Subject: pathology

Topic: Lecture7

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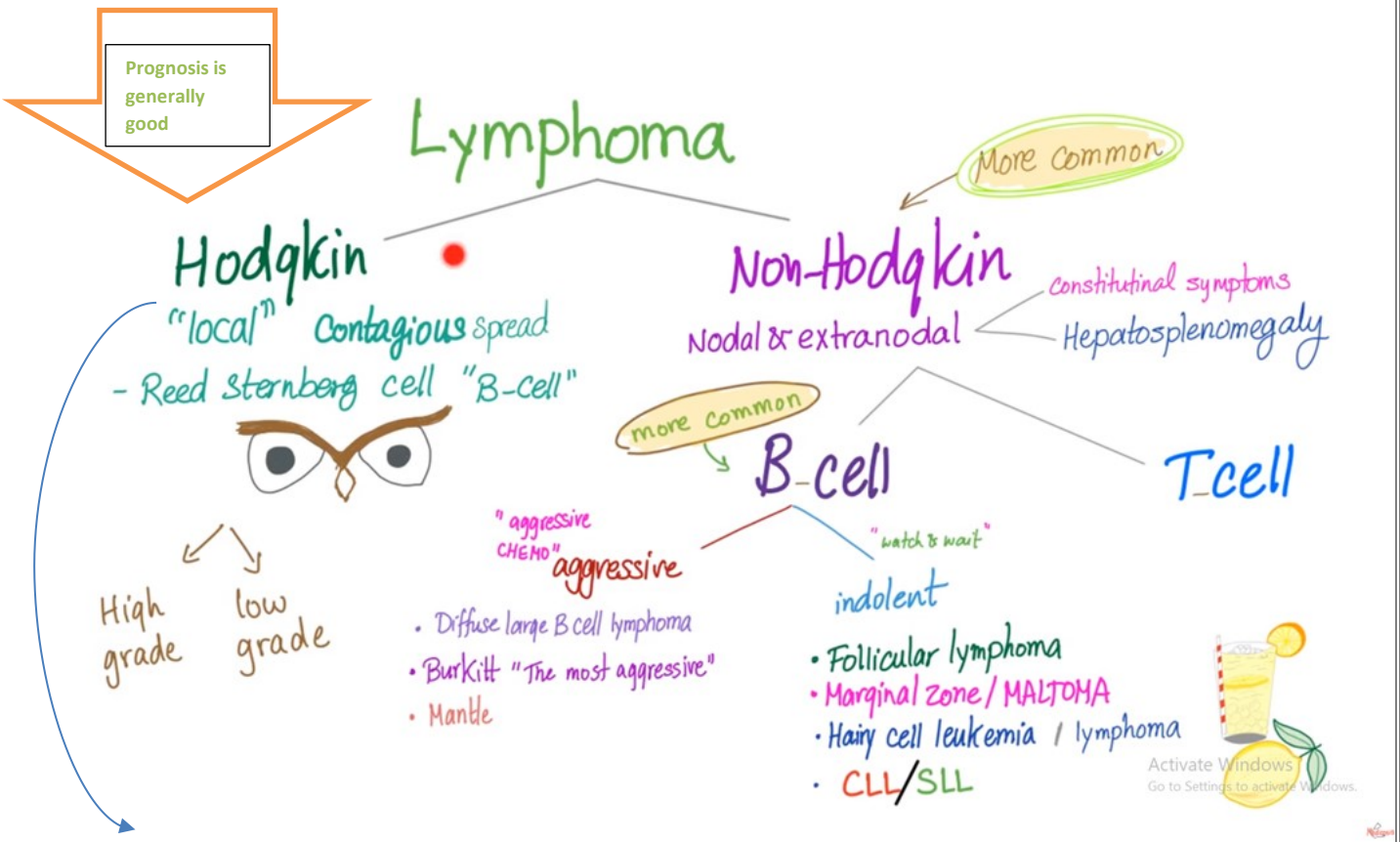
Neoplasm of lymphocyte are always malignant

Immunodeficiency is a risk factor for lymphoma(and vice versa)



Unique for hodgkin lymphoma: 1- The neoplastic cells are giant 2- spreads to anatomically adjacent LN group by a predictable way 3- *The number of neoplastic cells forms less than 10% of tumor mass while the rest are normal inflammatory cells

4- Reed-Sternberg cells (RS): bi or multinucleated giant cell, prominent nucleoli, abundant cytoplasm with eosinophilic nuclei

5- Hodgkin cells: mononuclear giant cell(single nucleus)

6- (4,5 cells both express CD30 and CD15)

- **No mesenteric LN or waldeyer ring involvement**
- **Bimodal age : children,old age**
- **B symptomps : fever,night sweat, weight loss**

Pathogenesis :

activate themselves secrete : IL-13 ,(TGF-ß)

antagonize Tcell response: Express programmed death (PD) ligands on the surface of RS

-association with EBV -causing eosinophilia in the blood in severe cases ->RS cells secrete IL-5, chemoattractant for eosinophils

Classification of Hodgkin's

Nodular lymphocyte predominance

+ for normal B cell markers (CD45, CD20), negative for CD30 and CD15

Morphology:
1-popcorn cells giant cell with multi-lobulated

2-vesicular :which means white nucleus and small blue nucleoli

3- lymphocytes, arranged in nodules because of very large follicles filling the lymph node

Background

+ for :CD30,CD15
negative for :
CD20,CD3,CD45

More common

Classic Hodgkin's

- Nodular Sclerosis ♀ > ♂ "most comon"
- Lymphocyte-rich
- Mixed cellularity
- Lymphocyte-depleted

Nodular Sclerosis HL: the most common , children and young adults.

- Morphology :the lymph node has nodules with dense sclerosis (fibrous bands) that separates these nodules from each other(fibroblast activation), show a clear cytoplasm, as aretraction artifact from formalin, called Lacunar cells

Mixed cellularity HL : Common in old people.

-Morphology: Lacks fibrous bands, diffuse numerous RS cells with background filled with lymphocytes and reddish eosinophils-> RS cells produce Cytokines-> bring all these inflammatory cells

- Associated with EBV with high percentage

NON-Hodgkin Lymphoma

1. Diffuse large B-cell lymphoma [DLBCL] : → **denovo**

- **High grade**
- **positive for CD20**
- **complicate from previous low grade B cell lymphoma**

Large 3x, extranodal Lymphoma, common in adults

Mutations:
1- Bcl6 promotor gene-> Activate proliferation of B cells

2- 30% have t(14;18) (Bcl2 IgH)-> prolongs the cell survival.

3- Few has mutation in MYC gene -> activates the cell cycle

Subtypes :

1- Primary mediastinal large B- cell lymphoma(middle age **women**): thymic B cells -> CNS, visceral organ
2- EBV- associated DLBCL: EBV -> normal polyclonal B-cell proliferation, if multiple mutations are added -> lymphoma
3- human herpes virus-8 DLBCL(immunosuppressant patient) -> HHV-8 encodes for CYCLIN D1 MIMICKER PROTEIN -> alternating the cell phase from G1 phase to S phase--→**it appears in plueral cavity by accumulating a fluid that is filled with malignant B-lymphocytes which test +ve for HHV-8**

2- Follicular lymphoma : low grade , + for BCL6 , CD20, Bcl2

1-Mainly in > 50 years , M>F as other lymphoma

2-Patients present with generalized lymphadenopathy

3-disseminates to BM, liver and spleen(80%),

Morphology: the architecture of lymphnode is effaced by crowded follicles hitting each other and fusing, with variant follicle sizes

Centrocyte:

Centrocyte predominate: low grade

Centroblast:

centroblast increase: high grade

Mutations: t(14;18) (Bcl2IgH): Overexpression of Bcl2 -> prolonged survival of lymphoma cells this mutation is found in all follicular lymphomas

3/1 ‹of patients have mutations in genes encoding histone-modifying proteins(epigenetic change)

If the follicle is Bcl2 stain +ve it means malignancy and FL and not benign reactive follicular hyperplasia

- 10 years survival
- therapy for symptomatic patient, bulkytumorsm transformation : cytotoxic chemotherapy(conventional therapy is not effective , ant-CD20, anti BCl2