Reversing Myelofibrosis with Allogenic Stem Cell Transplant: Hospital Ampang experience

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Introduction:

Myelofibrosis (MF) is a clonal myeloproliferative neoplasm (MPN), characterized by anaemia, constitutional symptoms, marked splenomegaly, progressive marrow fibrosis and osteosclerosis. Generally, patient with overt MF has poor quality of life and short median overall survival (OS) of 3-6 years. The discovery of armamentarium of novel agent such as JAK-2 inhibitor has changed the paradigm of MF management, however MF remains incurable. Allogenic stem cell transplant is the only curative option for MF; however, it carries significant therapy related morbidity and mortality. In this retrospective study, we analyse the results of allogenic stem cell transplantation for the treatment of MF patients at Hospital Ampang.

Methods:

We retrospectively collect and analyse the disease characteristics, treatments, and transplant outcomes data from 23 patients with MF who received allogeneic stem cell transplantation from the haematology department of Hospital Ampang between the year 2008 to 2022.

Results

Pretransplant Characteristic

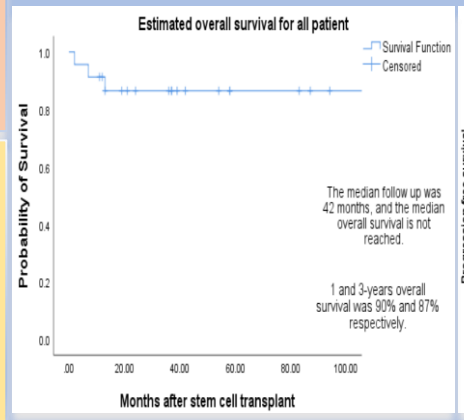
Data	n=23
Male/Female	5/18
Median age	44(21-65) year old
Diagnosis	
-PMF	16
-Post PV MF	3
-Post ET MF	4
Mutational status	
-JAK 2	14
-CALR	4
-MPL	0
-Triple negative	5
Marrow reticulin grade	
-grade 1	0
-grade 2	6
-grade 3	12
-grade 4	5
DIPSS -Plus	
-intermediate 1	2
-intermediate 2	13
-high risk	7
Prior roxulitinib	8/23
Spleen size	
-not palpable	4
-0-5cm	4
-5-10cm	4
->10cm	11

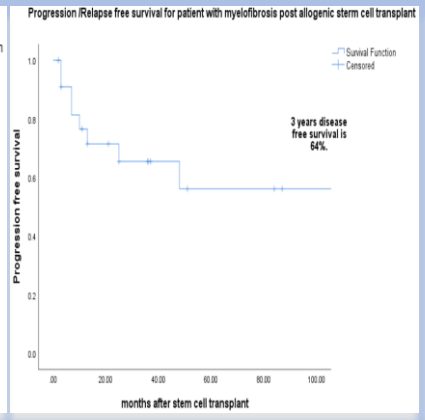
Transplant Characteristic

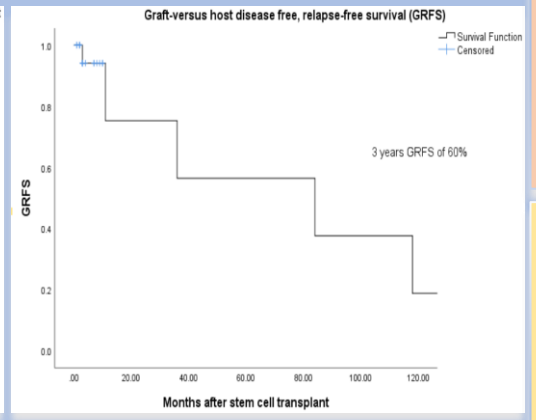
Data	n=23
Donor match	
-Matched sibling	23
-MUD	0
-Haploidentical	0
Median CD 34 count	4.83 X10^6/kg (range: 2.57-6.16x10^6/kg)
Conditioning Regime	
-Flu Bu	7
-Flu Bu ATG	15
- Bu Cy	1
Conditioning intensity	
- RIC	9
-MAC	14
GVHD prophylaxis	
- CSA/MMF	8
- CSA/MTX	14
-Tacro/MMF	1

Post-Transplant Characteristic

Data	n=23
Median Neutrophil engraftment(days)	15 days (range 9-21 days)
Median platelet engraftment(days)	14 days (range: 9-20days)
Average pack cell transfused per patient	6 unit
Average apheresis platelet transfused per patient	5.5 unit
Acute GVHD	
-grade I-II	7/23
-grade III-IV	0/23
Chronic GVHD	
-mild	5/23
-moderate	2/23
-severe	1/23
Disease status	
-remission	16/23
-persistent disease	3/23
- relapsed	4/23
Death	3/22







Conclusions

1. Our center's overall outcome for allogenic stem cell transplant in MF is exceptionally good because of optimal patient selection, particularly matched sibling donor transplant, patient of younger age.
2. Transplant related mortality at 100 day is 4.34%
3. There is a total of 3 deaths in which 1 death is due to persistent disease, and the remaining deaths are due to disseminated CMV disease and severe lung GVHD.
4. In view of good outcome of matched sibling donor allogenic stem cell transplant in our centre, it is thus feasible to perform matched unrelated and haploidentical donor stem cell transplant, expanding the options of cure for high-risk myelofibrosis patients.

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