TRADITIONAL MEDICINE IN THE TREATMENT OF BRAIN TUMORS: POSITIVE AND NEGATIVE INFLUENCES — AN EXTENSIVE LITERATURE REVIEW

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Abstract Brain tumors remain among the most challenging disorders in modern medicine due to their complex biological behavior, limited accessibility for surgical intervention, and often aggressive progression. As conventional treatments such as surgery, radiotherapy, and chemotherapy advance, many patients continue to rely on traditional and folk medicine as complementary or alternative therapy. This extended review evaluates the potential benefits and risks of traditional remedies in brain tumor management, including herbal extracts, spiritual and energy-based techniques, detoxification methods, and dietary approaches. Although some natural compounds demonstrate antioxidant, anti-inflammatory, or immunomodulatory effects, there is still no reliable scientific evidence proving that any traditional remedy can cure or shrink brain tumors. Moreover, inappropriate use of such methods may interfere with standard treatment, delay diagnosis, or cause severe toxicity. This analysis emphasizes the need for informed and medically supervised use of traditional approaches.

Keywords: brain tumors, traditional medicine, folk therapy, herbal extracts, complementary oncology, toxicity, drug interactions.

Introduction Brain tumors represent a diverse group of neoplasms originating from glial, meningeal, neuronal, or metastatic sources. Despite improvements in diagnostic imaging and neurosurgical techniques, brain tumors still contribute significantly to global morbidity and mortality. Patients often

experience fear, anxiety, and distrust toward surgical or chemotherapeutic procedures, leading them to explore alternative treatment systems, especially traditional or folk medicine (1).Traditional healing practices vary greatly across regions. In Central Asia, for example, patients commonly use herbal infusions, honey-based mixtures, fire cupping, and “blood-cleansing” methods. In East Asian cultures, traditional Chinese medicine (TCM), acupuncture, and mushroom extracts are prevalent. In South Asia, Ayurvedic treatments, turmeric, and spiritual rituals are frequently used (2).Despite their popularity, the real clinical value of these remedies remains controversial. Some bioactive compounds have demonstrated anticancer potential in laboratory settings, yet most lack standardized dosing, controlled trials, or evidence of safety in patients with brain tumors. Scientific concerns include pharmacological interactions, hepatotoxicity, contamination with metals, and the risk of delaying life-saving medical care (3).The purpose of this extended review is to critically examine both positive and negative influences of traditional medicine on brain tumor treatment by providing an in-depth analysis of published scientific data.

MethodsThis review followed a qualitative research approach. The search was conducted through PubMed, Scopus, ScienceDirect, Google Scholar, and Web of Science. Keywords included:“brain tumors,” “glioblastoma,” “herbal therapy,” “traditional medicine,” “alternative cancer treatment,” “Ayurveda oncology,” “Chinese herbs,” “toxicity,” “tumor progression.”

Inclusion criteria:Studies published between 2000–2024.Articles examining herbs, natural compounds, spiritual or energy healing, detox diets, and non-conventional therapies used for cancer or specifically for brain tumors.Experimental research evaluating biological effects on tumor cells.Clinical observations or case reports involving real patients.Exclusion criteria:papers unrelated to oncology or neurological diseases.Remedies used only for symptom relief without cancer relevance.Articles lacking methodological detail.In total, 112 articles were screened, and 62 studies were selected for this expanded review.

Results Possible Positive Influences-antioxidant and anti-inflammatory properties.Oxidative stress contributes to tumor progression and genetic instability. Several herbs used in traditional medicine, such as turmeric (curcumin), ginseng, ginger, garlic, Boswellia serrata, and green tea polyphenols, exhibit antioxidant effects (4).

Curcumin has demonstrated inhibitory activity against glioblastoma cell lines in vitro (5). Green tea catechins such as EGCG can suppress angiogenesis — the process of new blood vessel formation needed for tumor growth (6).Immune system modulation.The immune system plays a vital role in detecting and eliminating cancer cells. Some traditionally used mushrooms — Ganoderma lucidum, Cordyceps sinensis, Grifola frondosa — enhance macrophage activity, natural killer cell function, and cytokine production (7).However, studies show only supportive, not curative, effects.Symptom relief and quality-of-life improvement.Herbal teas (chamomile, mint), aromatherapy, and acupuncture may reduce chemotherapy-induced nausea, pain, anxiety, and insomnia (8).

Acupuncture may help restore facial nerve function in patients after neurosurgery (9).Anti-tumor properties in laboratory studies.Some compounds exhibit anti-proliferative effects against brain tumor lines in vitro:Resveratrol (found in grapes) inhibits glioma cell migration (10).Withaferin A (Ayurvedic herb Withania somnifera) induces apoptosis in tumor cells (11).Berberine (from barberry) shows anti-glioma effects (12).

However, no clinical trial proves that these herbs cure brain tumors in humans.

Negative Influences and Risks. Delayed diagnosis and treatment-the most common risk associated with traditional medicine is treatment delay. Patients often rely on home remedies instead of seeking medical help, allowing tumors to progress to advanced stages when surgery becomes impossible (13).Studies from Africa and Central Asia show that up to 37% of brain tumor patients first seek folk healers (14).Herb–drug interactions-herbal products may interfere with the metabolism of chemotherapeutic agents:St. John’s wort reduces the effectiveness

of temozolomide — the main chemotherapy for glioblastoma (15).Ginkgo biloba increases bleeding risk during neurosurgery (16).Garlic and ginseng alter platelet function, increasing hemorrhage risk (17).Turmeric may interfere with radiotherapy sensitivity (18).Toxicity and organ damage-unregulated remedies sometimes contain heavy metals like lead, mercury, or arsenic due to improper manufacturing (19).Ayurvedic herbs may contain hepatotoxic alkaloids that cause liver injury, which is especially dangerous for cancer patients already under drug stress (20).False expectations and psychological dependence-many traditional healers promise “complete cure,” which leads to emotional manipulation, financial exploitation, and reduced adherence to evidence-based treatments (21).Contamination and variability of herbal products.Unlike prescription medications, traditional preparations lack standardized dosing and purity control. Different batches of the same herb may vary in concentration by up to 300% (22).Review of Specific Traditional Approaches.Herbal mixtures and infusions.Common examples include aloe vera, propolis, licorice root, nettle, and cinnamon. Some show mild anti-inflammatory effects, but none have proven clinical benefits for brain tumor regression (23).Spiritual healing, prayer, and energy therapy.Although these methods may reduce stress or improve mood, they do not influence tumor biology (24).Stress reduction can indirectly support immune function, but cannot replace medical treatment. Detox diets and fasting.Some alternative clinics promote juice fasting or “tumor detoxification.” Such diets often result in:nutrient deficiency,muscle loss,impaired immunity,worsening of treatment tolerance (25).Cannabis and cannabinoids-cannabinoids may help reduce pain, nausea, and seizures, especially in patients with brain tumors (26).However, cannabinoids have no proven tumor-killing effect. Their role remains palliative.

Discussion. The findings of this review demonstrate that although traditional medicine provides psychological comfort and mild biological effects, it cannot replace modern oncological treatments. The main dangers stem

from:pharmacological interactions,toxicity,lack of quality control,delay in medical treatment,over-reliance on unproven methods.

Some herbs may be used safely as supportive therapy — but only under medical supervision.The popularity of traditional medicine is often linked to cultural values, financial barriers, mistrust in doctors, and fear of surgery (27). For many patients, folk remedies represent “hope,” especially when prognosis is poor. Thus, doctors must communicate openly, not dismiss cultural practices, but integrate them safely.

Conclusion: Traditional medicine continues to play a significant role in the lives of brain tumor patients, offering emotional support, symptom relief, and a sense of control. Certain herbs possess promising biological properties, but none have demonstrated clinical effectiveness in shrinking or curing brain tumors.Unsupervised use of traditional remedies can cause severe harm, including toxicity, interference with chemotherapy, and delayed medical care — all of which can worsen survival outcomes.Traditional approaches may be used only as complementary, not alternative, treatments. Optimal patient outcomes are achieved when traditional practices are combined cautiously with evidence-based medicine under professional guidance.

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