

Alternative and Complementary Therapies in Cancer Treatment: Exploring the Evidence

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Introduction

Cancer treatment has witnessed remarkable progress in recent decades, with advancements in surgery, chemotherapy, radiation therapy, and immunotherapy. However, alongside conventional treatments, there has been a growing interest in alternative and complementary therapies. These therapies, which encompass a diverse range of practices, are often used alongside conventional treatments to enhance overall well-being, alleviate treatment side effects, and improve the quality of life for cancer patients. Exploring the evidence behind these alternative and complementary therapies is vital, as it helps patients and healthcare professionals make informed decisions about their integration into cancer care.

Understanding alternative and complementary therapies

Alternative therapies refer to treatments that are used in place of conventional medical treatments, while complementary therapies are used alongside mainstream medical care. Complementary therapies are often referred to as integrative therapies when they are combined with conventional treatments. These therapies can include acupuncture, massage therapy, yoga, meditation, herbal supplements, dietary changes, and mind-body techniques like relaxation and visualization.

Alleviating treatment side effects

One of the significant roles of alternative and complementary therapies in cancer treatment is managing the side effects of conventional therapies. For instance, cancer patients often experience chemotherapy-induced nausea, pain, fatigue, and anxiety. Acupuncture, an ancient Chinese practice involving the insertion of thin needles into specific points on the body, has been shown to alleviate chemotherapy-induced nausea and vomiting, improving the overall treatment experience for patients. Massage therapy, another widely used complementary approach, helps in reducing pain and promoting relaxation. It is particularly beneficial for cancer patients experiencing musculoskeletal pain or discomfort due to treatments. Additionally, yoga and meditation have been proven to reduce anxiety and stress, enhancing the emotional well-being of cancer patients undergoing treatments [1].

Nutritional and dietary interventions

Dietary changes and nutritional supplements are areas where alternative and complementary therapies intersect. Some cancer patients explore dietary modifications, such as adopting plant-based diets or eliminating certain food groups, based on the belief that nutrition plays a significant role in cancer prevention and recovery. Antioxidant-rich diets, for instance, are often considered due to their potential to neutralize free radicals, which are implicated in cancer development. However, the evidence regarding

specific dietary interventions and cancer outcomes is complex and varies across different types of cancer. While some studies suggest certain foods like cruciferous vegetables might have cancer-fighting properties, the overall impact of dietary changes on cancer prevention and treatment outcomes is a topic of ongoing research and debate [2].

Mind-body techniques

Mind-body techniques, such as meditation, mindfulness, and relaxation exercises, are integral components of many complementary therapies. These practices focus on the connection between the mind, emotions, and physical health. For cancer patients, these techniques can provide emotional support, reduce anxiety, and improve the overall quality of life. Research in the field of psychoneuroimmunology, which studies the interactions between psychological processes and the nervous and immune systems, suggests that stress reduction techniques might influence the immune response and potentially impact the progression of cancer. While the exact mechanisms are still under investigation, the benefits of these practices in enhancing the overall well-being of cancer patients are widely recognized [3].

Herbal and nutritional supplements

The use of herbal and nutritional supplements in cancer treatment and prevention is a topic of considerable interest. Some patients turn to supplements like turmeric, green tea extract, or specific vitamins and minerals, believing in their potential anticancer properties. However, it's essential to approach the use of supplements with caution. While some compounds present in certain supplements have shown promise in laboratory studies, their efficacy and safety in human cancer treatment require rigorous clinical validation. Moreover, supplements can interact with conventional cancer treatments, affecting their effectiveness or causing adverse reactions. Therefore, it's crucial for patients to discuss any supplements or alternative therapies with their healthcare providers to ensure they don't interfere with their primary cancer treatment [4].

Description

Challenges and the need for evidence-based practices

One of the significant challenges in the realm of alternative and complementary therapies is the variability in the quality and reliability of available information. The internet and social media platforms are flooded with a vast array of information, ranging from evidence-based practices to pseudoscientific claims and misinformation. Patients often find it challenging to navigate this information landscape and make informed decisions about complementary therapies. To address these challenges, there is a growing need for evidence-based practices in the field of complementary therapies. Rigorous scientific research, including well-designed clinical trials and systematic reviews, can provide valuable insights into the efficacy and safety of these therapies. Integrative oncology, which combines conventional cancer treatments with evidence-based complementary therapies, is an emerging field that aims to bridge the gap between conventional medicine and complementary practices, ensuring that patients receive safe and effective treatments. Cancer treatment is a complex and multifaceted process that often involves a combination of therapies aimed at targeting and eliminating cancer cells while minimizing damage to healthy tissues. The field of oncology has seen significant advancements in various therapies, each playing a specific role in the fight against cancer. Here are some key therapies in cancer treatment:

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Surgery: Surgery involves the physical removal of cancerous tumors and tissues from the body. It is often the first-line treatment for localized cancers, where the tumor is confined to a specific area and has not spread to other parts of the body. Surgical procedures can be curative, debulking (partial removal to relieve symptoms or improve the effectiveness of other treatments), or palliative (to alleviate pain or discomfort).

Chemotherapy: Chemotherapy involves the use of powerful drugs to kill or inhibit the growth of rapidly dividing cancer cells. These drugs can be administered intravenously or orally and work by targeting both cancerous and rapidly dividing healthy cells. While chemotherapy can cause side effects due to its impact on normal cells, it is a systemic treatment, meaning it can reach cancer cells throughout the body, making it effective against cancers that have spread [5].

Radiation therapy: Radiation therapy uses high doses of radiation to kill cancer cells or shrink tumors. It can be delivered externally (external beam radiation) or internally (brachytherapy), targeting specific areas of the body affected by cancer. Radiation therapy damages the DNA of cancer cells, preventing them from dividing and growing. It is often used after surgery to eliminate remaining cancer cells or as a primary treatment for certain types of cancer.

Immunotherapy: Immunotherapy, also known as biologic therapy, is a cutting-edge treatment that stimulates the body's immune system to identify and destroy cancer cells. Different types of immunotherapy, such as immune checkpoint inhibitors, CAR-T cell therapy, and cancer vaccines, are designed to boost the body's natural defenses against cancer. Immunotherapy has shown remarkable success in treating various cancers and has fewer side effects compared to traditional treatments like chemotherapy.

Targeted therapy: Targeted therapy involves drugs or other substances that specifically target cancer cells while sparing healthy cells. These therapies work by interfering with specific molecules involved in the growth, progression, and spread of cancer. Targeted therapies are often used in cancers that have specific genetic mutations or biomarkers, making them more precise and less harmful to normal tissues.

Hormone therapy: Hormone therapy is used to treat cancers that are hormone-sensitive, such as breast and prostate cancers. These cancers grow in response to hormones like estrogen or testosterone. Hormone therapy works by blocking or lowering the levels of these hormones or by interfering with the hormone receptors on cancer cells, preventing them from growing.

Stem cell transplantation: Stem cell transplantation, also known as bone marrow transplant, is a procedure used to replace damaged or diseased bone marrow (which produces blood cells) with healthy stem cells. It is often used after high-dose chemotherapy or radiation therapy, which can damage the bone marrow. Stem cell transplantation allows for the administration of more intensive treatments, as healthy stem cells can replace the damaged ones, aiding in the recovery of the patient's immune system.

Precision medicine and genomic profiling: Precision medicine involves tailoring cancer treatment based on the specific genetic mutations or alterations present in a patient's tumor. Genomic profiling, which analyzes the genetic makeup of cancer cells, helps oncologists identify targeted therapies or clinical trials that are most likely to be effective for a particular patient. This personalized approach ensures that patients receive treatments that are specifically designed for their unique cancer profile, increasing the likelihood of successful outcomes.

Conclusion

Alternative and complementary therapies in cancer treatment offer a holistic approach to patient care, addressing not only the physical symptoms but also the emotional and psychological aspects of the disease. While many patients find relief and improved well-being through these therapies, it's imperative to approach them with a critical mindset and consult healthcare professionals before incorporating them into the cancer treatment plan. Exploring the evidence behind these therapies, understanding their potential benefits, limitations, and risks, and integrating them into a comprehensive, evidence-based cancer care model can provide cancer patients with a more well-rounded and supportive treatment experience. As research continues to unravel the complexities of cancer and complementary therapies, the future holds the promise of more personalized, effective, and integrated approaches to cancer treatment, ensuring that patients receive the best care possible throughout their cancer journey.

Acknowledgement

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Conflict of Interest

None.

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