# CLL Review Handout

# CLL Diagnosis

**Peripheral Smear** — Mature lymphocytes, "soccer-ball" nucleus, smudge cells

**Flow Cytometry** — Monoclonal B cell population
CD5+, CD23+
CD19+, CD20 dim (B-cell markers)
Single immunoglobulin light chain
* Don't need bone marrow for diagnosis

**Cytogenetics** — Del(11q), del(13q), del(17p), trisomy 12

SLL = small lymphocytic leukemia

Monoclonal B-lymphocytes
< 5,000 cells/mcl

CLL = chronic lymphocytic leukemia

Monoclonal B-lymphocytes
> 5,000 cells/mcl

# CLL Risk

| Good Risk | Intermediate Risk | Poor Risk |
|---|---|---|
| Deletion 13q | Trisomy 12 | Deletion 11q |
| IgVH | | Deletion 17p (TP53) |

# CLL Staging

| Rai Staging System | | OS (years) |
|---|---|---|
| Low<br>0 | Lymphocytosis | > 10 |
| Intermediate<br>I-II | LAD<br>HSM | 7 |
| High Risk<br>III-IV | Anemia<br>Thrombocytopenia | 2 |

| Binet Staging System | | OS (years) |
|---|---|---|
| A | < 3 nodal sites<br>Hb >10, plt >100 | > 7 |
| B | > 3 nodal sites<br>Hb >10, plt >100 | < 5 |
| C | Cytopenias<br>Hb <10, plt <100 | < 2 |

# CLL Symptoms

| COMPLICATION | SYMPTOM/LAB FINDING |
|---|---|
| Leukocytosis | Peripheral mature lymphocytosis, Smudge cells<br>Fatigue, LAD, HSM |
| Anemia<br>Myelophthisic | Fatigue, Pallor, SOB, Peripheral teardrop RBCs |
| Thrombocytopenia<br>Myelophthisic | Petechiae, Mucocutaneous bleeding |
| Autoimmune Hemolytic Anemia | + Hemolysis labs<br>+ DAT/Coombs Test |
| Hypogammaglobulinemia | Recurrent sinopulmonary infections |
| Richter's Transformation<br>Transformation to lymphoma | Hypercalcemia, Rising LDH, LAD, B-symptoms, Pancytopenia |
| Red Cell Aplasia | Anemia |

# CLL Treatment

Asymptomatic

↓

don't treat

Symptomatic

↓

treat

## no del17

- **Ibrutinib**
- **Acalabrutinib + Obinutuzumab**
- **Venetoclax + Obinutuzumab**
- Fludarabine +/- Cyclophosphamide + Rituximab (FCR)
- Bendamustine + Rituximab (BR)
- Pentostatin + Cyclophophamide + Rituximab (PCR)

## del17

- Ibrutinib
- Acalabrutinib + Obinutuzumab
- Venetoclax + Obinutuzumab

## Old/Poor PS

- Ibrutinib
- Acalabrutinib + Obinutuzumab
- Venetoclax + Obinutuzumab
- Chlorambucil + Obinutuzumab

# CLL Drug Side Effects & Complications

| | |
|---|---|
| **Ibrutinib** | Afib<br>Anti-platelet effect<br>Peripheral lymphocytosis<br>Diarrhea<br>Rash |

* Acalabrutinib has lower risk of afib

| COMPLICATION | MANAGEMENT |
|---|---|
| **Leukocytosis** | • **No need to treat if asymptomatic otherwise**<br>• **Rare to get leukostasis with small mature cells**<br>• **Lymphocyte doubling time can be indication for treatment** |
| **Anemia** | • **Transfusions**<br>• **Growth factor support (EPO)** |
| **Thrombocytopenia** | • **Transfusions**<br>• **Growth factor support (nplate)** |
| **Autoimmune Hemolytic Anemia** | • **Start systemic treatment**<br>• **Consider steroids** |
| **Hypogammaglobulinemia** | • **Monthly IVIG if IgG < 500 mg/dL** |
| **Richter's Transformation** | • **Treat as lymphoma** |