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Concept and Management of Tumor *(Sartan)* in the light of Unani system of Medicine-A Review Article

* Dr. Sumaiyya Abdul Karim Salar [1], Dr. Shaikh Shoeb Mohd. Abdul Rauf [2],

Dr. Taqdees Fatema Abdul Rauf Shaikh [3], Dr. Aafaque Ahmad Mohd. Iqbal [4], Dr. Abdul Quddus [5]

[*1] Reader, Dept. of of Ilmul Jarahat, Iqra Unani Medical College, Jalgaon

[2] Reader, Dept. of Amraze Jild wa Tazeeniyat, Iqra Unani Medical College, Jalgaon

[3] Lecturer, Dept. of Amraze Jild wa Tazeeniyat, Iqra Unani Medical College, Jalgaon

[4] Lecturer, Dept. of Moalijat, Iqra Unani Medical College, Jalgaon

[5] Professor, Dept. of Kulliyat, Iqra Unani Medical College, Jalgaon

Abstract: Cancer has been defined as, malignant growth characterized by the uninhibited proliferation of cells, often affecting healthy tissues locally or throughout the body. Cancer is not a new disease some of the cancers that most often affect women are breast, colon, endometrial, lung, Brain, cervical, skin, and ovarian cancers. The most significant risk factor for cancer is age; two-thirds of all cases were in those older than age 65 years, Owing to its high incidence in nature, it is the second leading cause of death after cardiovascular etiology. Unani or Greek-o-Arab medicine originated in Greece about 2500 years back and is based upon the four humours theory, Unani scholars believed that the body contained four humours *(Akhlaat)* any imbalance of these fluids will result in disease and excess of black bile (*Sauda)* in a particular organ site was thought to cause cancer or "Tumor" (*Sartan)*. The world's oldest recorded case of breast cancer hails from ancient Egypt in 1500 BC and it was recorded that there was no treatment for the cancer or Tumor, only palliative treatment. According to inscriptions, surface tumours were surgically removed in a similar manner as they are removed today. So it is an effort through this paper to highlight the preventive measures mention in the classical Unani literature for cancer prevalent amongst females and some of the cancers can be prevented by avoiding the accumulation of abnormal humours inside the body.

KEYWORDS: Tumor, Unani medicine, Prevention, treatment of cancer, adjuvant therapy, Herbal Drugs.

1. INTRODUCTION

Cancer is the second important cause of morbidity worldwide accounting for 8.8 million deaths in 2015. Globally, nearly 1 in 6 deaths is due to cancer. Approximately 70% of deaths from cancer occur in low- and middle-income countries. Cancer is a group of diseases characterized by uncontrolled cell growth and ability to invade other tissues through direct cell migration or through the blood and lymph systems. More than 100 different types of cancer are known. A tumor is an extra mass of cells with abnormalities in their DNA. Tumors may be benign (not cancer), or malignant (cancer). Among many others, the etiology of cancer is largely influenced by tobacco smoke, infection, chemicals, radiation, environmental factors, and unhealthy diet. Cancer cells are able to grow, invade

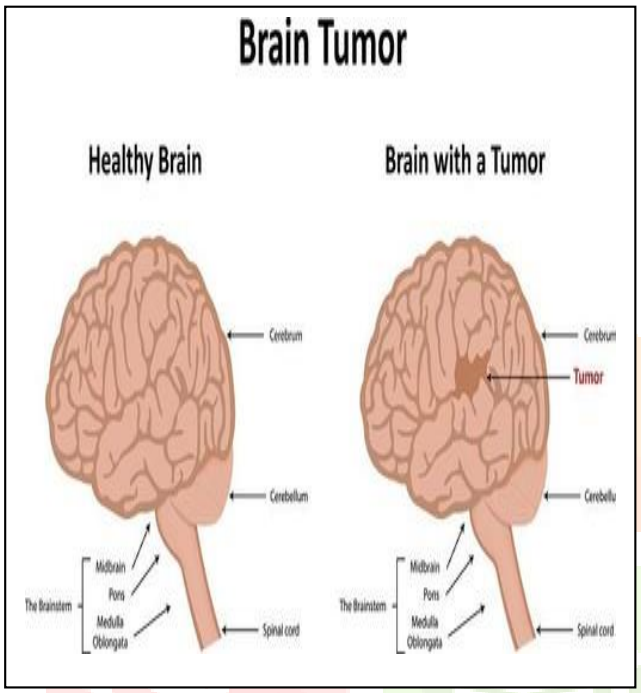


Fig. 1 Healthy Brain and Brain with Tumor

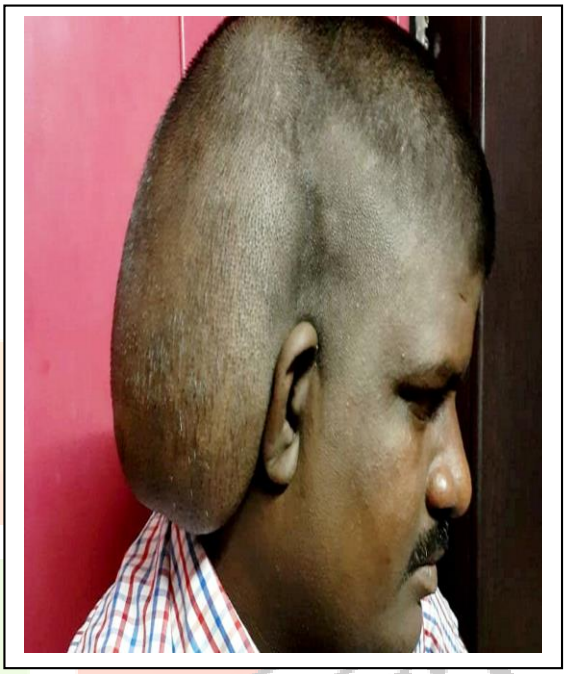


Fig. 2 A Brain Tumor Patients

neighboring tissues and may also affect other organs. Therefore, tumors arise when cells lose their ability to undergo regulated cell growth. If the diagnosis is made at an early stage, cancer can be successfully treated by surgery and radiation. Whereas, advanced tumors require chemotherapy and although these drugs are successful, they are linked with severe adverse events and drug resistance.

The term “cancer” is derived from the Greek and Latin words for a crab, because a cancer "adheres to any part that it seizes on in an obstinate manner, similar to a crab‖. The Unani System of Medicine is a complete medical system, which specifically deals with the various states of health and disease. It provides promotive, preventive, curative and rehabilitative healthcare. Unani medicine is a holistic approach to cancer care.

2. Concept and Management of Brain tumor in Unani Medicine

In Unani system of Medicine cancer has mentioned under the name of *Sartan*, which is an Arabic word which means Crab, as it stick to its prey like a crab. Sartan has been defined as a type of malignant, melanotic swelling which can occur anywhere in the body.

According to Ancient Unani scholar's human body have four basic fluids, called as humours *(Akhlaat)*. These are Blood (*Dam)*, Phlegm (*Balgham)*, Yellow bile (*Safra)* and Black bile (*Sauda)*. The humours are vital spirits that course through the blood vessels, exert control over the body's metabolism, and influence the function of all physiological systems. the concept of cancer has been described by many eminient scholar viz, *Galen* (131-210AD), *Al-Razi* (865-925 AD), *AL-Zahrawi* (939-1013 AD) and *Ibn-e-Sina* (980-1037AD),Cancer has been a disease of Black bile humour *(Sauda)*, it is caused by an imbalance of this humour, or when one or more humours become out of balance along with it, In severe cases, all four humours may be disordered. It is believed that cancer is the end stage of the degeneration of the metabolic efficiency of the body. The extinguishing of the innate heat (*Hrarat-e-Gharizia*) brought on primarily by incorrect diet and other imbalances in various aspects of life, usually occurring over a long period of time.

Generally, it is developed in those persons whose built is obese and flabby that is one of the reason for its high incidence amongst females particularly in those hollow organs of the body where the causative matter *(Ghair Tabai Sauda)* Morbid Melancholic Humour easily gets accumulated viz. Breast, lungs, cervix, and uterus etc. It starts with small swelling that increases in size with time. The roots of the swelling are deep with prominent vessels and spreads up very rapidly.

Malignant tumors are collectively referred to as cancers. Its literal meaning is crab as it sticks to its prey like a crab. The Unani terminology for cancer is Sartān. Sartān is an Arabic word which means crab as it sticks to its prey like a crab. Sartan has been defined as a type of malignant, melanotic swelling which can occur anywhere in the body. It starts with a small swelling which gradually increases with time. It spreads very rapidly and the roots of this swelling are deep with prominent vessels. Administration of an appropriate purgative has been suggested to remove excess black bile from body and thereby adopting ways which prevent the generation and accumulation of black bile in blood vessels as far as possible. Galen has also emphasized that that newly formed cancers can be treated through removal of harmful humor from the body and by use of some topical anti-cancer drugs. But, in the case of advanced cancer, harmful humors must firstly be removed from the body by means of purgatives and afterwards, eradication of cancerous tumor should be done in a way that all tumor roots are removed. Then, adjacent vessel should be pressed in order to remove their thick blood. Rhazes' briefly classified benign and malignant tumors; he mentioned in his treatises that some hard swellings found in body are similar to cancer. He categorized such swellings into those with and without pain. The basis of this differentiation is based on the fact that hard swellings usually develops secondary to warm swellings, and is dependent to other phenomena for its formation and is never formed primarily. In contrast, cancer is formed primarily. Another feature is that the vessels adjacent to non-cancerous swellings are stressed and have lower temperature upon touch compared to cancerous tumors. For painless swellings, this is the best sign of their benign nature. Rhazes'emphasized that during the initial stages of cancer, regular venesection and administration of black bile purgatives should be given to prevent accumulation of the disease forming humour. In addition blood thinning foods with cold nature should be administered to the patient. Avicenna described cancer is from the class of black bile swelling, which is caused by the accumulation of excess black bile, which is produced from burning of the yellow bile. After talking about the

differential characteristics of cancer and scirrhus, he points that cancer frequently involves hollow organs and for this reason, its prevalence is higher among females. Organs with rich vascular supply are more prone to cancer.

3. Definition of Brain Cancer or Brain Tumor.

Brain tumors can affect brain function if they grow large enough to press on surrounding nerves, blood vessels and tissue. Your outcome is determined by such factors as the tumor's type, grade, and location; the success of tumor removal; and your age and overall health. A brain tumor is an abnormal growth or mass of cells in or around the brain. It is also called a central nervous system tumor. Brain tumors can be malignant (cancerous) or benign (not cancerous). Some tumors grow quickly; others are slow-growing. Only about one-third of brain tumors are cancerous. But whether they are cancerous or not, brain tumors can impair brain function if they grow large enough to press on surrounding nerves, blood vessels and tissue. Tumors that develop in the brain are called primary tumors. Tumors that spread to the brain after forming in a different part of the body are called secondary tumors or metastatic tumors. This article focuses on primary tumors. There are more than 100 types of primary brain and spinal cord tumors. Brain tumors occur more often in men than women. Although they are most common among older adults, they can develop at any age. Brain tumors are the leading cause of cancer-related death in children under age 14.

4. Types of Brain tumor.

Doctors classify brain and central nervous system tumors based on where they form and the kind of cells they involve. Brain tumors that are usually benign include:

A. **Acoustic neuroma:** These tumors occur on the vestibular nerve (the nerve that leads from the inner ear to the brain). Acoustic neuromas are also called vestibular schwannomas.

B. **Gangliocytoma:** These central nervous system tumors form in neurons (nerve cells).

C. **Meningioma:** These are the most common type of primary brain tumors. Meningiomas develop slowly. They form in the meninges, the layers of tissue that protect the brain and spinal cord. In rare cases, a meningioma can be malignant.

D. **Pineocytoma:** These slow-growing tumors form in the pineal gland, which is located deep in the brain and secretes the hormone melatonin.

E. **Pituitary adenoma:** These tumors form in the pituitary gland, which is located at the base of the brain. The pituitary gland makes and controls hormones in the body. Pituitary adenomas are usually very small.

F. Chordoma: These slow-growing tumors typically begin at the base of the skull and the bottom part of the spine. They are mostly benign (not cancerous).

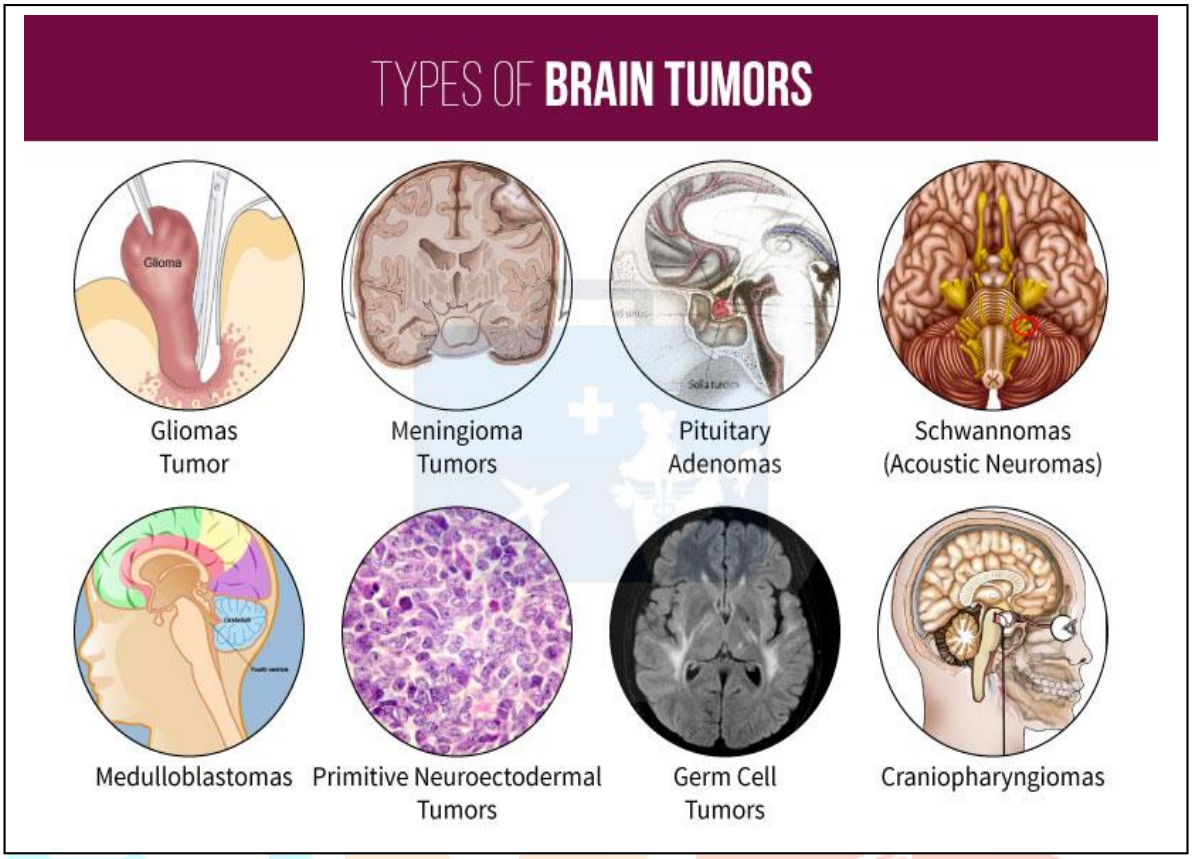


Fig. 3 Types of Brain Tumor

Cancerous brain tumors include:

A. Glioma: These tumors develop in glial cells, which surround and assist nerve cells. Two-thirds of cancerous primary brain tumors are gliomas. Types of gliomas include:

- **Astrocytoma:** Astrocytomas form in glial cells called astrocytes.
- **Glioblastoma:** Aggressive astrocytomas that grow quickly are glioblastomas.
- **Oligodendroglioma:** These uncommon tumors begin in cells that create myelin (a layer of insulation around nerves in the brain).

B. Medulloblastoma: Medulloblastomas are fast-growing tumors that form at the base of the skull. These are the most common cancerous brain tumors in children.

5. Symptoms and Causes of Brain tumor

Doctors are not sure what causes most brain tumors. Mutations (changes) or defects in genes may cause cells in the brain to grow uncontrollably, causing a tumor. The only known environmental cause of brain tumors is having exposure to large amounts of radiation from X-rays or previous cancer treatment. Some brain tumors occur when hereditary conditions are passed down among family members. Some people with a brain or central nervous system tumor have no symptoms. In some cases, doctors discover a tumor during treatment for another issue. As a brain tumor grows and presses on surrounding nerves or blood vessels, it may cause symptoms. Signs and symptoms of a brain tumor vary depending on the tumor's location and type, size and what the affected part of the brain controls. They can include:

A. Headaches that are ongoing or severe; or that occurs in the morning or goes away after vomiting.

B. Behavior or personality changes.

C. Confusion.

D. Difficulty with balance or coordination.

E. Trouble concentrating.

F. Nausea and vomiting.

G. Numbness, weakness or tingling in one part or side of the body or face.

H. Problems with hearing, vision or speech.

I. Seizures.

J. Unusual sleepiness.

K. Trouble with memory, thinking, speaking or understanding language.

6. Diagnosis and Tests of Brain tumor

Doctors use several tests to confirm the presence of a brain tumor. These tests include:

A. Physical exam and medical history: Your doctor will perform a general health exam, looking for signs of diseases or illnesses. Your doctor will also ask questions about past and current health conditions, surgeries and medical treatments and family history of disease.

B. Biopsy: Through a small hole in the skull, a doctor uses a needle to take a sample of tissue from the tumor. A laboratory studies the sample to identify details from the tumor, including how fast it is growing and whether it is spreading.

C. Imaging tests: CTs, MRIs, SPECTs and PET scans help doctors locate the tumor and determine if it is cancerous or benign. Your doctor may also look at other parts of the body, such as the lungs, colon or breasts, to identify where the tumor started.

D. Neurological exam: During a neurological exam, your doctor will look for changes in your balance, coordination, mental status, hearing, vision and reflexes. These changes can point to the part of your brain that may be affected by a tumor.

E. Spinal tap: A doctor uses a small needle to remove fluid from around the spine. A laboratory examines this fluid to look for cancer cells, which can indicate a malignant tumor somewhere in the central nervous system.

When brain tumors are cancerous, doctors classify the tumors into four grades (1 [least malignant/slow growing] through 4 [most malignant/fast growing]) as part of the diagnosis. The grade assigned to a tumor indicates how fast it's growing and its likelihood of spreading. By grading the tumor, your doctor can determine the most effective treatment options.

7. Management and Treatment of Brain tumor

Brain tumor treatment depends on the tumor's location, size and type. Doctors often use a combination of therapies to treat a tumor. Your treatment options might include:

A. Surgery: When possible, surgeons remove the tumor. They work very carefully, sometimes doing surgery when you are awake, to minimize damage to functional areas of the brain.

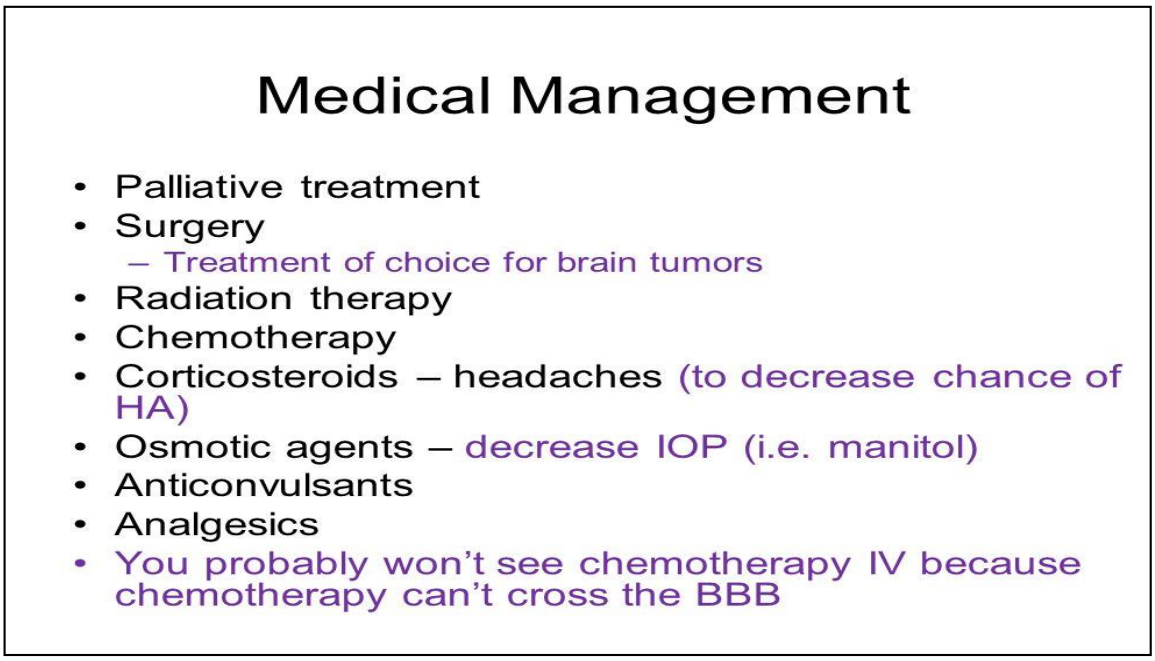


Fig. 4 Medical Management of Brain Tumor

B. Radiation therapy: High doses of X-rays destroy brain tumor cells or shrink the tumor. Some people have radiation before surgery to shrink a brain tumor so that the surgeon can remove less tissue.

C. Chemotherapy: Anti-cancer drugs kill cancer cells in the brain and throughout the body. You might receive chemotherapy through an injection into a vein or take as a pill. In some cases, doctors use chemotherapy before surgery to make the tumor smaller. Your doctor may recommend chemotherapy after surgery to kill any cancer cells left behind or to prevent remaining tumor cells from growing.

D. Immunotherapy: Immunotherapy, also called biological therapy, is a type of treatment that uses your body's own immune system to fight cancer. The therapy mainly consists of stimulating the immune system to help it do its job more effectively.

E. Targeted therapy: Drugs target specific features in cancer cells without harming healthy cells. Your doctor may recommend targeted therapy if you have trouble tolerating the side effects of chemotherapy, such as fatigue and nausea.

F. Laser thermal ablation: This treatment uses lasers to heat and destroy tumor cells.

G. Watchful waiting/active surveillance: A doctor closely monitors the tumor for signs of growth with regular testing, but does not take any other action.

8. Complications associated with a brain tumor

Some people with a brain tumor — whether it is benign or malignant — experience complications as the tumor grows and presses on surrounding tissue. These complications include:

A. Decreased alertness.

B. Difficulty speaking.

C. Faster or slower breathing and pulse rates.

D. Numbness that interferes with feeling pressure, heat or cold on the body.

E. Weakness or inability to move a leg or arm on one side of the body.

9. Prevention of Brain tumor

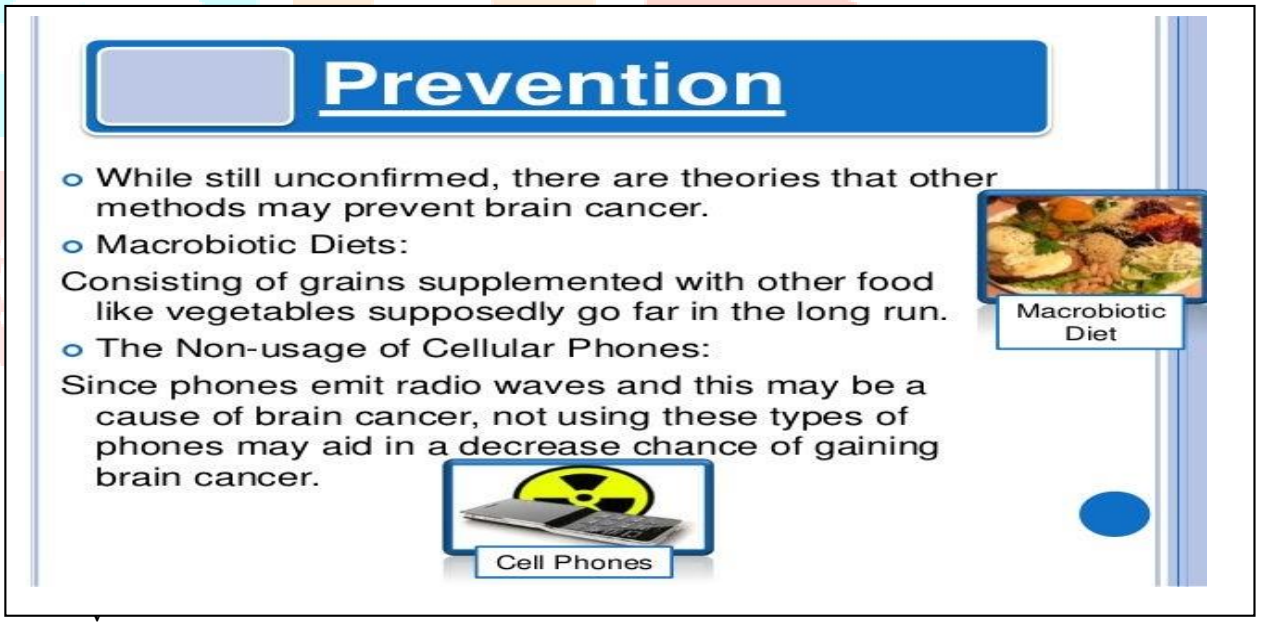
Prevention can be achieved by abiding the following principles of Unani Asbab Sitta Zarooriya (Six Prerequisites of Healthy Living by Unani medicine):

A. Air (Hawa)

- ❖ Fresh and pollution free air for breathing.
- ❖ Avoiding exposure to excessive heat or excessive cold.

B. Food and Drink (Makool o Mashroob)

- ❖ Stoppage of tobacco chewing and smoking.
- ❖ Avoiding junk and smoked foods, preserved foods, alcohol, carbonated drinks, etc.
- ❖ Avoiding excess of non-vegetarian diet.
- ❖ Avoiding black bile producing diets such as red meat, dried and salted meat and fish, etc.
- ❖ Taking soft and easily digestible diets.
- ❖ Consuming turmeric, tomatoes, garlic, flaxseed, spinach, broccoli, pomegranates, walnuts, etc.
- ❖ Taking diet rich in fibre (20-30gm/day).



ement **Fig. 5 Preventions of Brain Tumor** and Repose (Harkat o Sukoon Badani)

- ❖ Avoiding sedentary lifestyle.
- ❖ Exercising for 30-45 minutes at least five days a week.

D. Psychic Movement and Repose (Harkat o Sukoon Nafsani)

- ❖ Avoiding mental stress and anxiety.
- ❖ Avoiding extreme emotions, e.g. anger, fear, sadness.
- ❖ Lead a spiritual peaceful life.

E. Sleep and Wakefulness (Naum o Yaqza)

- ❖ Sleeping for six to eight hours.

F. Retention and Evacuation (Ihtibas o Istifragh)

- ❖ Avoiding constipation.
- ❖ Ensuring proper evacuation, urination, perspiration and menstruation.
- ❖ Avoiding dehydration and ensure retention of electrolytes and minerals.

10. Use of Unani Medicine as a substitute to conventional chemotherapeutic agents

In the recent decades, there has been a dramatic increase in interest in the use of herbal drugs to kill cancer cells. Unani herbal drugs might be potentially safe therapeutic candidates for the treatment of cancer. Several preclinical in vitro and in vivo studies have reported anticancer activity of some Unani medicinal plants extracts on different human cancer cell lines and in animal models. Several studies have revealed that natural products exhibit an extensive spectrum of biological activities such as, stimulation of the immune system, antibacterial, antiviral, anti-hepatotoxic, anti-ulcer, anti-inflammatory, antioxidant, anti- mutagenic, and anti-cancer effects. In addition, a number of medicinal plants and herbs have also been reported to reduce the risk of cancer in multiple sites. Many commonly used anti-cancer herbs possess chemo-preventive effects within their diverse pharmacological properties. Since cancer evolves over a long period of time, agents that inhibit or retard one or more of its stages could affect the overall course of the disease. Qamar Uddin et al review the salient findings of preclinical studies of 20 Unani medicinal plants for their anticancer activity. These findings provide a good base for clinical trials. These Unani medicinal herbs may be valuable for optimizing the conventional anticancer therapy; and they can be used in combination with conventional anticancer drugs as a supportive therapy to improve health-related quality of life (HRQoL) of cancer patients. However, clinical studies of these herbs need to be conducted for possible alternative medical treatment of cancer.

11. Use of Unani Medicine in the management of cancer as an adjuvant

Early detection leads to better prognosis. Unani treatment may be used as an adjuvant therapy for the following purposes in cancer patients:

- ❖ To restore the healthy lifestyle by observing Asbab Sitta Zarooriyya (Unani Six Prerequisite for healthy Living).
- ❖ To enhance the immunity of the patient.
- ❖ To reduce the complications associated with cancer.
- ❖ To prevent the side-effects of the conventional cancer therapies.
- ❖ To improve the quality of life of the patients.

To enhance the immunity a number of Unani formulations act as immune-modulator which may be prescribed with full confidence to the patients. The names of few are given below**:**

- ❖ Khamira Marwared
- ❖ Tiryaq-e-Wabai
- ❖ Khusta Til Kalan

12. Unani drugs used in the treatment Bain Tumor.

The principles of Unani medicine can be utilized both for prevention and management of cancer. Unani medicine can be engaged in management of cancer both as a substitute to conventional chemotherapeutic agents as well as adjuvant. However, use of Unani drugs as a substitute to conventional chemotherapeutic agents requires thorough clinical trials and it is still in the stage of development. But as an adjuvant, it has been proved very fruitful.

A. Garlic. (Allium sativum L)

Allium sativum is a plant from Aparagales order, Amaryllidaceae family, Allianceae

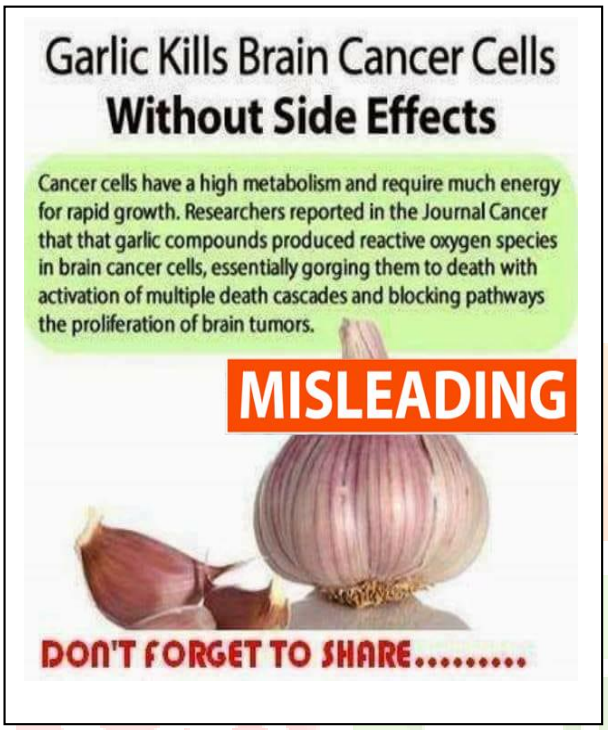


Fig. 6 Garlic used in Treatment of Brain Tumor

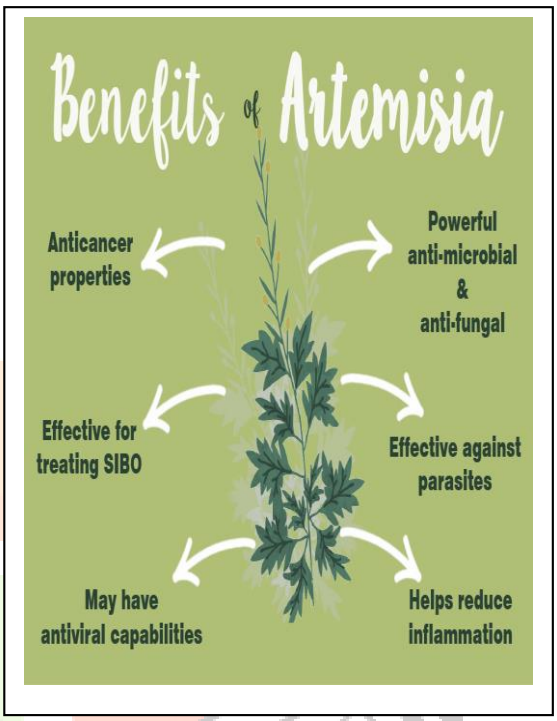


Fig. 7 Artemisia used in Treatment of Brain Tumor

subfamily and Allium genus. Allium sativum is a garmineous and permanent plant, with a stem size of 40 cm. Its underground part is inflated and composed of 5 to 12 parts enclosed in fine and slender membranes in gray-white. Its leaf is thin and filet in dark green, and its flowers are small and pink like an umbrella at end of the stem. Various researches have shown that Allium sativum and organosulfuric compounds reduce the risk of cancer in breast, larynx, colon, skin, womb, gullet, bladder, and lung. In other research, we refer to the role of the most important Allium sativum compound, that is, Allicin, and the antitumor characteristics of this compound on breast and prostate cancer are proved. This compound induces planned death of cells and has a anticancer role. When Allium sativum is crushed and cracked up, Allicin 1, under the effect of an enzyme, changes to Allicin 2. Allicin is a proliferation inhibitor of malignant human cells. Ajoene is another compound that suppresses proliferation of leukemia and will cause planned death of cell.

B. Artemisia absinthium L

Artemisia is a plant in the Asteraceae family. Artemisia has 200 to 400 species that have clustered and bitter flowers. One species, Artemisia absinthium L, is native of Asian moderate areas, north of Africa. The size of this plant is 80 to 120 cm. Flowers of this plant are yellow and clustered. A research on breast cancer cells MCF-7 has been reported. Similar results related to the anticancer characteristics of this plant on 3 cancer cells HeLa, HT-29, and MCF7 have been reported. In a study about the Artemisinin effect of this plant on breast cancer cells, it was determined that plethoric reaction in cancer cells involves inhibiting cell's growth, apoptosis, preventing angiogenesis, preventing cell migration, and decreasing responses of core receptors. Quercetin, isorhamnetin, kamfrolinalol, alphapinin, limonene, and myrecene are the other compounds of this plant.

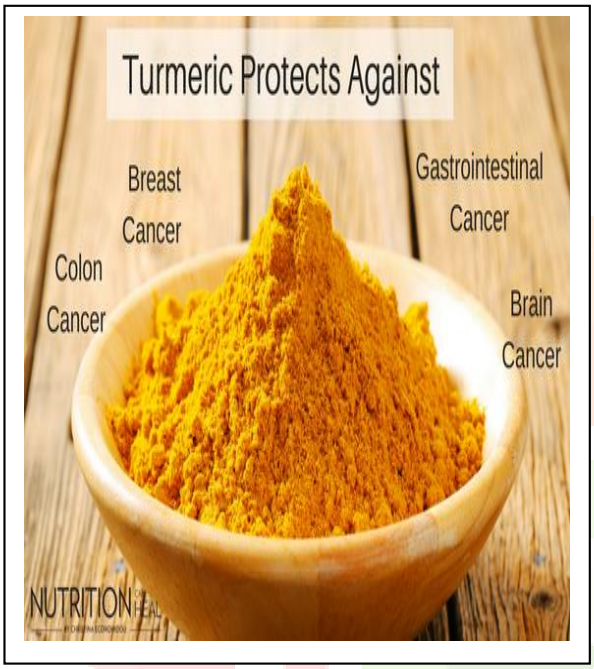


Fig. 8 Turmeric used in Treatment of Brain Tumor

Fig. 9 Methi used in Treatment of Brain Tumor

C. Saffron (Crocus sativus L)

Saffron Crocus sativus L belongs to the Iridaceae family. This plant in Iran is native of Khorasan. Saffron is a perennial plant, with height 10 to 30 cm, from the bulbs of this plant, with narrow leaves exits. This plant has 1 to 3 purple flowers. The used part of this plant is stigma, known as saffron. Various studies showed anticancer effect of the saffron extract on cancer cells in vitro; for example, Escribano et al, in a study on the effect of saffron extract on human cancer cells, found that the materials separated from saffron such as crocin, crocetin, picrocrocin, and safranal induced apoptosis in cancer cells. In another study, the effect of saffron extract and other major plant substance called quercetin on colorectal cancer cells was studied and the results showed the toxic effects of this plant on these cells. Another study also showed the anti-angiogenic effects of this plant on breast cancer cells (MCF-7), and extract of this plant inhibits angiogenesis in these cells.

D. Turmeric (Curcuma longa) Indian Saffron.

Turmeric is a plant with scientific name Curcuma longa from the Zingiberaceae family. This perennial plant usually requires humid and rainy environment. The main habitat of turmeric is hot areas of Asia such as India, Pakistan, Indonesia, and southern China, and it is native of Africa and South America. Turmeric has underground stem called rhizome. Several aerial shoots as high as 1 to 1.5 meters exit from these rhizomes. Edible part of turmeric is dried rhizomes. The study of cytotoxic properties of turmeric on liver cancer cells (Hep-2) showed that the cytotoxicity mediated by curcumin in a dose-dependent manner leads to apoptosis of cancer cells through mitochondrial pathway.The results of studying the effects of its extract on telomerase activity in breast cancer showed anti-proliferative and inhibitory effects of telomerase.In another study, it was found that turmeric imposes its cytotoxic effects on lung cancer cells through inhibition of telomerase activity in a dose-dependent manner. Curcumin, as an important ingredient of turmeric, plays a significant role in the prevention and treatment of primary ovarian cancer, and multiple clinical studies have proven its effectiveness.

E. Liquorice. (Glycyrrhiza glabra) Methi.

Glycyrrhiza glabra is wild plant from vegetables family, native to southern Europe, North Africa, and temperate regions of Asia. It grows in most parts of Iran, especially in the eastern and northeastern Khatam Marvast city and territories as well as Azerbaijan and Eghlid city. Its leaves are compound and consists of 4 to 7 leaf pairs plus an end leaflet that is sticky due to secretion of juice. Flowers are blue and its fruit contains 5 to 6 brown seeds. Its roots and stems have medical use. Extract contents of the root lead to morphological changes in the mammary cell line 4T1 and reduce their viability. Its root extract induces BCL2 phosphorylation and, like Taxol, inhibits the cell cycle at the G2/M phases in tumor cell lines. Glycyrrhizin, is a triterpene glycoside that is the main compound in root extract and acts as an anti-proliferative agent against tumor cells, especially breast cancer cell line (MCF-7) and HEP-2 and plays its role by inducing apoptosis. Glycyrrhiza glabra root extract induces apoptosis in HT-29 cells; therefore, it is useful in the treatment of colon cancer.

F. Klongi (Nigella sativa) Black seeds.

Black seed is of the Ranunculales Ranunculaceae family. This annual flowering plant is native to southwest Asia. This plant grows in abundance in Arak and Isfahan in Iran. A study presented an overview of the antioxidant protective effects on the liver of the anticancer effects of the plant Nigella. In this context, evaluation of alcohol on the effects of Nigella sativa on kidney cancer cells (ACHN) showed an apoptotic effect on these cells. In a study of colorectal cancer cells, the effects of thimoquinone on inhibiting cancer cell growth, apoptosis, and increased cell morphological changes was shown. It also has been shown to induce programmed cell death, with the anticancer activity being observed in an alcoholic extract of Nigella sativa. In a study the effect and mechanism of black beans has been shown in the treatment of breast cancer.In a research conducted by Elkady and colleagues, the effect of Nigella and the mechanism in the treatment of colon cancer in humans was demonstrated.

Fig. 10 Klonji used in Treatment of Brain Tumor

Fig. 11 Sadabahar used in Treatment of Brain Tumor

G. Sada Bahar. (Vinca rosea)

Belonging to the genus Vinca and oleander it has for a very long time been an important medicinal plant of great concern. In a study on human skin cancer cell line A431, the methanol extract of the plant had a positive effect on reducing the proliferation in this category. Alkaloids such as vincristine, vindoline, vinblastin, vinflunine, and catharantin in the aerial parts are different from vincristine and vinblastine, and among them 2 combinations of plant secondary metabolism are used today as anticancer drug. The effects of this plant's alkaloids on cancer cells of breast, prostate, cervix (MCF-7, PC3-1C, HeLa) were studied, indicating that these alkaloids' tubular protein links changed its structure by blocking the division of cancerous cells; these compounds with antioxidant properties will prevent cancer cells from progression.

CONCLUSION

Unani medicine is a holistic approach to cancer care. The primary aim of this review is to highlight and discuss the scope of integration of Unani medicine in caner management. The paper reviews the role, Unani medicine can play in prevention and management of cancer. The appraisal has been made to integrate Unani medicine both as an adjuvant as well as substitute to conventional chemotherapy. There are pharmacological studies available which are suggestive of Unani medicinal plants for their anticancer effects; these can be developed as anticancer therapeutic agents in order to fight this deadly disease. Hence, it can be concluded that Unani herbal drugs can be considered as promising chemotherapeutic agents. Similarly, the role of Unani medicine as an adjuvant to conventional chemotherapy is evidence based and cannot be neglected. These Unani herbal drugs and regimens when combined with conventional anticancer therapy may help to synergize the anticancer effects, and reduce the side effects of conventional drugs, to improve the patient‘s QOL, and to prevent cancer recurrence.

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