LYMPHOMAS

Malignancies of Lymphoid cells
WHO CLASSIFICATION OF LYMPHOID MALIGNANCIES

- Listing of 35 distinct entities
- Organized by cell of origin (B cell, T cell, NK cell, and Hodgkins)
- Presence of genetic abnormalities linked to certain types of leukemia and lymphoma
- 85% are B cell related
- 10-12% are T cell related
Non-Hodgkin’s Lymphoma Subtypes

- 31% Diffuse large B cell lymphoma
- 22% Follicular lymphoma
- 7.6% MALT lymphoma
- 7.6% Mature T-cell lymphoma
- 6.7% Small lymphocytic lymphoma
- 6% Mantle cell lymphoma
- 2.4% Burkitt’s lymphoma
Malignancies of Lymphoid cells

LYMPHOMAS
WHAT IS LYMPHOMA?

- Cancer of the lymphatic system
- Abnormal growth of lymphocytes (B cells, T cells and NK cells) that grow into a large mass
- Growth occurs in lymph nodes and other organs of the lymph system (bone marrow, blood, spleen, and also the gut, lungs or brain.)
SYMPTOMS OF LYMPHOMA

- Most common presenting symptom is enlarged lymph nodes (lymphadenopathy) located in neck, armpit and groin.
- Lymphoma can occur anywhere in the body - tissues, lymph system or bone marrow.
- Some sites of swollen nodes cannot be assessed (stomach, intestines, chest) - this may cause symptoms
- Regardless of site, B symptoms may be present - Fatigue, fevers, night sweat, weight loss. This often indicates a poorer prognosis.
DIAGNOSTIC WORKUP

- History and assessment
- Blood tests
  - Flow cytometry
- X rays or scans (CT, MRI, PET)
- Fine needle aspiration of lymph nodes
- Bone marrow biopsy

http://users.rcn.com/jkimball.ma.ultranet/BiologyPages/I/ImmuneSystem.gif
Non-Hodgkin’s Lymphoma Subtypes

31% Diffuse large B cell lymphoma
22% Follicular lymphoma
7.6% MALT lymphoma
7.6% Mature T-cell lymphoma
6.7% Small lymphocytic lymphoma
6% Mantle cell lymphoma
2.4% Burkitt’s lymphoma
Most lymphomas are B-cell, can also occur in T-cells
- Rare frequency in children
- Varying involvement of bone marrow
- Chemotherapy, Biotherapy (Rituxan and Campath), Radiation therapy used to treat.
- Allogeneic transplant used as later phase treatment
PERIPHERAL T-CELL LYMPHOMA CASE

History
- Mr. W is a 52 yr old machine operator who presented in October, 2011 with severe constitutional symptoms of night sweats, 20 pound weight loss, generalized malaise, shortness of breath, and diarrhea. Baseline CT scan demonstrated a mediastinal mass, pulmonary nodules, pleural effusions, gastrohepatic adenopathy (4.2 x 2.6 cm), splenomegaly. Colonoscopy demonstrated multiple polyps with atypical lymphoid infiltrates. He underwent supraclavicular lymph node biopsy on 10/08/11 which demonstrated Peripheral T Cell Lymphoma, Bone marrow biopsy was negative. LDH at baseline is not available.

Treatment
- He began therapy with standard CHOP on 10/14/11 with immediate and rather dramatic improvement in his symptoms. His chemotherapy was then slightly modified to Hyper CVAD (arm A only) x 4 more cycles, totaling 5 cycles of chemotherapy. His last 3 cycles of chemotherapy were dose adjusted. In addition, an Omaya was placed and he has received several doses of intrathecal chemo as prophylaxis. His first restaging PET/CT on 1/29/12 demonstrated near CR. His organ function has been reviewed and deemed adequate to proceed.

BMT
- He underwent dental evaluation and single extraction without complication. He has successfully completed cytoxan mobilization (with mozobil)in February 2012 with cryopreservation of 5.4x10e6 CD34/kg. He presently feels well with complete resolution of his constitutional symptoms. Currently receiving autologous BMT.
Notes on Nursing Care:

- Monitor shortness of breath
- Manage diarrhea

- Monitor for chemotherapy side effects
- Transfuse for hgb<7 and plts <20
- Neuro assessment r/t IT chemotherapy
- Emotional support

- Teaching about immunocompromised state
- Bleeding precautions
- Side effects r/t chemotherapy
HODGKIN’S LYMPHOMA

- > 90% cure rate
- Arises from B cells
- Initial treatment with chemotherapy (various combinations)
- Radiation to sites of nodal involvement
- Autologous transplant can cure patients who fail typical chemotherapy
- Development of future treatment-related malignancies possible
## ANN ARBOR STAGING SYSTEM

<table>
<thead>
<tr>
<th>Stage</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Involvement of a single lymph node region or lymphoid structure (e.g., spleen, thymus, Waldeyer’s ring)</td>
</tr>
<tr>
<td>II</td>
<td>Involvement of two or more lymph node regions on the same side of the diaphragm</td>
</tr>
<tr>
<td>III</td>
<td>Involvement of lymph node regions or lymphoid structures on both sides of the diaphragm</td>
</tr>
<tr>
<td>IV</td>
<td>Any of the above with involvement of sites other than lymph nodes Any involvement of liver, lung or bone marrow</td>
</tr>
</tbody>
</table>

### A
- No symptoms

### B
- Unexplained weight loss of >10% of the body weight during the 6 months before staging investigation
- Unexplained, persistent, or recurrent fever with temperatures >38°C during the previous month
- Recurrent drenching night sweats during the previous month

### E
- Localized, solitary involvement of extralymphatic tissue, excluding liver and bone marrow
INTERNATIONAL PROGNOSTIC INDEX

Five Clinical Risk Factors
- Age $\geq 60$
- LDH levels elevated
- Performance status $<70$ Karnofsky or $<2$ ECOG
- Ann Arbor stage III or IV
- $>1$ site of extranodal involvement

Prognosis depends on number of risks
- 0-1 low risk
- 2 low intermediate
- 3 high intermediate
- 4-5 high risk
NURSING CARE OF PATIENTS WITH LYMPHOMA

- Safe administration of chemotherapy/biotherapy
- Management of chemotherapy side effects
- Assess for and report new symptoms
- Provide pain management support
- Patient education
- Manage emotional support
Ms. P presented in 2003 with an acute small bowel obstruction requiring surgical resection. Pathology revealed grade I follicular lymphoma. Staging at that time, including a bone marrow biopsy did reveal follicular lymphoma as well. CT was negative for adenopathy. She was treated with 4 cycles of Rituxan, which was completed in 2003. She was essentially maintained on surveillance until 2010 when she developed unintentional weight loss and new right hip and back pain. CT/PET showed a new hypermetabolic activity in the proximal right femur and a single hypermetabolic right submandibular lymph node. CT guided biopsy of the right femur in 10/26 showed low grade B cell non-Hodgkins lymphoma. She then received radiation therapy to the right femur and hip area consisting of 20 Gy in 5 fractions, completed 11/11/2010 and 4 Rituxan infusions given weekly, completed 12/22/2010. CT/PET scan on 2/3/2011 showed significantly improved disease in the right hip and resolution of the right submandibular lymph node. 6 months later she did develop some right scalp pain. CT showed a hypermetabolic soft tissue mass within the right scalp and biopsy showed diffuse large B cell lymphoma. Bone marrow biopsy one month later on 9/7/2011 did not show evidence of lymphoma. She then began chemotherapy with RCHOP in 9/2011 and completed 6 cycles on 12/28/2011. CT/PET scan on 1/12/12 showed no evidence of active lymphoma.