewed:** 20-Oct-2022, QC No BDT-22-18650; **Revised:** 27-Oct-2022, Manuscript No. BDT-22-18650 (R)**Published:** 03-Nov-2022, DOI: 10.35248/2168-975X.22.11.174.

Citation: Juli B (2022). Treatment of Brain Tumors Using Radiation Therapy. Brain Disord The. 11:174.