Approaches in Hematology

Hematology Made Easy

Hodgkin's Lymphoma

✓ **Hodgkin's Lymphoma** is a malignant proliferation of lymphoid cells with Reed-Sternberg cells (thought to arise from germinal center B-cells).

✓ **Epidemiology**

- bimodal distribution with peaks at 20 years and >50 years
- association with Epstein-Barr virus in up to 50% of cases and causal role not determined.

✓ **Clinical Features:**

❖ Asymptomatic lymphadenopathy (70%)
- Non-tender, rubbery consistency
- Cervical/supraclavicular (60-80%), axillary (10-20%), inguinal (6-12%)
- Splenomegaly (50%) ± hepatomegaly
- Mediastinal mass
- Found on routine CXR, may be symptomatic (cough)
- Rarely may present with superior vena cava syndrome and pleural effusion.
- N.B: it starts at a single site in lymphatic system (node) and spreads first to adjacent nodes. The disease progresses in contiguity with lymphatic system.

❖ Systemic symptoms
- B-symptoms (≥1 of unintentional weight loss ≥10% of body weight within previous 6 months, temperature >38ºC, or night sweats for ≥2 wk without evidence of infection), extreme fatigue especially in widespread disease, and pruritus

❖ Non-specific/paraneoplastic
- Alcohol-induced pain in nodes and nephrotic syndrome

✓ **Investigations**

- CBC
  - Anemia (chronic disease, rarely hemolytic), eosinophilia, lymphopenia, platelets normal or increased in early disease, and decreased in advanced disease.
  - HIV, HBS Ag, HCV antibody.
  - Liver enzymes and/or LFTs (liver involvement)
  - Renal function tests (prior to initiating chemotherapy)
  - ALP, Ca2+ (bone involvement)
  - ESR, LDH (to monitor disease progression)

- Imaging
  - CT chest (lymph nodes, mediastinal mass), CT abdomen/pelvis (liver or spleen involvement), and PET scans
  - Cardiac function assessment (MUGA scan or echocardiography): for patients at high risk of pre-treatment cardiac disease (age >60, history of HTN, CHF, PUD, CAD, MI, CVA, and malnourished), treatment can be cardiotoxic.
  - PFTs: if history of lung disease (COPD, smoking, and previous radiation to lung) • excisional lymph node or core biopsy confirms the diagnosis.

- BM biopsy to assess marrow infiltration (only necessary if B-symptoms, PET-positive marrow on imaging, or cytopenia)

✓ **Staging by Ann Arbor Classification protocol**

I. Single lymph node
II. 2 or more lymph nodes/regions on the same side of diaphragm.
III. Nodes on both sides of diaphragm.
The spleen is regarded as a Lymph Node region, So lymphoma with splenomegaly is considered Stage III
IV. Spread beyond lymph nodes.

- Each stage may be subdivided into A or B
  A. No systemic symptoms other than pruritus
  B. Weight loss > 10% in last 6 months, fever > 38c, night sweats

✓ **Treatment strategy**

- Stage I-II
  - ℛ Chemotherapy (ABVD (Adriamycin, bleomycin, vinblastine, dacarbazine)) followed by involved field or involved site radiotherapy (XRT).

- Stage III-IV
  - ℛ Chemotherapy (ABVD or BEACOPP (bleomycin, etoposide, adriamycin, cyclophosphamide, vincristine, procarbazine, and prednisone) with XRT for bulky disease.

- Relapse, resistant to therapy
  - ℛ High-dose chemotherapy and autologous stem cell transplant, anti-CD30Ab therapy.

- PET scan results are essential in clarifying disease response.

✓ **Important notes**

- Hodgkin's Lymphoma commonly presents above the diaphragm (classically as cervical adenopathy).
- Infradiaphragmatic involvement suggests disseminated disease.
- On physical examination, lymph nodes suspicious for malignancy are generally described as firm, fixed, non-tender, circumscribed, rubbery, and >1 cm in diameter.
- Benign nodes (usually from infection) are generally described as bilateral, <1 cm, mobile, and nontender(viral) or tender (bacterial).
- For Diagnosis, the Best initial step: Excisional lymph node biopsy shows the classic Reed-Sternberg cells (giant abnormal B cells with bilobar nuclei and huge, eosinophilic nucleoli, which create an “owl’s-eye” appearance.
- Staging is based on the number of lymph node groups involved, the presence of B symptoms, and whether the disease involves lymph nodes (both sides of the diaphragm) and extranodal sites (e.g., bone marrow).

✓ **Poor prognosis**

- Weight loss > 10% in the last 6 months
- Fever > 38 c
- Night sweats
- Other factors associated with a poor prognosis identified in a 1998 NEJM paper included:
  - Age > 45 years
  - Stage iv disease
  - Hemoglobin < 10.5 g/dl
  - Lymphocyte count < 600/l or < 8%
  - Male
  - Albumin < 40 g/l
  - White blood count > 15,000/l
  - A mass of >10 cm in size