HOW WE TREAT LOW-RISK MDS

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

Neutropenia: predisposition to infections

Thrombocytopenia: predisposition to easy bruising and bleeding
In the context of MDS, we usually pay attention to neutrophils reported as:

- ANC
- Absolute neutrophils
- # neutrophils
ANEMIA: LOW HEMOGLOBIN

• Identify and fix other causes of tiredness, dizziness, shortness of breath and chest pain
• Focus on how you feel and not on the blood test result
• Create diary and record daily energy level from 0-10 and record all transfusions you receive
  • Record energy level before and after transfusion
• Many patients will not need any treatment
ANEMIA: GROWTH FACTORS

- Epoetin alpha (once to twice a week injection)
- Darbepoetin alpha (every other week injection)

ANEMIA: GROW FACTORS

- May work if EPO level <500
- No efficacy if EPO >500

Stopped transfusions or Hgb increase by 2
Decreased transfusions by 50% or Hgb increase by 1-2
No or Hgb <1 improvement

• Mechanism of action not fully understood
• Effective possibly by working on the immune system
• Usually taken once a day for 3 weeks followed by 1-week break
ANEMIA: LENALIDOMIDE

- MDS with del (5q)
- After 1.5 years, ~60% of patients still benefiting
- 40% developed low platelets

Stopped transfusions
Still on transfusions
Developed venous clot (DVT)
ANEMIA: LENALIDOMIDE

- MDS **without** del (5q)
- Patients who need transfusions, had EPO>500 or already tried erythropoietin
- Effect lasted on average for 6-7 months

- Stopped transfusions
- Still on transfusions
- Developed low platelets
- Developed clot

Blood. 2011;118(14):3765-3776
BLOOD TRANSFUSION

- In majority of cases therapy stops working and patients need life-long transfusions
- Threshold of transfusion varies widely from person to person
- Quality of life varies widely
- My recommendations:
  - Pick an infusion unit close to your home
  - Pick an infusion unit where they can do blood testing and transfusion the same day
  - Keep a diary of energy levels to find optimal frequency of transfusions
  - Keep in mind that Mondays and Fridays may be a holiday. This needs to be discussed with your nurse or physician
BLOOD TRANSFUSION: POTENTIAL COMPLICATIONS

• Infections are very rare
• Occasionally, patient may become “allo-immunized” (difficult to find matching blood product)
• Iron overload is common with chronic transfusion
LOW RISK MDS - IRON CHELATION

- Excess iron from transfusions can be deposited in liver, heart and kidneys
- Deferasirox and deferoxamine remove iron from the body
- Patients with Low-risk MDS, Ferritin >1000 ng/mL and at least 10 units of red cell transfusion are considered for iron chelation therapy.
- Patients taking deferasirox have lower chance of dying or having liver/kidney injury.
- Side effects include upset stomach

Black box warning: deferasirox increases hepatic and renal failure and GIB in high-risk MDS

LOW PLATELET COUNT

• Increased tendency of bleeding or bruising
• Transfusion thresholds are not established
• Special considerations:
  • Patients who need to be on a blood thinner or aspirin: threshold varies
  • Patients who are to undergo surgery: need at least 50 but depends on surgery
• Always seek medical attention if having bleeding
• Source of the bleeding needs to be established and treated appropriately
  • Bleeding stomach ulcer
  • Lesions in the intestine
  • Uterine fibroids
ELTROMBOPAG

- Not FDA approved for MDS
- Can reduce bleeding in patient's with platelet count <30
  - 42% vs 14%
- No significant increase of progression to AML

LOW WHITE CELL COUNT

- G-CSF shots improves numbers\(^1\)
  - Never shown survival benefit
  - Never shown QoL benefit
  - Marginal improvement of incidence of infection

- Prophylactic antibiotics
  - No benefit except for recurrent infections or for patients who receive chemotherapy

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• Azacitidine 5-day regimen after erythropoietin stopped working:
  • 16% patients stopped needing transfusion
  • Unclear if it improves quality of life
THANK YOU