Thyroid Cancer

The thyroid, one of the largest endocrine glands of the human body, is a butterfly shaped structure located just under the Adam's apple (a laryngeal prominence featuring at the human neck). Hormones produced by the thyroid gland, T3, T4, and calcitonin, are responsible for maintaining the body's temperature, metabolic rate, heart rate, blood pressure, and weight. Worldwide incidence levels for thyroid cancer vary from very low in Europe (approx. 2 per 100,000) to the highest in the Hawaiian Chinese population (21 per 100,000). Early symptoms of thyroid cancer are fairly unnoticeable. Later on, signs such as a growing lump in the neck accompanied by pain, a voice change towards hoarseness, and swallowing difficulties emerge.

Four major types of thyroid cancer have been recognized, according to their pathology. Of these, the most common forms are the papillary and follicular forms that, fortunately, also have the best prognosis for survival. About a quarter of cases of medullary thyroid cancer are genetic in origin, whereas anaplastic thyroid cancers show the poorest response to treatment.

Risk Factors

Gender: For unclear reasons, malignant tumors of the thyroid gland, or thyroid cancers, are much two to three times more commonly seen in females than in males.

Age: Although thyroid cancer can occur in people of all ages, most cases diagnosed with thyroid cancer are between the ages of 20 and 60.

Exposure to radiation: Exposure to high levels of radiation is a proven risk factor for thyroid cancer. Exposure could occurs from high-dose or repeated X-rays used in medical treatment of the head and

neck area. Another source of radiation is radioactive fallout due to fallout from atomic weapons testing, nuclear power plant accidents, and releases from atomic weapons production plants. The risk is higher in children who were younger when the exposure happened.

Low-iodine diet: lodine is an element found in seafood, some vegetables and in iodized salt, and is necessary for the thyroid gland to produce the thyroid hormone. Without enough iodine, the thyroid enlarges to form a mass called a goiter. Goiters and thyroid cancers are more common in areas of the world where people's diets are low in iodine, comparing to the areas where dietary iodine is plentiful because iodine is added to table salt and other foods.

Genetic: Approximately 5-10% of thyroid cancer cases are due to gene changes (mutations) that are passed down from parent to child. Up to 25% of cases of medullary thyroid cancer are due to changes in the RET gene, a type of gene called a proto-oncogene. In normal situations, a proto-oncogene makes proteins that promote normal cell growth. Mutations in protooncogenes result in too much cell growth and can lead to cancer. Mutations in the RET gene can cause: familial medullary thyroid carcinoma (FMTC), multiple endocrine neoplasia type 2A, or type 2B (MEN 2A or MEN 2B). Also, individuals with certain inherited syndromes such as Cowden syndrome, Bannayan-Riley-Ruvalcaba syndrome, familial adenomatous polyposis, Carney complex, and Werner syndrome are at higher risk for more common forms of thyroid cancers (follicular and papillary types).

Diagnosis and Management

Fortunately, thyroid cancer can be cured completely if diagnosed at an early stage. The actual diagnosis

of thyroid cancer is made from the results of a biopsy, in which cells from the suspicious area are removed and looked at under a microscope. Different kinds of imaging tests may be done to know how far the cancer may have spread. Also, blood test for the abnormal level of thyroid-stimulating hormone (TSH) in the blood, and the abnormal high level of calcium and calcitonin may be checked.

Thyroid cancer is usually treated with surgery to remove all or most of the thyroid gland with any abnormal lymph nodes. The excellent prognosis with most thyroid tumors can be getting by postoperative treatment with radioactive iodine treatment. This treatment specifically targets and destroys any remaining thyroid tumor cells, therefore; reduce the risk of cancer recurrence.

Thyroid Cancer in Arab Populations

In almost all Gulf countries, thyroid is the second most common cancer site in females, preceded in all cases by breast cancer. Only in Bahrain, does thyroid cancer rank third among all cancers diagnosed in females. Outside the Gulf region, Syria is the only country in which thyroid cancer ranks among the top five cancer sites in females. While in Yemen, the bulk of thyroid cancer is of the papillary type, in other countries like Algeria and Sudan, follicular cancer is the predominant form. In both the latter countries, the number of patients presenting with advanced stages of the disease is high. On the other hand, in Jordan, incidence of follicular carcinoma has seen a significant decline in recent years, and is also accompanied by an increase in the advanced forms. In several of the Arab countries, iodine deficiency has been postulated to be one of the key factors in the rise of thyroid cancer cases. Salt iodization programs, thus, have been suggested as effective counteractive strategies.

Studies in the Kuwaiti population, meanwhile, have pointed to the role of susceptibility to thyroid cancer in

families affected with hereditary benign thyroid disease. Genetic studies have also identified polymorphisms in several genes that could lend susceptibility to papillary thyroid cancer in Arab populations.

Tips for Thyroid Cancer Patients on a Low-lodine Diet

Following a thyroidectomy (removal of the thyroid), the majority of thyroid cancer patients are placed on radioactive iodine treatment to completely eliminate remaining cancer cells in the body. These patients are also put on a low-iodine diet to starve any remaining cancerous thyroid cells of iodine. Unfortunately, following the low-iodine diet is more difficult than it sounds since many items could really have iodine in them. If the patient is not prepared, the low-iodine diet may seem restrictive especially that it lasts for two months or more. In fact, the average thyroid cancer patient loses 6-8 kilograms on their low-iodine diet. The following tips aim at aiding patients on low-iodine diet to make the right food choices without feeling deprived.

Add Your Own Salt: Most brands of food do not specify whether or not the salt included in the product is iodized. For this reason, it is important to read food labels carefully to avoid any deviation from the diet. You can buy food items with no added salt and then later add non-iodized salt you know is safe.

Shop the Vegetarian Way: This helps you find foods that conform to the standards and avoid iodine-rich dairy products.

Go to a Larger Grocery Store: Larger grocery stores carry specialized and specific brands that are more difficult to find in smaller grocery stores.

Cook at Home: Most packaged and processed foods may be rich in iodine. This is why it is safer and healthier to eat at home by adapting your favorite recipes. You can find handy ideas, delicious sauces, and even desserts at your local library or on-line.

Keep Snacks Handy: Try fresh fruits and vegetables, cut and washed. You can pack Frosted Mini-Wheats, unsalted crackers, and dried fruit in your purse or glove compartment to avoid accidentally eating foods that do not comply with the standards of the diet.