WHAT IS MDS?

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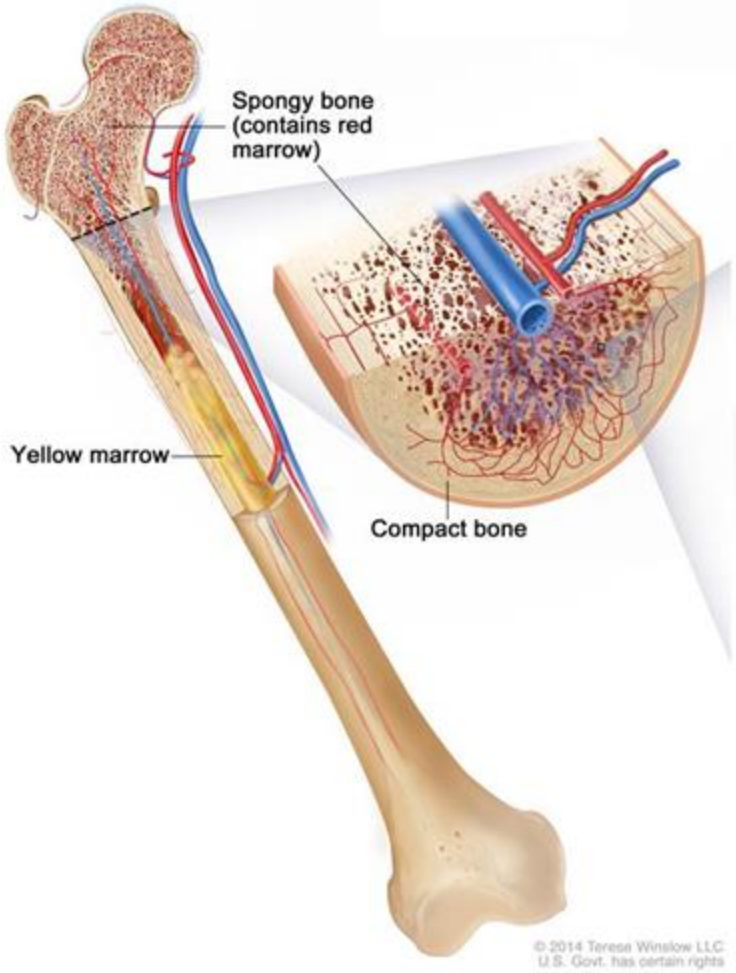
BLOOD AND ITS PRODUCTION



Blood stem cell

Red cells

Carry oxygen

White cells

Fight with infection

Platelets

Help stopping bleeding

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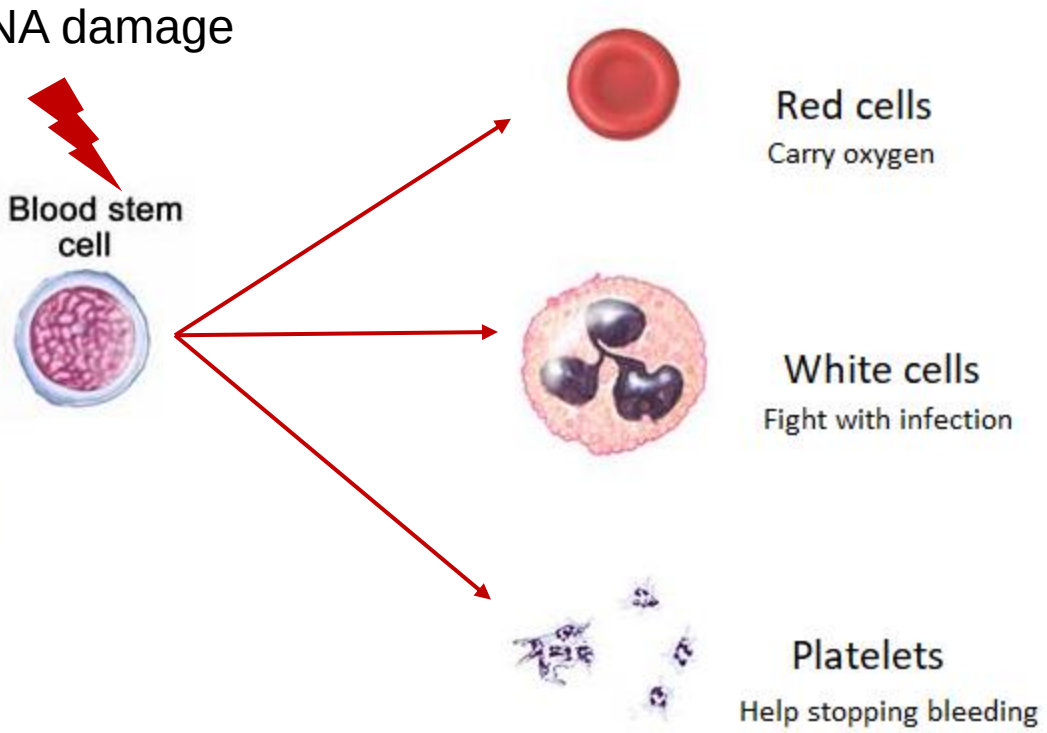
WHAT IS MDS?

- Most often we don't know what caused mutations
- Sometimes mutations are caused by chemotherapy or other chemicals
- Very rarely people are born with mutations that cause MDS



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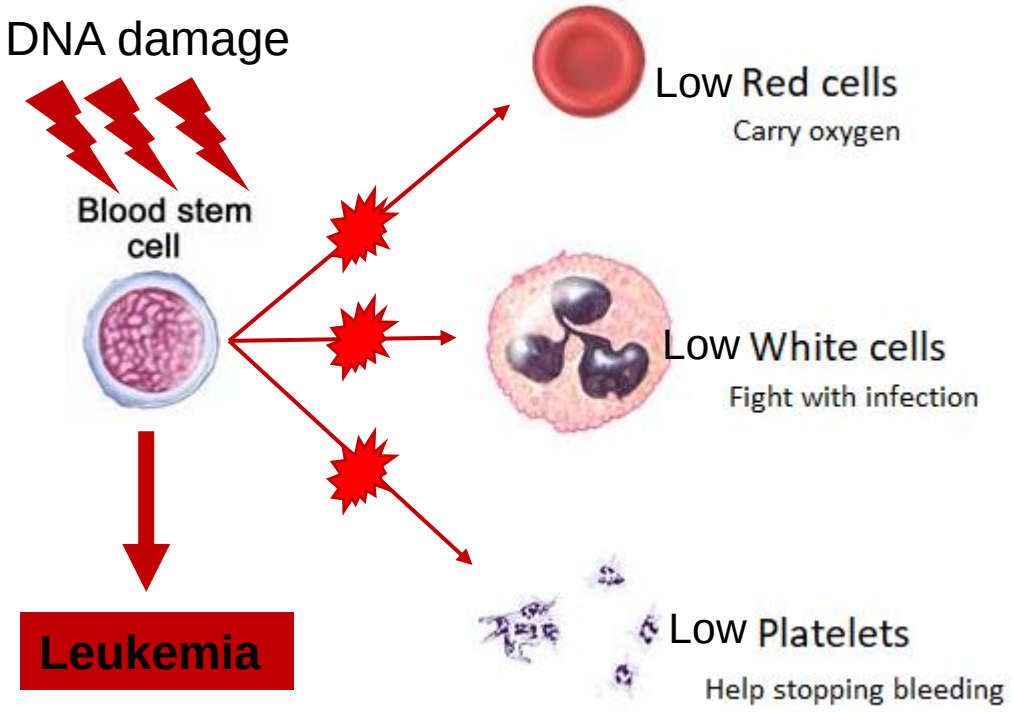
LOW BLOOD COUNTS

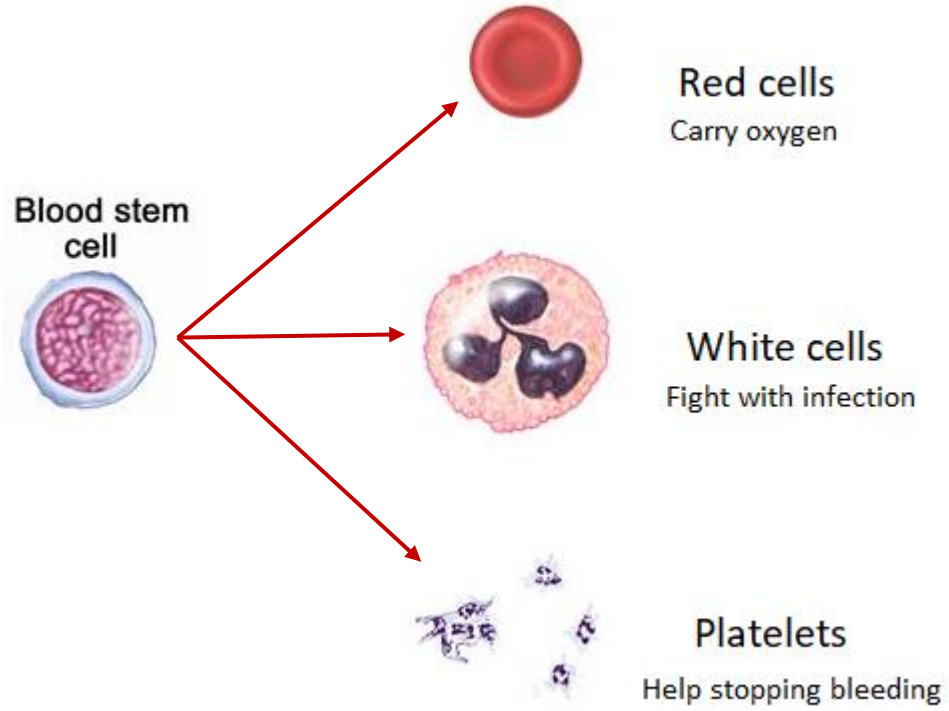


Anemia: Tiredness, dizziness, shortness of breath and chest pain

Neutropenia: predisposition to infections

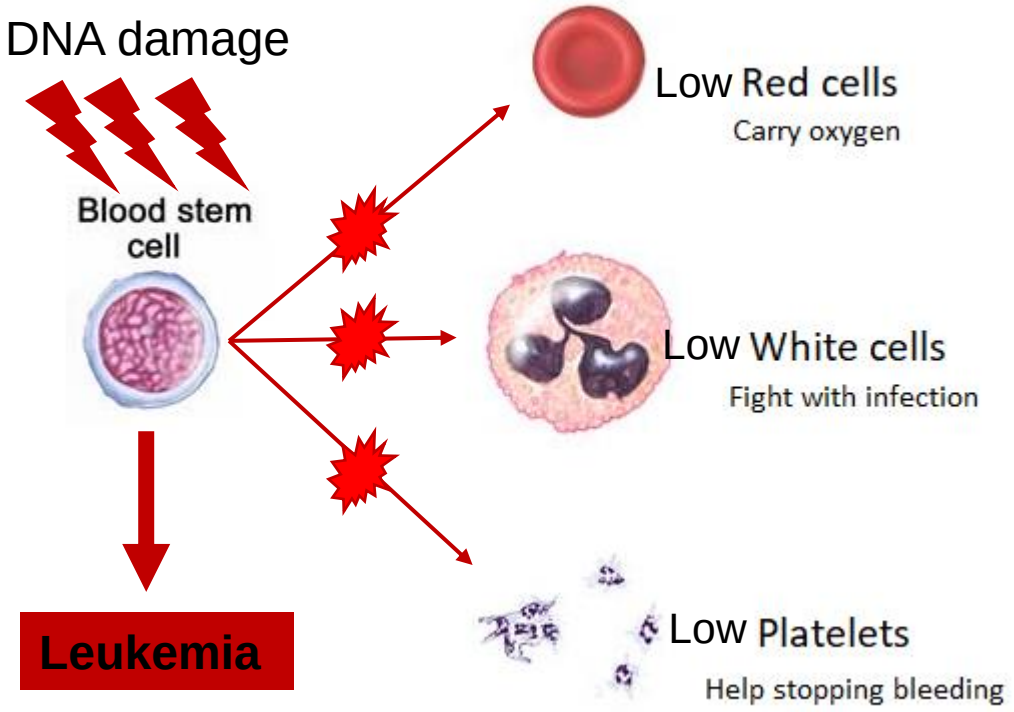
Thrombocytopenia: predisposition to easy bruising and bleeding

HOW WE DIAGNOSE MDS



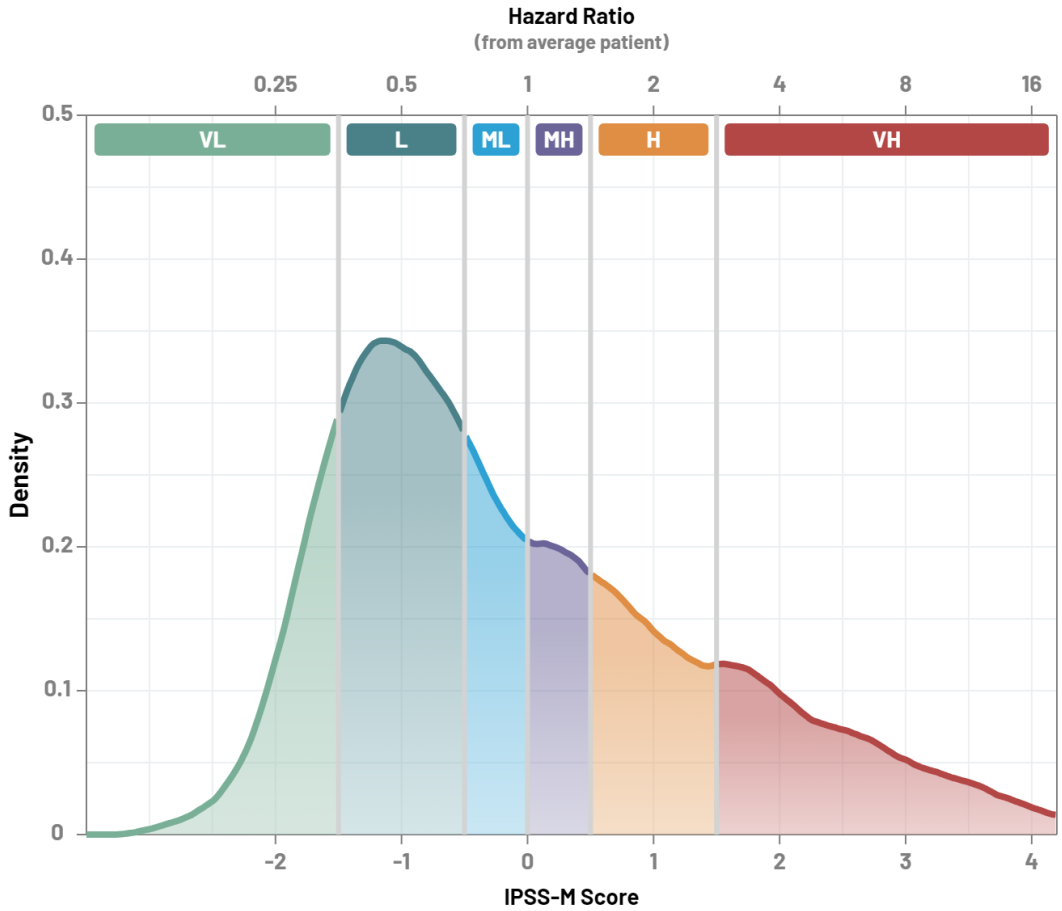
- Low blood cell counts
  1. Rule out other causes of low counts
  2. Blood tests and Bone marrow biopsy to look for any of below:
     - Abnormal cells in the marrow
       - dysplastic cells
       - sideroblasts
       - leukemia cells(blasts) <20%
     - Genetic mutations

ESTIMATING RISKS



ESTIMATING RISK: IPSS-M

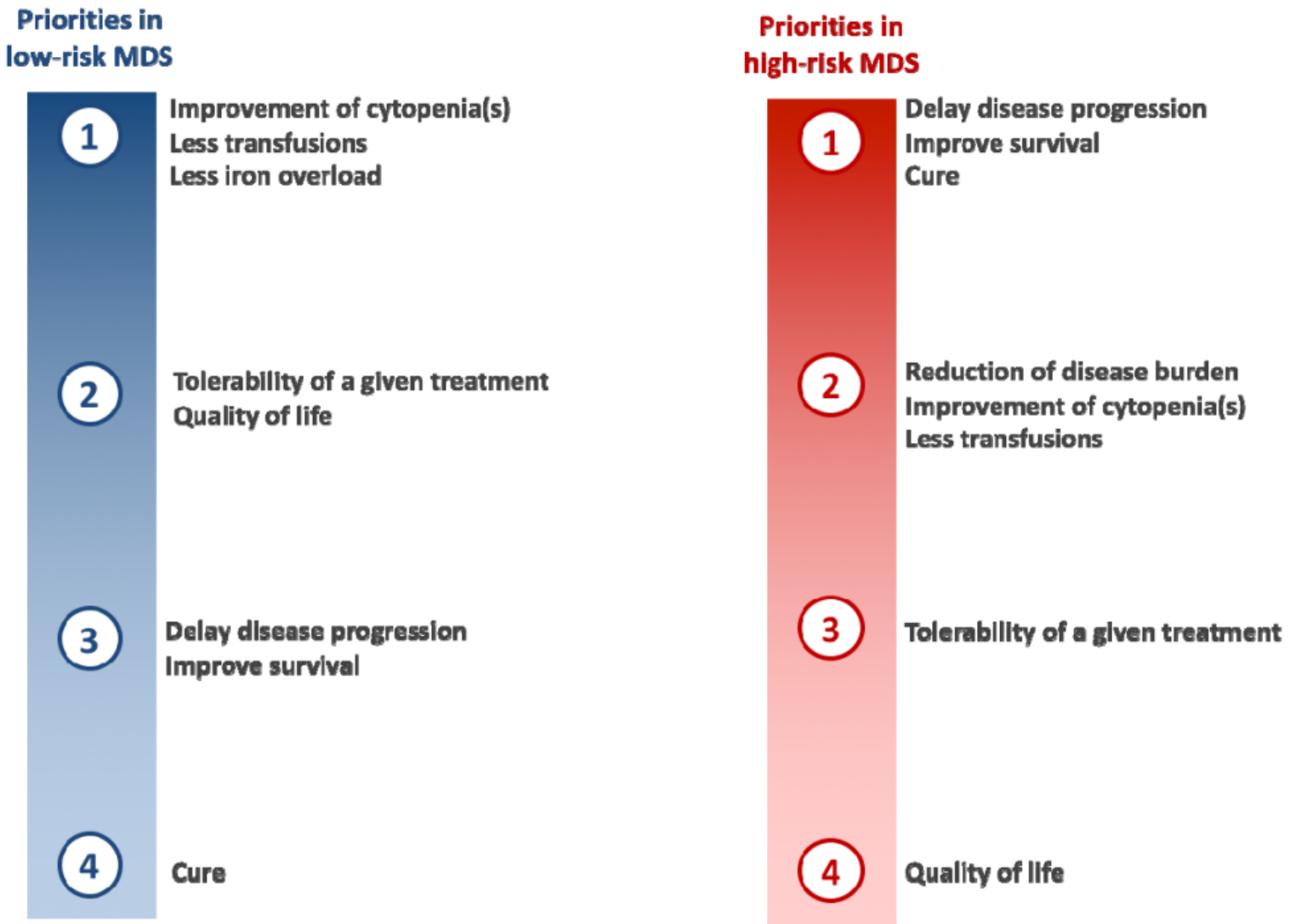
- IPSS-M needs following information
  - Number of blasts in the marrow
  - Types of mutations in the marrow cells
  - Blood count



https://mds-risk-model.com/

Greenberg et al. Blood. 2012 Sep 20; 120(12): 2454–2465

PRIORITIES



Uwe Platzbecker. Treatment of MDS. Blood 2019

HOW TO READ CBC RESULTS

Red cells

Carry oxygen

Platelets

Help stopping bleeding

White cells

Fight with infection

CBC AUTOMATED DIFF				
CBC				
WBC	*	0.5	4.5-11.0	Th/cmm
RBC	*	3.15	4.30-5.90	Mil/cmm
HGB	*	10.1	13.9-16.3	g/dL
HCT	*	29.0	39-55	%
MCV		92	80-100	fL
RDW	*	16.2	11.5-14.5	%
MCH		32.1	25-35	pg
MCHC		34.8	31-37	g/dL
PLT	*	45	140-440	Th/cmm
DIFFERENTIAL				
METHOD		MAN		
% NEUT	*	15	40-76	%
% LYMPH	*	84	24-44	%
% EOS		1	0-5	%
# NEUT	*	0.1	1.73-7.13	Th/cmm
# LYMPH	*	0.4	1.15-4.75	Th/cmm
# EOS	*	0.0	0.05-0.43	Th/cmm

In the context of MDS, we usually pay attention to neutrophils reported as:

- *ANC*
- *Absolute neutrophils*
- *# neutrophils*

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THANK YOU