

Bone Marrow Transplant in MDS

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- No conflict of interest to disclose

Bone Marrow

- Soft part of bone that acts a factory
 - Red cells
 - White cells
 - Platelets

Bone Marrow Transplant

- Blood cancers (AML, MDS, etc) do not allow the factory to function properly
- A BMT replaces unhealthy cells with healthy cells
- Two types: Autologous and Allogeneic
- Auto: Own cells
- Allo: Donor cells

- Allogeneic hematopoietic stem cell transplant (Allo-hsct) is the only curative approach for MDS patients
- Cure is not guaranteed though
- It is associated with high risk of severe and life threatening complications

- Disease
- Patient
- Donor
- Initial transplant period
- Late transplant period

Disease

R-IPSS Category	Median Survival (years)	25% AML progression (years)	Transplant
Very Low	8.8	Not reached	No Allo HSCT
Low	5.3	10.8	
Intermediate	3.0	3.2	Allo HSCT if acceptable risk
High	1.6	1.4	Allo HSCT
Very High	0.8	0.7	

Patient

- Age
- Performance status
- Reliable and dedicated caregiver
- Other medical conditions
 - Heart
 - Lung
 - Kidney
 - Liver
 - Infection
 - Stroke

Donor

- Best match donor
 - Prevent rejection
 - Keep MDS under control
 - Minimize GVHD

Donor

1. Matched sibling donor (30%)
2. Matched unrelated donor (50-60%)
3. Haplo-identical donor
3. Cord Blood

Initial Transplant Period

- Admission
- High dose of chemotherapy
- Stem cell infusion (Day 0)
- Neutropenic period
- Engraftment
- Discharge
- Hospital stay of 3-4 weeks (if all goes well)

Initial Complications

- Complications of chemotherapy
 - Nausea, vomiting, diarrhea, mucositis, fatigue, hair loss, etc
- Complications of low counts
 - Infections, fatigue, bleeding, bruising

We anticipate this and support you through this

Late Transplant Period

- Stay close by for at least 100 days
 - Monitor for late infections
 - Monitor for GVHD

Graft vs. Host Disease (GVHD)

- Donor cells = Graft
 - Patient = Host
 - MDS = Leukemia/tumor
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- We want Graft vs. Leukemia effect
 - We do not want Graft vs. Host disease

GVHD

- Donor cells misbehave
- Identify the host as foreign
- Attack the host

GVHD

- Skin
- Liver
- GI
- Lungs
- Eyes
- Mouth

GVHD

- Early = acute GVHD
- Late = chronic GVHD
- Chances of happening: 30-50%
- Spectrum: Mild (rash)----- Life threatening (liver failure, end stage lung disease, etc)

GVHD

- Medicines to prevent GVHD
- GVHD still occurs
- These medicines need strict monitoring after discharge
- Taper by day 100 if no GVHD
- Treatment is mainly steroids

Outcomes

- Best outcome: Disease controlled and some GVHD

Outcomes

- Disease relapse

Outcomes

- Non-relapse mortality
- Transplant-related mortality

- Risk vs. benefit