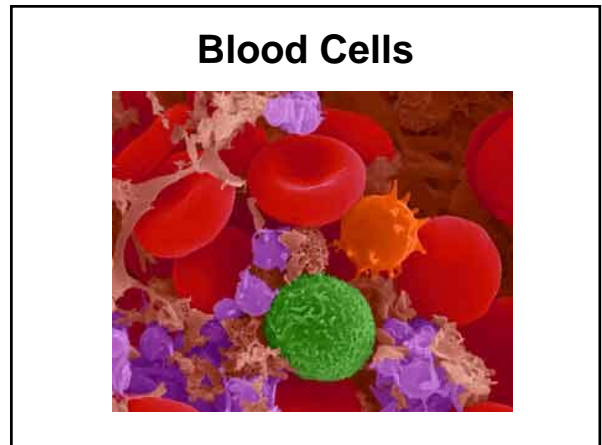


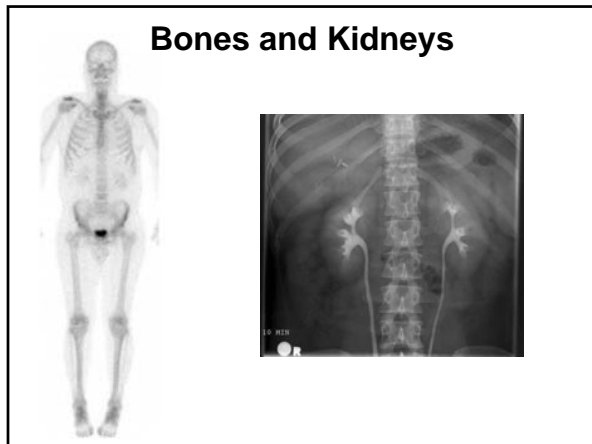
Blood Cancers

- Significant health problem
- Arise from normal cells
- Several different types/subtypes
- 4th most common cancer in BC
- Causation – genetic/environmental
- Standard management – observation, radiotherapy, chemotherapy, transplant
- Knowledge → many new treatments



Bone Marrow and Blood

Lymph Nodes and Spleen



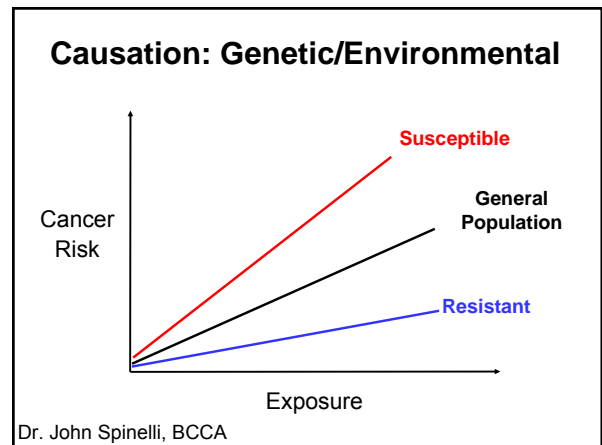
Types of Blood Cancers

	Cell of origin
Leukemia	lymphoid and myeloid
Myelodysplasia	myeloid (marrow function)
Lymphoma	lymphoid (nodes)
Myeloma	immune (antibody)

Blood Cancers in BC

New cases per year	
Leukemia	600
Myelodysplasia	200
Lymphoma	1000
Myeloma	200
<hr style="border-top: 1px dotted black;"/>	
Total	~2000

BC Cancer Registry (est. 1969)



- ### Blood Cancers
-
- #### Problems at presentation
-
- Anemia, infection, bleeding
 - Weight loss, fever, sweats
 - Enlarged lymph nodes and spleen
 - Bone, kidney and metabolic disease
 - Other – liver, lung, neurological
-

- ### Management
- Diagnosis and staging
 - General measures
 - Supportive care
 - Alternative therapy
 - Observation



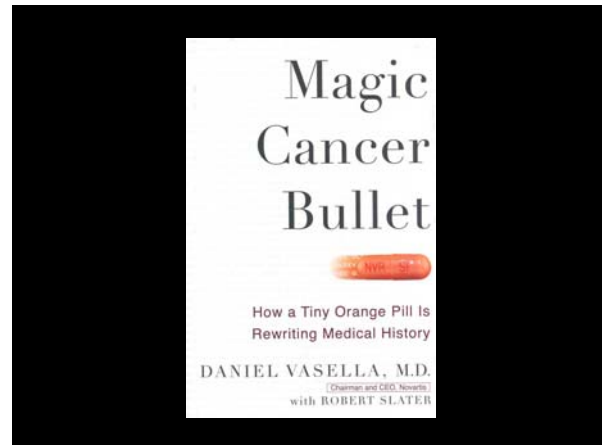
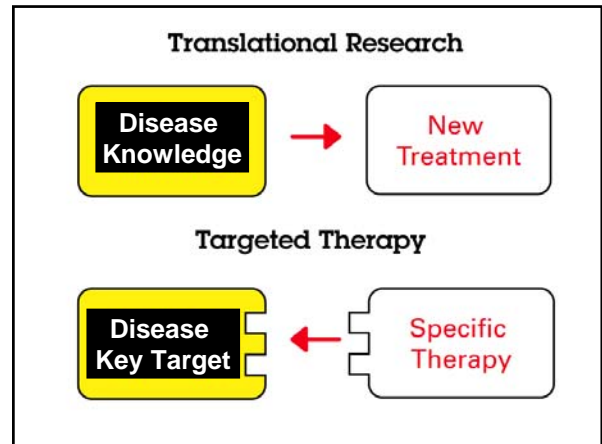
Management II

- Radiotherapy (local)
- Chemotherapy (systemic)
- Stem cell transplant
- New (targeted) therapy



Stem Cell Transplant

- **Allogeneic (donor)**
 - Standard – ablative
 - Reduced – non ablative
 - Donor – related, unrelated
- **Autologous (self)**



Management of Hematological Cancers

Khaled Ramadan
Hematologist, SPH

- ### Non-Hodgkin Lymphoma management
- Depends on the type of lymphoma
 - Indolent (low grade) Lymphoma
 - Aggressive (intermediate grade) lymphoma
 - High grade lymphoma

Low grade NHL

- Aim: control symptoms, prolong survival
- Observation
- Supportive treatment
- Radiotherapy
- Chemotherapy
 - Standard chemotherapy: CVPR, maintenance Rituximab
 - Clinical studies

Intermediate grade NHL

- Diffuse large B-cell lymphoma (40%)
- Curable in 70% of cases
- If not treated – median survival is 6-9 months
- Standard first line therapy is CHOPR
- Relapsed cases need salvage therapy +/- SCT
- Refractory cases (10%) – supportive / palliative therapy +/- investigational drugs.

High grade lymphoma

- Eg: Burkitt's Lymphoma
- Very aggressive
- Need intensive treatment – Aim for cure
- Treated as inpatient
- There is a high risk of CNS infiltration
- Cure rate 50-60%

Targeted treatment - Rituximab

- Anti- CD 20
- First approved by FDA in 1997
- Quickly incorporated into many chemotherapy regimens
- Expensive

Hodgkin Lymphoma

- Curable in 90% of pts.
- First line therapy is ABVD
- Relapsed cases: salvage chemotherapy + SCT
- Treatment toxicity and delayed side effects
- Special situations: elderly, pregnancy.

Chronic lymphocytic leukemia

- Only 30% of CLL pts will require treatment
- Incurable disease (allogeneic BMT)
- Treatment indications: Depends on the symptoms and marrow failure
- Fludarabin and rituximab based therapy
- It depends on other prognostic markers more intensive treatment might be required.

Multiple Myeloma

- Management depends on pt age and co morbidities
- Below age of 70 and good performance status – high dose melphalan + SCT
- Above age of 70 (+ poor performance status) --- chemotherapy / steroids / novel agents (bortezomib, lenalidomide, thalidomide, pomalidomide)

Myelodysplastic Syndrome

- It depends on the risk of the disease
- Low risk disease (IPSS low and Int-1): watchful waiting, supportive treatment, growth factors,
- 5q del: Lenalidomide
- High risk disease (IPSS Int-2 or high): Azacitidine, chemotherapy, allo BMT

Myeloproliferative disorders

- Polycythemia vera:
- Reduce the risk of clotting: venesection + ASA
- Essential thrombocythemia:
- Depends on the pts age and risk for clotting: antiplatelets +/- cytoreduction therapy
- Myelofibrosis:
- Supportive therapy, splenectomy, steroids, JAK-2 inhibitors

Chronic Myeloid Leukemia

- Approach has changed dramatically since 2000.
- Tyrosine kinas inhibitors are now standard of care
- Eg; imantinib, dasatinib, nilotinib
- Different side effects profile – overall manageable
- Very high remission rates and disease control

Acute Leukemia (Myeloid)

- Age <60 and good performance status
 - Intensive chemotherapy +/- BMT
 - Depends on prognosis
- Age >70:
 - Palliative / supportive
 - Clinical studies
 - New medications: Vidaza, Clofarabine

Acute Leukemia (Lymphoid)

- Poor outcome in adults
- Disease relapses in most pts (needs allogeneic BMT)
- Treated initially as inpt (induction) then followed by consolidation and then maintenance (2 years)

Division of Hematology - SPH



Division of Hematology - SPH

- Clinical:
 - Out patients clinic
 - Out patients chemotherapy, transfusions, procedures
 - Inpatients chemotherapy and consultations
 - All malignant conditions (we do not do bone marrow transplant)

Division of Hematology - SPH

- Academic:
 - Teaching: medical students, residents.
 - Research:
 - Development of disease specific databases (eg: CLL, MDS, Myeloproliferative diseases, Venous thrombosis, MM)
 - Clinical research office: prospective clinical studies (phase II and III), Laboratory studies

Questions?