

Review Article

Review of Life Style Changes in Stomach Cancer

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Cancer originating in the esophagus, gastroesophageal junctions and stomach constitute a major health problem world wide. In the united states 37,600 new diagnoses of and 25,150 deaths from upper gastrointestinal cancers were estimated in 2009. It is more common in men and in developing countries. Histologically, adenocarcinoma of the stomach constitutes 90-95% of all gastric malignancies followed by lymphomas 1-5%, gastrointestinal tumours 2%, carcinoids 1%, adenocanthomas 1% and squamous cell carcinoma 1%. Approximately 1/3 of cancer cases may be preventable by appropriate nutritional intervention strategies. This paper focuses the risk factors, signs and symptoms, diagnosis of stomach cancer and preventive methods with life style changes to be followed in the stomach cancer.



Keywords: Stomach cancer, risk factors, symptoms, preventive methods, life style changes

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Introduction

Every year a number of precious human lives are lost due to cancer worldwide. According to the WHO the estimated annual incidence of new cancer cases would increase from the existing 10.1 million in 2000 to around 15.3 million in 2020. Stomach cancer is the fourth most common cancer. Stomach cancer causes about 800,000 deaths worldwide per year. It is the second most common cause of cancer death worldwide after lung cancer. The most common type of cancer in the stomach is Adenocarcinoma. It occurs most often in men over age 40. Estrogen may protect women against the development of gastric cancer. Gastric cancer due to smoking mostly occurs in the upper part of the stomach near the esophagus. Metastasis occurs in 80 - 90% of individuals with stomach cancer with a six month survival rate of 65% in those diagnosed in early stages and less than 15% of those diagnosed in late stages.

Risk Factors for Stomach Cancer

Family history - E Cadherin / CHD gene

Helicobacter pylori bacteria infection

Polyp larger than 2 centimeters in the stomach Inflammation and swelling of the stomach for a long time (Chronic atrophic gesticidus).

Smoking, Alchocol, Tobacco

Intestinal metaplasia

Salted foods

Pickled vegetables

Blood Group A

Obesity

Eating a diet low in fruits and vegetables

Nitrates preserved foods

Work related exposure due to coal mining, nickel refining, rubber, timber processing and asbestos exposure.

Signs and Symptoms:

Stage 1 (early)

- Indigestion or a burning sensation
- Loss of appetite
- Abdominal discomfort

Stage 2 (Middle)

- Weakness and fatigue
- Bloating of the stomach, usually after meals

Stage 3 (late)

- Abdominal pain in the upper abdomen
- Nausea and occasional vomiting
- Diarrhea or constipation
- Weight loss
- Bleeding (vomiting blood or having blood in the stool)

Diagnosis:

- Complete blood count to check for anemia
- Esophagogastroduodenoscopy (EGD) with biopsy to examine the stomach tissue.
- Stool test to check for blood in the stools

Stomach Cancer Prevention and Life Style Changes:

Avoiding cancer risk factors and increasing protective factors may help prevent stomach cancer. Stopping smoking, Alcohol and tobacco decreases the risk of stomach cancer. Treating helicobacter pylorus infection with antibiotics lowers the risk of stomach cancer. Some studies show that eating fruits and vegetable that are high in Vitamin C, Beta Carotene may lower the risk of stomach cancer. Studies have also shown that whole grain cereals, carotenoids, flavanoids and green tea may lower the risk of stomach cancer. Certain vitamins (E, Beta Carotene), minerals, (selenium, Calcium) and other Dietary supplements help lower the risk of stomach cancer.

The American cancer society recommends maintaining a healthy weight throughout life by balancing calorie intake with physical activity. Stomach cancer patients need a diet low in carbohydrates and high in proteins and fibers. Low salt intake decreases the risk of gastric cancer.

Vitamin C- Vs Stomach Cancer:

Vitamin C is an antioxidant and inhibitor of carcinogenic N-Nitroso compound production in the stomach. Higher dietary vitamin C Consumption is associated with decreased risk of gastric cancer. Gooseberry has been found to be the most abundant source of Vitamin C in the plant kingdom. Gooseberry has as much as 20 times that of an orange.

Fruit Sources:

Fruit sources include Tomatoes, guava, water melon, kiwi, peaches and black berries.

Vegetable Sources:

Sources include Brussels, sprouts, spinach, pear, sweet potatoes, carrot, pepper, pumpkin seeds, almonds and sunflower seeds. High intake of Vitamin C has been associated with decreased incidence of different cancer of the mouth, throat, vocal cords, esophagus, stomach and lung. (5)

Preventive Effect of Naturally Occurring Isothiocyanates in Stomach Cancer:

The epidemiological and pharmacological data currently available provide strong evidence that isothiocyanates present in cruciferous vegetables are very effective anti cancer agents and therefore could be used for preventive and therapeutic use. Some of these naturally occurring isothiocyanates such as allyl isothiocyanate, benzylisothiocyanate, phenethyl isothiocyanate and sulforaphane have been shown to offer protection against chemically induced cancers in experimental animals. Several recent studies demonstrated that these naturally occurring isothiocyanates can suppress the growth of cancer cells in vitro and invivo by targeting different signaling pathways leading to induction of apoptosis. Several case controlled epidemiological studies indicate that consumption of cruciferous vegetables reduces the risk of various cancers.

Isothiocyanates are the most active ingredients present in cruciferous vegetables such as broccoli, cabbage, cauliflower, Brussels, sprouts, kale, etc widely consumed by humans.(4)

Anticancer Properties of Phytosterols:

Diet is an important component of cancer chemoprevention and some dietary phytochemicals are particularly strong chemo protective agents. The American Institute for cancer research estimates that diets rich in phytochemicals can reduce cancer risk by 20 percent. (6)

Dietary Phytosterols are one such class of anticancer phytochemicals. Phytosterol are similar in structure to cholesterol but are found exclusively in plants, the most common dietary phytosterols being β -sitosterol, campestral and stigmasterol. (3)

Phytosterols are enriched in plant food stuffs that have high lipid contents such as nuts, legumes including soybean and peanuts and seeds including sesame and sunflower seeds. Concentration of total phytosterol in olive oil is 145 mg/100g, Corn oil is 950 mg / 100 g, sesame oil is 473 mg / 100 g, soy bean oil is 346 mg / 100 g, peanut oil is 189 mg / 100 g, Almond is 153 mg / 100 g, walnut is 121 mg / 100 g. Grain products such as wheat germ, wheat bran and corn flakes also contain significant levels of phytosterols. (1)

Total phytosterol intake were associated with specific protective affects in adeno carcinoma of the stomach cancer (OR - 0.33, 95% CI = 0.17-0.65). (3)

Antioxidants Used in Cancer Prevention:

Many cancers could be caused by free radicals generated as a result of oxidative stress. Free radicals are generated through the exposure to various environmental factors including ionizing radiation, cigarette smoke, excessive drinking, and pollution. Antioxidants are often referred to as “mopping up” free radicals. Antioxidants are naturally present in fruits, vegetables, nuts, grains, poultry and fish.

Beta Carotene exists in sweet potatoes, carrots, pumpkin, mangoes, apricots, green leafy vegetables like spinach.

Lycopene exists in tomatoes, water melon, guava, papaya, pink grape fruit and blood oranges.

Flavonoids are present in broccoli, tomatoes, egg plant, squash, carrots, citrus fruits, peppers, soybeans, apples, onions, tea and red wine.

Selenium is abundant in plant foods like rice and wheat.

Vitamin E is found in almonds, mangoes, nuts and broccoli as well as oils from wheat germ, sunflower, corn and soybean. It is also present in fish, palm oil, whole grains and green leafy vegetables. Vitamin E blocks the formation of certain carcinogens like nitrosamines which are formed in the stomach from nitrites used in foods. So far all human studies and trials have failed to establish a correlation between Vitamin E intake and incidence of cancer. (2)

Conclusion:

Cancer is one of the most common and deadly disease worldwide. Recent studies support the fact that specific dietary components play important role in the prevention of cancer. Anti oxidants are widely used as ingredients in dietary supplements in the hope of maintaining health and preventing cancer disease.

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