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Follicular Lymphoma

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Follicular lymphoma is a subtype of non-Hodgkin's lymphoma. It is the second most frequent type of lymphoma in the United States (US). There is some debate on which treatment is better even though currently there is not a cure. Also risk factors have been linked to follicular lymphoma.

This topic was chosen because this author works with a nurse who has follicular lymphoma. It was diagnosed at a later stage and currently this nurse is debating on going through treatment or to keep observing by "watch and wait" (no treatment given but monitor bloodwork and computed tomography (CT) and positron emission tomography (PET) scans until symptomatic). She knows there is not a cure even with treatment.

Pathophysiological Process

Signs and Symptoms

Follicular lymphoma (FL) most commonly presents as a painless, slowly progressive adenopathy. Symptoms usually do not appear until disease reaches later stages.

Systemic symptoms:

Fever

Night sweats

Weight loss in excess of 10%

Asthenia (lack of energy or strength)

Bone marrow dysfunction: anemia, leukopenia, or thrombocytopenia

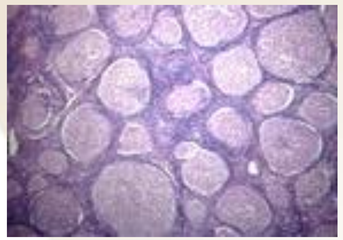
Involved lymph nodes are nontender, firm, and rubbery

Splenomegaly present in 50% of patients

Hepatosplenomegaly may occur

Underlying Pathophysiology

FL is defined as a proliferation of malignant germinal center B cells that are mixed with nonmalignant cells (T cells, follicular dendritic cells, and macrophages) and whose normal counterparts (centrocytes & centroblasts) represent the predominant cell types of the germinal cell reaction (Kridel, Sehn, & Gascoyne, 2012, p. 3424). The genetic hallmark of FL is the translocation T(14;18) resulting in the constitutive overexpression of the B-cell lymphoma 2 (bcl 2) protein, impairing the normal germinal center apoptotic program (Hiddle & Cheson, 2014, p. 1388). The first genetic hit is believed to occur in the bone marrow during the early B cell development stage (Kridel et al., 2012, p. 3424). The naïve B cells carry the t(14;18) out of the bone marrow and into the secondary lymphoid tissue, where the B cells colonize and undergo germinal center reaction but survive due to their constitutive expression of bcl 2 (Kridel et al., 2012, p. 3424). The bcl 2 may also rescue these cells from apoptosis due to weak B cell receptor (BCR) affinity (Kridel et al., 2012, p. 3424). Early FL progenitor acquire secondary genetic alterations by the influence of activation-induced cytidine deaminase (AID) (Kridel et al., 2012, p. 3425).



HISTOLOGY: LYMPH NODE: LYMPHOMA, NODULAR OR FOLLICULAR MIXED LARGE AND SMALL CELL

Significance of Pathophysiology

FL is the most common low-grade non-Hodgkin lymphoma in the US with more than 14,000 cases diagnosed each year (Nabhan et al., 2015, p. 85). According to Freytes and Merten, FL constitutes approximately 20% of non-Hodgkin lymphoma (2016). FL is rare in children, but chances increase with age (median age is 60-65 years) (Freytes & Merten, 2016).

Risk factors have been associated with development of FL. Cigarette smoking, pesticides, first degree relative with non-Hodgkin lymphoma, increased body mass index (BMI) as a young adult, and women with Sjogren syndrome (Linet et al., 2014). Viruses (Epstein-Barr virus, human T- cell lymphotropic virus and herpes virus associated with Kaposi sarcoma), chemicals (pesticides and hair dyes), and immunodeficient states have been linked to lymphomas (Freytes & Merten, 2016).

Most FL patients present at an advanced stage and have bone marrow involvement. Biopsy is needed for definite lymphoma diagnosis. After diagnosis, FL is further categorized into grades according to the number of centroblasts per high power field (hpf) (Freytes & Merten, 2016). The following is how FL is staged and graded.

Staging:
Stage 1 – one lymph node or area involved
Stage 2 – two or more involved lymph node areas on same side
Stage 3 – bilateral involved lymph node or areas
Stage 4 – disseminated disease (bone marrow, liver, or central nervous system involvement)

Grading:
Grade 1 – 0-5 centroblasts per hpf
Grade 2 – 6/15 centroblasts per hpf
Grade 3 - >15 centroblasts per hpf

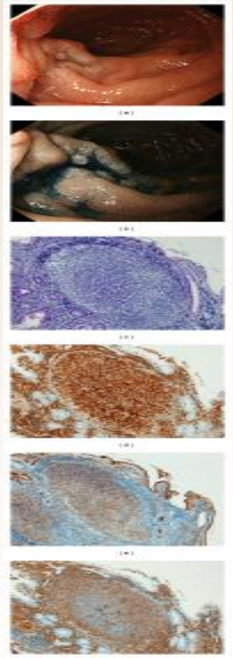


Figure 1. From: Rapidly Progressed Primary Intestinal Follicular Lymphoma with Elevation of Soluble Interleukin-2 Receptor Levels.
Esophagogastroduodenoscopy revealed whitish mucosa in the duodenum before (a) and after spraying indigo carmine dye (b). Biopsy specimens contained small- to medium-sized lymphoma cells forming lymphoid follicles ((c), hematoxylin and eosin stain). Those cells were positive for CD20 (d), CD10 (e), and BCL2 (f) but negative for CD3. Consequently, the diagnosis of follicular lymphoma was made.
Masaya Iwamuro, et al. Case Rep Oncol Med. 2014;2014:549248.

Implications for Nursing Care

FL has different treatment options, from the observation for disease symptoms (watch and wait) to high dose chemotherapy (Goodrich, 2012). The disease is not curable and is characterized by multiple relapses (Loeffler et al., 2015, p. 456). Advanced practice nurses (APN) can educate patients and families on the disease process, explain testing and treatment options, along with assist patients with support for financial assistance and support groups. APNs can also discuss side effects of treatments and monitor labs and CT/PET scans for increased growth or return of disease.

Conclusion

Of the non-Hodgkin's lymphomas, FL is the second most frequent occurring lymphoma in the US. Without signs and symptoms in early stages, FL is most often diagnosed in later stages. FL in most circumstances cannot be cured, but treatment involves alleviating symptoms.

Undergoing studies have made advances in understanding FL and providing treatment. Studies have shown patients with FL with different biomarkers, respond better to different treatments (Barton, 2013). In clinical trials, researchers are using different methods of boosting patients' immune systems to assist fighting FL including a vaccine (American Cancer Society, 2016).

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