Retrospective Review of Relapsed Multiple Myeloma Post Autologous Stem Cell Transplant: Data From an Indian Tertiary Cancer Center (Poster no MM-252)

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Background

- Multiple myeloma (MM) relapsing post autologous stem cell transplant (ASCT) continues to have overall poor outcomes in low-middle income countries (LMICs) .
- Most novel drugs are currently unavailable in India.
- The efficacy data on available salvage regimens is limited.
- Here we report the treatment outcomes of such patients treated at an Indian tertiary cancer center.

Objectives

Primary objective – Progressive free survival (PFS) with salvage treatment.
Secondary objectives - Objective response rates (ORR) – Complete/Partial/ Very good partial response.
To study the adverse events.

Materials & Methods

- Single Center retrospective study
- All registered patients of multiple myeloma who underwent ASCT between 1st January 2014 and 31st October 2020 were screened.
- Patients were followed till January 2022 for outcomes.
- 61 patient files were obtained.
- All of these patients underwent upfront ASCT and then relapsed at a later date
- For relapse also the definitions as per the IMWG 2016 guidelines were used.

- 8 patients – had biochemical relapse not requiring treatment till the last follow up

- 7 patients died before salvage therapy

46 patients were included for final analysis

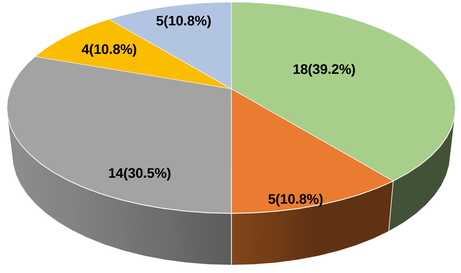
Statistical analysis

• Categorical data and continuous variables were assessed using Fisher exact test and the Mann-Whitney U test, respectively.
• Progression free was analyzed using Kaplan-Meier survival curve estimates, and the difference between groups was compared using stratified log-rank tests.
• Multivariate Cox regression analysis was done to identify independent predictors.
• All statistical computations were performed using STATA software (ver13 Stata Corp, College station, TX, USA)

Results

Baseline characteristics	
Median age	51 years (range; 45-68 years)
Males	67.8%
High – risk cytogenetics	17 (36.9%)
Extra medullary pattern of relapse	7 (15.2%)

Salvage details.



Details of salvage therapies with response rates

Salvage regimen	CR+sCR	Response rates	MR/SD	PD
VCd	2 (40%)	2 (40%)	1 (20%)	2 (40%)
VRd, VPd, VTd	5 (35.7%)	9 (64%)	1 (7%)	4 (29%)
PCd	6 (33%)	9 (50%)	4 (22%)	5 (27.8%)
Doublet	-	1 (25%)	3 (75%)	-
Others	-	1 (20%)	2 (40%)	2 (40%)
Total	13 (28%)	24 (48%)	11 (24%)	13 (28%)

PFS analysis
After a median follow-up **of 8.1 months** (IQR; 3.1 to 26.7 months), **30 patients progressed, median PFS was 6.75 months** [95% C. I; 0.7, 27.5 months].

Multi variate analysis of factors predicting PFS

Risk factors analysed	Non-progressors (N=16)	Progressed (N=30)	Hazard ratio (95% CI)	p – value*
Age ≤ 60 years	15(93.8%)	26(86.7%)		
>60 years	1(6.2%)	4(13.3%)	2.54(0.84, 7.67)	0.092
High risk cytogenetics				
Present	2(12.5%)	15(50%)		
Absent	14 (87.5%)	15(50%)	6.6(1.82, 24)	<0.001
CPC ≥5%	0(0%)	3(10%)	4.02 (1.17, 13.8)	0.3
CPC <5%	16(100%)	27(90%)		
Bone marrow PC				
≤40%	11(68.8%)	13(43.3%)		
>40%	5(31.2%)	17(56.7%)	6.6 (1.82, 24)	0.004
EMD present	1(6.2%)	6(20%)	2.63 (1.04, 6.65)	<0.001
Absent	15(93.8%)	24(80%)		
Salvage treatment				
Pomalidomide (PCd, VPd)	5(31.2)	22(73.3%)	0.93 (0.38, 2.27)	
Non pomalidomide	11(68.8%)	8(26.7%)		
Response attained				
Attained	12(75%)	12(40%)	7.48 (2.27, 24.7)	
Not attained	4(25%)	18(60%)		<0.001

EMD- extra medullary disease, CPC- circulating plasma cells, PC- plasma cells
*p-value <0.05 is statistically significant

Discussion

- Regarding the factors affecting outcomes, it was not surprising to see high rsk factors such as extra medullary disease(p<0.001), elevated CPC (p=0.004) predicting a poor PFS.
- Increased marrow cells at relapse or at presentation also predicts poor outcomes.(1) In our trial increased marrow plasma cells > 40% at relapse predicted poor outcome (p value=0.004). Achieving a response to salvage (p<0.001) predicts better outcomes. Presence of high-risk cytogenetics ([HR] 6.6, 95% C.I; 1.82-24, p-value <0.001%).
- Pomalidomide was most common agent utilized in post-transplant setting either in combination with IMiDs or with alkylating agent in around 40% of patients. Pomalidomide post ASCT has shown efficacy with mPFS of 17 months in one trial. (2) Though the response rates are similar to other trials, median PFS post salvage treatment in our trial might be slightly inferior to western literature as we had a higher percentage of high-risk disease

Strengths & Limitations

- To our knowledge this is the first attempt to analyse the treatment outcomes of post ASCT MM relapse in India.
- It is a retrospective study with a small sample size.
- We also would like to highlight the non-availability or inadequate usage of most modern therapies for MM such as mabs, ADC and CART

Conclusion

- Regardless of the salvage regimen utilized in MM patients relapsing post-ASCT, extramedullary relapse, presence of high-risk cytogenetics and poor response to salvage regimen predicted poor PFS.
- However, these findings require validation by multicentric RCTs.

References

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