

**Fact Sheet**

**Glioblastoma Multiforme: Role of Physical Therapy and Research Updates**

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**The Role of Physical Therapy**

The physical therapist focuses on maximizing function, preventing complications of immobility, and providing support, thereby improving the patient’s quality of life15 during the initial diagnosis of GBM, throughout and after the medical treatment phase. Physical therapists are in a distinctive position to assist the patient in participating in an exercise regimen which have been reported to decrease fatigue, enhance functional abilities, and improve quality of life.16 Assisting the patient to identify unique elements in their quality of life will enhance the establishment of a meaningful treatment program. When establishing goals, it is necessary for all – patient, team members, family, caregivers, and third-party payers – to consider the preferred discharge environment, the patient, and their caregiver’s goals.

The physical therapist establishes the appropriate treatment plan with the understanding of the nature and course of GBM, the possible effects and side effects of their medical treatment, and eventual regression of body functions and functional abilities due to disease progression. Low blood count, gastrointestinal complaints, and fatigue17 are some of the side effects that can affect the patient’s participation in their rehabilitation. The use of corticosteroids and anticonvulsant medications can also cause weight gain, cushingoid syndrome, diabetes, myopathy, increased susceptibility to infections, altered reaction time, slowing of cognitive functioning, and even movement disorders such as ataxia or dysarthria.18,19 Flexibility in the rehabilitative program, time, and goals should be employed by the physical therapist to become effective and meaningful.

Personality changes, cognition changes, fluctuations or changes in mood and temperament can also arise. The patient’s learning style may change, or the caregiver may report changes in patient’s behavior over time and should be further investigated. Use of alternative strategies may become necessary to carry out patient-specific interventions.20,21

A time may come that treatments may become ineffective and the disease continues to progress.22 At end-of-life care, the physical therapist participates in continued care by focusing on the patient’s comfort, range of motion, positioning, pain relief, and caregiver support.

**Research Updates**

Researchers are always investigating the use of innovative new treatments when the first line of therapy has failed. Clinical trials in gene therapy, highly focused radiation therapy, immunotherapy (CAR T-cell therapy,

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pembrolizumab), and vaccines (cytomegalovirus dendritic cell vaccines) are ongoing.4,23–25

Analyzing DNA in blood samples also showed high accuracy for detecting gliomas. This could potentially be useful for developing treatment plan before surgery and non-invasively monitor how patients respond to treatments.26

GBM is a disease that affects the entire family, so it is also important to assess the impact of the disease and treatment on them, and there is increasing movement towards incorporating a patient-outcomes focus in studies. This takes a holistic view of the impact of the disease and treatment on the patient and family, and the issues that they are dealing with.27,28

There is also evidence that women tend to respond better than men to standard treatment for GBM, although the reasons for this sex difference are not clear. One focus of investigation in this sex difference is the presence of IDH1 mutations in tumors, which were aligned with longest-surviving female clusters but was not true in the male clusters.31–33

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