Abnormal Blood Cell Production in MDS

Abnormal bone marrow is like a factory that produces healthy red cells, white cells and platelets.

- Normal marrow is crowded with good cells
- Chemical signals tell the marrow to produce more red cells, white cells, or platelets as you need them

The ‘abnormal’ MDS bone marrow factory produces cells that:
- Do not mature (blasts)
- Have a shortened life span or die in the bone marrow
- Are misshapen or ‘dysplastic’

Normal Blood Cell Production

- Normal bone marrow is like a factory that produces healthy red cells, white cells, and platelets.
- Chemical signals tell the marrow to produce more red cells, white cells, or platelets as you need them

Abnormal Blood Cell Production

- Treatment destroys cells in the bone marrow (normal and abnormal)
- This makes room for more new healthy cells
- When treatment begins:
  - A drop in counts frequently occurs
  - It should be managed by your physician

MDS Treatment Goals

- Decreased or no transfusions
- Improved bone marrow function
- Response may require more than 4 cycles
- Better quality of life
- Longer life
- Maintain response through continued treatment

Active Treatment

Treatment Cycle 1
- Immature blood cell (blast)

Treatment Cycle 2
- Treatment Cycle 3
- Treatment Cycle 4

Low blood cell counts are responsible for the symptoms MDS patients experience:
- Fatigue due to anemia (low RBC count)
- Infection (low WBC count)
- Bleeding (low platelet count)

Normal hematocrits are:
- 36-46% for women
- 41-52% for men

Normal hemoglobin is:
- 12-16 g/dL for women
- 14-18 g/dL for men

Normal WBC is:
- 3,200 - 10,000

Normal platelets are:
- 150,000 - 400,000

Red cells live and function for 120 days

Every patient responds differently to treatment
- At least 4 treatment cycles are necessary
- Some patients may require more than 4 cycles

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- 40-52% for men

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Red blood cell (erythrocyte)

Platelet

White blood cell (lymphocyte)

Erythrocyte

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