## Alterations in Blood Formation and Hemostasis

Part 5 Case Study

## Case

- 1/01 Seen by MD for routine post-bone marrow TX w IV Amphotericin B and IV Gamma globulin
- Mom noted this 14 y.o male had several days of inc. resp. rate w/ some distress, fatigue, 1 day non-productive cough. Pt c/o chest pain, I shoulder pain w deep inspiration. Other hx negative.

- Exam: thin male in NAD. Vs 38, 110, 30, 100/50. Alopecia, dec. R breath sounds, bilateral basilar rales.
- PMH 7/99 Previously healthy male presented w recurrent URI. Exam-mild distress, tachycardia, tachypnea, pallor, multiple ecchymotic areas, dry mucous membranes, lymphadenopathy. C/o mouth ulcers and bleeding gums, fatigue unrelated to activity. Pain in shoulders. knees,mediastinum, Recent epistaxia and difficulty w hemostasis.

Labs-normochromic, normocytisc	
anemia, thrombocytopenia, leukopenia.  BM aspirate-hypercellular marrow w > 60% myeloblasts and Auer rods.	
<ul> <li>Past tx-total body irradiation, systemic</li> </ul>	
chemotherapy in prep for BM transplant from mother. BMT 9/99 routine post- BMT course returned home in 2 mos.	
Maintained on immunosuppressive	
therapies and electrolytes.	
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<ul> <li>1/01-hospital course- IV rehydration. CXR-bilateral infiltrates. Labs-anemic,</li> </ul>	
thrombocytopenic; WBC differential- normal WBC, polys high, bands nl, lymphs low, monocytes high. Pulse ox	
85% on room air. O2 started. BC drawn. NP swabs for viral studies, CMV,	
sputum cultures. Legionella urine sent. Pt. Desat., O2 inc., IV abx. Bronch-	
hyperemia w/o edema. R/O RSV. Started stress doses of Solumedrol for	
immune suppression to tx suspected graft vs. host disease. Continued to decompensate.	
decompensate.	
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<ul> <li>Day 3-CXR-bilateral pleural effusions, cardiomegally</li> </ul>	
<ul> <li>Day 4-CV unstable, intubated. Rapidly deteriorated.</li> </ul>	
Day 5- arrested and died.	

## Pathogenisis of Myelogenous Leukemia – Flow Diagram

Etiologic Considerations (Radiation, Drugs & Chemicals, Genetics, Viruses)

Uniclonal neoplasm of myelopoietic stem cell

Development of leukemic stem cells (blasts) at the myeloblast stage

Proliferation of blast cells Increased cell turnover Increased Increased purine immature catabolism leukocyte production Hyeruricemia Increased Uric acid nephropathy metabolic rate Increased BUN Weight loss, Increased Creatine weakness pallor

Accumulation of blast cells in bone marrow. (crowding out developing erythrocytes, thrombocytes.

Leukemic infiltration

Splenomegaly, lymphadenopathy, heptomegaly, CNS-H/A, vomiting, retinal hemorrhage, papilledema, cardiac conduction defects

Imp	paired production an	d
RBC	WBC	PLATELETS
anemia	granulocytopeni	thrombocytope
	a	nia
to alarmondia		
tachycardia,	с .	:4:-
tachypnea,	fever, sepsis,	epitaxis,
weakness, pallor, murmurs,	severe infections,	hemorrhage, petechiae,
fatigue, hypoxia	pneumonia,	bleeding gums,
rangue, nypoxia	mucosal	ecchymosis
	ulcerations	