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REVIEW OF NEUTRACEUTICAL APPROACH TO FIGHT CANCER CAUSING ELEMENTS: A PERCEPTORY VIEW

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ABSTRACT:

Cancer is the most feared of all disease. Cancer is a proliferation of cells in the body which undergo unregulated growth. These cells often spread by seeding themselves though out the body. Typically growing in the form of tumors, new tumors emerge as cells take root and grow in different parts of the body.

Classical Ayurvedic texts have several references to cancer. It has an integrated approach to the prevention and treatment of illness and tries to maintain or re-establish the harmony between the mind, body, and forces of nature. It combines a number of approaches, such as changes in lifestyle, herbal remedies, exercise, and meditation to strengthen and purify the body and mind and increase spiritual awareness.

Ayurvedic knowledge about diet is quite extensive and patients should follow a diet appropriate to their prakruti and vikruti. Herbs offer great potential to stimulate the healing process and can even destroy cancer cells. This property of an herb (or drug) is called the cytotoxic effect. Dietary patterns, foods, nutrients, and other dietary constituents are closely associated with the risk for several types of cancer, 35 percent of cancer deaths may be related to dietary factors. Evidence suggests that diets high in fiber- containing foods are associated with a reduced risk for cancer, of

the breast, colon. Studies have also shown a reduced risk of cancer with diets rich in fruits, vegetables and grain products, carotenoids, vitamin-C. A leaner diet is believed to lower cancer risk.

Tomatoes, calcium, other minerals, saponins, are believed to prevent or suppress different kinds of cancer.

INTRODUCTION:

Cancer is derived from the Greek word Karkinos, which means “Crab”. Cancer may arise in any tissue of the body that is composed of potentially dividing cells¹. The cells in which cancer occurs show two characteristics.

- Grow uncontrollably (continue to grow and divide)
- They no longer carry out the specific body task for which cells normally exist but intend simply function as cancer cells.

Dividing and multiplying, the cancer cells transmit these characteristics to their cellular offspring. As the Cancer grows the host suffers adverse effects caused by invasive growth in the original tumor site or by metastatic spread to other site in the body².

There are about more than 1 Cr. cancer patients in India. Nearly 10 lakh cancer cases are diagnosed every year in India, and about 4 lakh die.

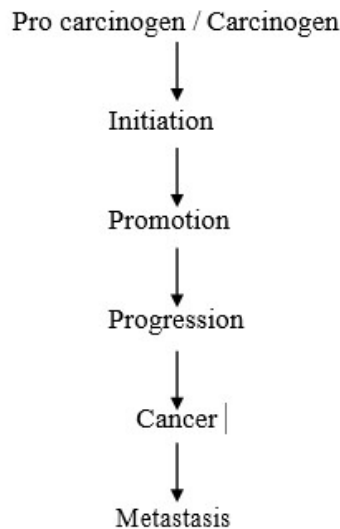
WHAT CAUSES CANCER:

- Chemical carcinogens,
- Tobacco smoking & chewing,
- Anti oxidant metabolism,
- Free radical attack on the cells of body,
- Excessive unprotected exposure to sunlight,
- Exposure to poisonous chemicals in our food and environment,
- Alcohol uses,
- Even many forms of infection and inflammation that promote cancer,
- High fat diet – higher incidence and mortality rate for breast, colon, and Prostate cancers³,
- Food lacking adequate proteins – Oesophageal and gastric cancers,

- Dietary deficiency of various vitamins and minerals promotes cancers in various part/organs all over the body.

THE CANCER PROCESS:

Cancer cells develop because of damage to DNA. This substance is in every cell and directs all its activities. Most of the time when DNA becomes damaged the body is able to repair it. In cancer cells, the damaged DNA is not repaired, which accounts for inherited cancers. Cancer cells often travel to other parts of the body where they begin to grow and replace normal tissue. This process, called metastasis, occurs as the cancer cells get into the bloodstream or lymph vessels of our body⁴.



BLOCKING AND SUPPRESSING CANCER CELLS:

Most carcinogens are actually pro-carcinogens and require metabolic activation of some kind if they are to progress towards cancer. Blocking agents in our food can prevent them from becoming active in a cancerous way.

Several kinds of vegetables are particularly rich in these blocking agents.

- o Cruciferous vegetables – cabbage, broccoli, Brussels sprouts, turnips and mustard greens⁵.
- o Garlic is rich in sulphur containing blocking agents, as are onions, leeks and shallots.
- o Citrus fruit oil contains another variety of blocking agent, D-limonene, D- carvone has been found effective.

All these agents increase the activity of detoxifying enzymes that are employed by the body to break down active carcinogens before they can damage the DNA of cells.

The phytonutrient protection brigade contains suppressing agents that stop the development of already damaged cells and suppress the growth of; cancerous tissue/what would have turned out to be cancerous tissue. Some of them are found in-

- o Cruciferous vegetables,
- o High consumption of green yellow vegetables and fruits,
- o Extracts of wheat, barley and alfalfa are rich in flavonoid compounds have a wide beneficial effects,
- o Consumption of soy, Green tea,
- o Heavy intake of cold water fish, see weed. PHYTOCHEMICAL AND ANTIOXIDANT NUTRIENTS: VITAMINS:

It is generally accepted that diets rich in fruits and vegetables reduce cancer risk.

- Vit. A – Stimulate the immune system, fights infections, and maintains the structural integrity of cells by allowing their genetic materials to split properly.
- Higher dietary intake of beta carotene is associated with a diminished likelihood of several cancers, particularly lung, stomachs and breast cancer.
- Vit. C protects against radiation – induced chromosomal damage in mice.
- A combination of vitamins E, C and A reduced the toxic effects of radio- immunotherapy in mice.
- Vit. E & C supplements for up to one year and improvements were reported in side effects, such as bleeding and diarrhea.

FIBER'S:

The fibres found our plant food are cellulose, hemicellulose, lignin, pectins, gums and mucilage. These varying ingredients are obtained from whole grains, fruits and vegetable. Some of these fibres are water – soluble and others are insoluble in water. Foods high in soluble fibre include barley, flax meal, oats, oat bran, citrus fruits, apples, carrots and beans. Insoluble fibre is high in wheat bran, corn bran, celery and the skins of fruits and root vegetables. Some scientists now believe that most of the protective benefits that fibre has against colon cancer come from the consumption of water – soluble fruits and vegetables rather than from cereal foods.

1. A high – fibre diet usually has a lower content of fat and a higher content of antioxidant vitamins; which may protect against breast cancer.
2. Many plants and vegetables contain isoflavones and lignans, which are capable of being converted into weak estrogens in the bowels. These then compete with oestrogen for binding sites in the breasts and other areas of the body and generally reduce the risk of oestrogen-sensitive cancers⁶.

CAROTENODIS:

Beta carotene is particular has been so strongly associated with reduced cancer risk. It is the carotenoid that is most widely distributed in fruits and vegetables, and this means that blood levels of it are perhaps the best available biomarker of the consumption of such foods. Thus, beta carotene levels become a rough indicator for the entire carotenoid family, which may include just the cancer – preventive substances.

Carotenoids help to maintain cell differentiation. Healthy cells in the body become differentiated to perform particular tasks. They may be muscle cells or digestive tract cells or skin cells. It is a characteristic of cancer that the cells that make it up lose differentiation and become useless for any purpose except the deadly one they have evolved to perform.

Another theory is that carotenoids help promote the activities of detoxification enzymes. Whatever the reason, carotenoids are cancer fighters extraordinaire.

LYCOPENE:

Lycopene is the red pigment found in tomatoes, carrots, apricots, paprika, pink grape fruit and watermelon. Lycopene seems to be one of the most powerful antioxidants in the human diet and a vigilant cancer fighter. Researchers have demonstrated that overall, it exhibits the highest rate of all carotenoids for quenching singlet oxygen, a particularly virulent form of free radical. Few people are aware that lycopene's anti-free radical activity is roughly double that of beta carotene. This almost certainly has some role in its well-attested capacity to lower levels of breast, lung, endometrial, cervical, and prostate cancers and cancers of the digestive tract from mouth to anus.

Nutritionists usually advice to eat fresh fruits and vegetables and eat them raw when possible. The digestive system can extract only a limited amount of lycopene from fresh tomatoes because the pigmented carotenoid is locked in a matrix of proteins and fibre. Cooking breaks down the cell walls and frees the carotenoids. Lycopene inhibited the growth of those cells, basically by slowing the rate of their division.

ALAGE:

Spirulina is an algae that lives in bodies of warm, fresh water. Spirulina is 60 per cent protein by weight, supplying all eight of the human body's essential amino acids. It is one of the few dietary sources of the essential fatty acid gamma – linolenic acid and has a rich supply of chlorophyll and vitamins B12 and B6. It also has a phenomenal supply of carotenoids – the concentrations in spirulina are 10 times higher than in carrots.

Another freshwater green algae, chlorella, may be equally significant. It, too, is rich in chlorophyll, minerals, vitamins and other biologically active ingredients. Incidentally, chlorophyll, the substance that makes plants green, has been shown in many studies to have anti – carcinogenic effect.

GINSENG:

Ginseng, the famous star of Oriental herbalism, has role in cancer prevention. Ginseng showed the most protective effect against cancer of the ovaries, larynx, oesophagus, pancreas and stomach. There seemed to be no significant effect on breast, bladder, thyroid and cervical cancers. Ginseng is a phyto-oestrogen and it may occupy oestrogen receptor sites. In the process, it may cause certain favourable estrogenic changes in the body that have been associated with decreased breast cancer risk. Indeed, along the lines already observed in soy foods, ginseng may prove to be an important antagonist to breast cancer⁷.

DIETARY RECOMMENDATIONS:

The American Cancer Society has recently developed dietary recommendations as follows:

1. Avoid obesity
2. Reduce total fat consumption
3. Eat more high-fibre foods like whole grain cereals, fruits and vegetables
4. Include foods rich in vitamins A and C daily

- a. Vitamin – A
Dark green, deep yellow vegetables and fruits spinach, carrots, apricots.
 - b. Vitamin – C
Orange, grapefruit, strawberries, green and red bell peppers.
5. Include cruciferous vegetables regularly (Cabbage, Broccoli, Brussels, Sprouts, Cauliflower Etc..)
 6. Minimize consumption of smoked, salt-cured and nitrite-cured foods.
 7. Keep alcohol consumption moderate.

AYURVEDIC GUIDELINES FOR CANCER PREVENTION:

Treatments in Ayurveda are prescribed only after a careful diagnosis of the patient's body constitution, family history, sex, age, stage of the disease⁸ etc. Ayurveda treatments will therefore vary from patient to patient Ayurveda concentrates on the source of the disease using natural treatments to eliminate the root cause and promote the patient's inherent self-healing abilities by improving immunity. The most extreme example of illness caused by lack of purpose is cancer. Ayurveda considers cancer an emote The combination of diet, lifestyle and medicines play an important role in the prevention and treatment of the cancer. Ayurveda takes a different approach to achieve good health. It looks at the whole person to eliminate the cause of disease through natural therapies. It can improve health and help prevent serious illness through simple dietary changes, lifestyle changes, and purification techniques that restore balance to your body⁹.

- * Consume plenty of foods full of prana (life-force) whole, fresh, sun-ripened, enzyme-rich, alkalizing, organic and mostly plant based.
- * Avoid processed foods, refined flour products, hydrogenated fats, fast food, excessive low-quality meat and dairy, micro-waved food and leftovers.
- * Eat low glycemic foods that have a low sugar content.
- * Eat dark green leafy vegetables, especially those that are in the cabbage family such as kale and collards.

- * Discover your unique body-mind constitution and use herbs, spices and foods according to your unique individual needs.

- * Do the Abhyanga (Ayurvedic self-massage) every morning, which will stimulate the lymphatic system to eliminate toxins.

SPICES FOR CANCER PREVENTION:

Spices not only lend irresistible aromas and flavors to dishes, but have potent cancer-fighting properties¹⁰.

Here is a recipe for a delicious tri-doshic (does not aggravate Vata, Pitta or Kapha) spice-mix that has potent cancer-fighting components:

A few Examples of Powerful Cancer-fighting Spices:

Turmeric

Curcumin, inhibit tumor-promoting enzymes and interfere with the growth of cancerous tumors. As a powerful antioxidant, curcumin neutralizes free radicals that increase the risk of cancer or heart disease.

Rosemary

Rosemary has potent cancer-fighting properties by blocking carcinogen-binding to DNA, and modifying metabolic enzymes to decrease the toxicity of a carcinogen.

Ginger

Ginger not only kills cancer cells, it also prevents them from building up resistance to cancer treatment.

Coriander

Coriander seeds significantly improve digestion and are a good choice for people high in Pitta. Coriander, rich in coriandrol, helps combat breast and liver cancers. Fresh coriander is known as cilantro, and is particularly powerful in detoxifying the body of heavy metals, such as lead or mercury.

Fenugreek

In recent research, fenugreek seeds were experimentally shown to protect against cancers of the breast and prostate cancer, bone cancer. Both the seeds and the fresh leaves are good for blood sugar and fat metabolism, prevent hair loss and are beneficial for the bones.

AYURVEDIC HERBS FOR CANCER PREVENTION:

There are many Ayurvedic herbs that have anti-carcinogenic properties, such as amla, ashwaganda, triphala, guduchi, holy basil, neem, shatavari, gotu kola and brahmi 11.

CONCLUSION

Cancer is a sign that our internal environment is out of balance. Prevention is the key. The time has come to give more energy to preventative measures and educating people on ways to live healthier lives. The ancient wisdom of Ayurveda that can easily be applied by everyone, enhances the health and immunity in such a way that cancer does not even have a chance!

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