



Scope for Integration of Traditional and Complementary Medicines in the Conventional Treatment and Management of Cancer

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Perspective

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Abstract

The current scenario of incidence and major treatment modalities adopted by the conventional or modern medical stream in the control and management of cancer has been briefly narrated. The role played by various evidence-based complementary and alternative medicines (CAM) and traditional medicines in combating cancer and ameliorating conventional therapy-generated side-effects has been elucidated. The possible scope for integration of some of these traditional and CAM modalities along with the conventional treatment in rendering better control and management of cancer, and to give the patients a better quality and a longer life by reducing toxicity and side-effects generated by the conventional treatment have been discussed.

Keywords: Integration; Traditional and Complementary Medicines; Conventional Treatment

Introduction

Cancer is a deadly disease encountered all over the world. It arises primarily by uncontrolled growth of cells or tissues. Tremendous research effort has revealed many unknown facts about cancer, but unfortunately a fool proof and effective method to prevent the occurrence or to bring a permanent cure of this disease is still unavailable. The global cancer burden has been steadily rising despite much progress and advancement made in the treatment strategies of modern or conventional mode of treatment.

Present scenario of Cancer Incidence and Distribution

In an updated estimate, GLOBOCAN reported incidence and mortality worldwide for 36 types of cancer in 185 countries [1]. About 18.1 million new cases and 9.6 million

deaths were reported to occur in 2018 alone. In fact, now one in 5 men and one in 6 women are at risk of developing cancer during their lifetime, and one in 8 men and one in 11 women are destined to die from the disease. Asia having a population load of about 60% of the world bears the brunt of more than 50% of all cancer related deaths, India showing the least rate of survivability while European countries together having relatively much less population load show about 23.4% of cancer related deaths [1]. Mortality depends largely on late detection and improper care and treatment for the majority of cases. With rapid industrialization and automation, change in lifestyle, pollution, agricultural practices, food habit and other socio-economic issues are some of the causal factors responsible for the increase in occurrence of cancer. The survey in 2018 revealed further that cancers of the lung, female breast, and colorectum conform the top three cancer types in terms of incidence, and also are included among the top five in terms of mortality (first, fifth,

and second, respectively) [1]. Together, these three cancer types are responsible for about one third of the cancer incidence and mortality raging in the world; of these three cancer types, lung cancer in both sexes and breast cancers in the female are the two types which are encountered as the most common cancer types found among the new cases; for each of these types, approximately 2.1 million cases are estimated in 2018, contributing about 11.6% of the total cancer incidence load. Colorectal cancer (1.8 million cases, 10.2% of the total) is the third most commonly encountered cancer, prostate cancer is the fourth (1.3 million cases, 7.1%), and stomach cancer is the fifth (1.0 million cases, 5.7%). Lung cancer is also responsible for the largest number of deaths (1.8 million deaths, 18.4% of the total), because of the poor prognosis globally for this disease, followed by colorectal cancer (881 000 deaths, 9.2%), stomach cancer (783 000 deaths, 8.2%), and liver cancer (782 000 deaths, 8.2%). Female breast cancer ranks as the fifth leading cause of death (627 000 deaths, 6.6%) [1].

Major options of Conventional Treatment

In current practices of conventional or modern system of medicine, several options are considered effective, and used either alone or in combination for different types of cancer (available at: <https://www.cancer.gov/about-cancer/treatment/types>). These are:

1. **Surgery:** The major goal of surgery is to remove the cancer tissue completely or as much of it as possible at an early stage.
2. **Chemotherapy and use of precision medicine:** Chemotherapy is one of the most adopted methods by using drugs that directly kill cancer cells or block their growth fully or maximally. Based on a genetic understanding of their disease, oncologists can also select and administer some precision medicines that are most likely to help the patients.
3. **Radiation therapy:** Targets localized cancer cells to annihilate them and stop them growing.
4. **Bone marrow/stem cells transplant:** To replace cancerous bone marrow cells with normal marrow cells or to rely on stem cell transplants.
5. **Immunotherapy:** Immunotherapy triggers immune system to fight all infections including cancer.
6. **Hormone therapy:** Hormone therapy is a process of manipulating hormone to slow down or stop the growth of cancer by obstructing the growth promoting hormones.
7. **Targeted drug therapy:** Targeted therapy utilizes drugs to target specific genes and proteins that are involved in the growth and survival of cancer cells.
8. **Cryoablation:** Cryotherapy, also known as cryosurgery, cryoablation, percutaneous cryotherapy or targeted cryoablation therapy, comprises a minimally invasive

treatment that uses extreme cold to freeze and destroy diseased tissue, including cancer cells.

Consequential Outcome of Conventional Treatment Modality

Most cancer patients opt for the conventional treatment with modern therapy. Though effective treatment strategies in modern or conventional medicines have been able to reduce the death rate considerably in certain types of cancer in some countries, yet in most cases the overall life expectancy is greatly reduced after the disease is detected; the quality of life of the patients undergoing conventional treatment often turns out to be pathetic, The patients suffer badly from the side-effects often resulting in unbearable pain, loss of appetite and sleep. Further, despite some improvement brought forth in the treatment of patients, there is an overall increase in the rate of new occurrence of certain cancer and also an overall mortality due to cancer, necessitating serious consideration of adopting newer strategies and approaches for the effective management and amelioration of the sufferings of cancer afflicted people, and providing them a much better quality of life, also giving them an extension of life span as well.

Common side-effects of Conventional Therapy

Side effects of conventional treatment are mostly experienced by the patients when treatment affects healthy tissues or organs as well producing cytotoxicity. The major side-effects during conventional therapies can be listed as follows (available at: <https://www.cdc.gov/cancer/survivors/patients/side-effects-of-treatment.htm> and at <https://www.cancer.gov/about-cancer/treatment/side-effects>):

- Anemia
- Loss of appetite
- Nausea and vomiting
- Bleeding and bruising (Thrombocytopenia)
- Constipation or diarrhoea
- Hair loss (Alopecia)
- Delirium
- Edema (swelling) and feeling of exhaustion or fatigue
- Fertility Issues in men and women
- Flu-like symptoms
- Infection and neutropenia
- Lymphedema
- Memory loss or concentration problems
- Problems in mouth and throat
- Peripheral neuropathy or other nerve problems
- Inflammation and pain
- Sexual health issues in men and women
- Skin issues and nail changes
- Disturbed sleep and insomnia

- Urinary and bladder problems
- Psychological problems including stress

Side effects may vary from person to person, even among people receiving the same type of cancer therapy. Therefore, one of the main concerns associated with the conventional treatment is to address the sufferings of the patients arising out of the various therapies, which cannot be avoided. So, the best option is to minimize the side effects by means of some adjuvant, traditional or complementary therapies that by themselves do not have any adverse side effects, but can considerably alleviate the sufferings produced as a consequence of conventional therapies.

Possible ways to Ameliorate Toxicity and Side-Effects

As per World Health Organization 2019 global report on traditional and complementary medicine, there are many unorthodox systems of treatment still in vogue in various countries which need to be explored for their possible utility in regard to certain types of disease getting some degree of benefit (available at: <https://creativecommons.org/licenses/by-nc-sa/3.0/igo>). Among them, Government of India recognized five popular systems like Ayurveda, Yoga, Unani, Siddha and Homeopathy (AYUSH) to have some prospects and utility for rendering healthcare to this populous country and there is a separate ministry to overlook the educational and research activities being carried out in these traditional and CAM systems in India. Apart from this, clinical practice and case reports in recent years reveal that there are several other traditional complementary and alternative medicines (CAM) and therapies which not only have their own protective effects against cancer, but also surely have great scope for fruitful integration with conventional treatment for reducing the sufferings arising out of conventional therapy. The following systems are gaining importance in this regard:

- **Acupuncture:** This system of treatment originated from China in ancient times and has particular effect on relieving nausea and vomiting of cancer patients. It has also been reported to reduce cancer pain and hot flashes. But precaution should be taken by using only sterile and new acupuncture needles to avoid possibility of any secondary infection.
- **Ayurveda:** Ayurveda is the ancient Indian system of natural and holistic medicine. Ayur means "longevity" and veda means "science", so Ayurveda means "the science of life". The traditional Hindu system of medicine uses a combination of diet, herbal treatment, and yogic breathing to treat illnesses
- **Yoga:** This ancient mind-body practice may help relieve stress, anxiety, and depression. The yoga practice should be done strictly in consultation with an expert yoga therapist because some typical postures may have to be avoided in case of certain diseases including some types of cancer,
- **Unani:** Unani medicine is a system of alternative medicine that originated in ancient Greece but is now practiced primarily in India. Involving the use of herbal remedies, dietary practices, and alternative therapies, Unani system of medicine addresses mainly the prevention and treatment of disease.
- **Homeopathy:** This is a very safe method of CAM which mostly uses low doses of plant extract or micro doses of ultra-highly diluted medicines from various sources. It follows the main doctrine of "like cures like". Homeopathy is known to be very effective as remedy against cancer, and also known to work as a supportive medicine when used in combination with any conventional therapy, helping patient to have a better way of life, with increase in life span with much reduced pain and sufferings.
- **Siddha:** This is a traditional system of healing that had its origin in South India and is considered to be one of India's oldest systems of medicine. The Siddha system is based on a combination of ancient medicinal practices and spiritual disciplines as well as alchemy and mysticism.
- **Meditation:** Practicing meditation has been shown to ease anxiety, fatigue, stress, and sleep problem.
- **Aromatherapy:** This treatment uses fragrant oils to improve health or mood. It also may help ease pain, nausea, stress, and depression. Although generally safe, these oils can cause allergic reactions, headaches, and nausea in some patients.
- **Music therapy:** Music Therapy is used with great benefits within therapeutic relationship to address physical, emotional, cognitive, and social needs of individuals. Music therapy also provides calmness and serenity to restless/melancholic minds of patients, particularly to those who find it difficult to express themselves in words.
- **Massage therapy:** This type of bodywork may help relieve anxiety, nausea, pain, and depression. But care should be taken to avoid massaging any sore areas of patient's body.
- **Ginger:** This herb may help ease the nausea of cancer treatment when it is used with standard anti-nausea medicines.
- **Biofeedback:** This is a special technique that teaches people to control certain bodily processes that normally happen involuntarily; as for example, heart rate, blood pressure, muscle tension, and skin temperature. This therapy may help ease the pain of cancer and help in getting a better sleep.
- In general, these therapies are now evidence-based and safe for most people and have no or negligible health risk. But still expert advice is needed before using them, particularly when one is suffering from a disease like

cancer. Further, integration of any traditional and CAM therapies needs to be thoroughly discussed among the patient in question, the doctors concerned in the conventional stream and qualified CAM practitioners before the integrated therapy is contemplated.

Evidence-based CAM and traditional practices

In this regard, evidence is accumulating that would suggest some mind and body approaches to yield favourable results. As for example, research showed that acupuncture [2,3], yoga [4-7], massage therapy [8-10], music therapy [11-13], meditation and mindfulness-based stress reduction [14-17], ginger [18], and biofeedback [19,20] may help as supportive therapies in ameliorating some symptoms of cancer and side effects of conventional treatment. The same is true for homeopathy [21-24], Ayurveda [25,26], Siddha [27] and Unani [28], too. For integration of any of these CAM practices, proper clinical practice guidelines have also been formulated by the Society for Integrative Oncology in 2009 [29] for the use of some complementary therapies and botanicals in integrative oncology. It accepts mind and body modalities as part of a multidisciplinary approach, particularly as an effective measure of reducing anxiety, mood disturbance, and chronic pain and for improving quality of life in people with cancer. In further modification of the guidelines in 2017, the Society issued encouraging advisory for the use of integrative therapies during and after breast cancer treatment, recommending the use of meditation, relaxation, yoga, massage and music therapies for effective anxiety/stress management and depression/mood disorders (available at: <https://www.nccih.nih.gov/health/providers/digest/mind-and-body-approaches-for-cancer-symptoms-and-treatment-side-effects>). Efforts to use meditation and yoga to improve quality of life, and use of acupressure and acupuncture for reducing chemotherapy-induced nausea and vomiting also paid dividends. However, use of ingested dietary supplements to manage breast cancer treatment-related side effects could not be verified. Earlier, in 2013, the American College of Chest Physicians issued guidelines on complementary therapies and integrative medicine for lung cancer [30].

Conclusion

Thus, a new era is ushering in when there is an emergence of new strategies to combat cancer by integrating various suitable traditional and CAM practices. This is now known as "Integrative Oncology". Integrative oncology is now considered as an evolving evidence-based special branch that successfully uses complementary therapies in combination with modern medical treatment to enhance its efficacy, improve symptom control, alleviate patient distress and considerably reduce sufferings and extends

longevity. The basic idea is to treat the whole patient taking into consideration his/her mind, body and spirit [31] to give overall better quality of life along with taking care of combating the disease. This new area of medical oncology needs extensive and intensive research that may provide a new hope to the large number of cancer patients around the world and also help the doctors to treat them better.

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