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POSTER ABSTRACTS

905.OUTCOMES RESEARCH-LYMPHOID MALIGNANCIES

Real-Word Analysis of Clinical Characteristics and Outcomes Among Elderly Patients (pts) with Multiple Myeloma (MM)

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Multiple Myeloma (MM) occurs commonly among older adults and the median age at diagnosis is 70 years old. While modern MM therapeutic agents have increased overall survival (OS), the prognosis of elderly patients (pts) (defined as age >75 yo) has been trailing behind younger pts (age <65 yo). This gap has been ascribed to frailty. However, it is unknown if older MM pts have different disease biology compared with younger pts. The MMRF CoMMpass study is a longitudinal international, multicentric prospective study of 1143 pts with newly diagnosed MM. We interrogated this dataset to describe the disease characteristics and to identify prognostic factors for OS amongst pts.

The MMRF CoMMpass IA19 dataset was used for all analyses. Pts were followed for a minimum of 8 years after diagnosis. One hundred forty-six patients were > 75 yo, referred to as the elderly patient group (EPG), (12.8% of the cohort). Patient and disease characteristics are described in Table 1. Overall, 59% are male, and 41% are female; 79.5% were white, and 18.5% were black. At presentation, 63% of pts have anemia, 15.1% have hypercalcemia, and 9.6% have renal insufficiency (defined as Cr>2mg/dL). The EPG more commonly presented with advanced staging (ISS III: 46.6% vs. 22.9%, p<0.001), anemia (63.0% vs. 52.6%, p<0.001), lower performance status (ECOG ≥2: 26% vs. 8.9% (p<0.001) compared to the <65 yo group.

Regarding treatment, the EPG are more likely to receive only PI-based first-line treatment (45.2%), followed by PI/IMIDs-based combined therapy (36.3%). Only 10 elderly pts (6.9%) underwent high-dose melphalan and autologous stem cell transplant (ASCT). In terms of best overall response to any line of therapy, the EPG is much less likely to achieve deep responses (sCR or better: 22.2 vs. 3.5%, p < 0.001) and had worse OS compared to the <65 and 65-75 yo groups (47 months vs. NR vs. 80 months, respectively). The cause of death in the three age groups (disease progression vs. others was not statistically different, p=0.278). Notably, elderly pts who received triplet therapy versus double therapy at diagnosis have improved clinical outcomes with deeper responses (≥ sCR of 22.2 vs. 3.5%, p < 0.001) and increased median OS (47.6 months vs. 20.3 months, p < 0.001). We performed Cox regression analysis to evaluate prognostic factors for OS (Figure 1). Triplet therapy in the first line is associated with better OS (p=0.004). Conversely, decreased performance status (ECOG >1) and advanced ISS stage at presentation portend a worse prognosis (p=0.049 and p=0.044, respectively).

Noteworthy, there is a higher attrition rate (defined as death or lost to follow-up) in the EPG. The attrition rate was 50.7% after first-line therapy, compared to 34.0% and 33.3% for the under 65 and 65-75 age groups, respectively (p<0.001). The attrition rate for elderly pts remained significantly higher after second and third-line therapies (p<0.001 and p=0.004, respectively).

We analyzed if the clinical characteristics of the EPG differ based on race. We found that non- white patients were more likely to present with advanced stage (p=0.039) and target organ damage: anemia, p<0.001), hypercalcemia (p=0.046), and renal insufficiency (p<0.001). We did not find other differences in clinical characteristics, treatment received, attrition rates, and overall survival.

In conclusion, our study adds to the knowledge that elderly pts are more likely to present with advanced disease and diminished functional status. They are less likely to receive combined PI/IMIDs therapy and ASCT as first-line treatment and to obtain deeper treatment responses. Moreover, our data showed high attrition rates in this population. These factors could result in the shorter overall survival seen in the elderly population and underscore the importance of prompt initiation of effective and safe therapies in the elderly population. Further clinical studies are needed to characterize disease heterogeneity better and to identify interventions to improve clinical outcomes of older adults with myeloma.

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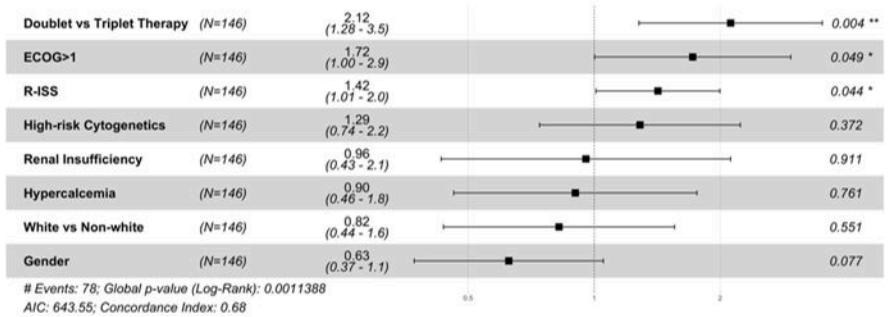
Table 1. Clinical characteristics according to age group

Characteristics	<65 yo	65-75 yo	>75 yo	p-value
Number of patients	639	358	146	
Sex				0.92
Male	386 (60.41%)	218 (60.89%)	86 (58.90%)	
Female	253 (39.59%)	140 (39.11%)	60 (41.10%)	
Race				
White	351 (54.93%)	275 (76.82%)	116 (79.45%)	**0.033**
Black	88 (13.77%)	46 (12.85%)	27 (18.49%)	
Asian	14 (2.19%)	4 (1.12%)	0 (0.00%)	
American Indian	3 (0.47%)	0 (0.00%)	1 (0.68%)	
Other	28 (4.38%)	19 (5.31%)	3 (2.05%)	
Staging				**<0.001**
ISS I	259 (40.53%)	115 (32.12%)	27 (18.49%)	
ISS II	220 (34.43%)	140 (39.11%)	41 (28.08%)	
ISS III	146 (22.85%)	97 (27.09%)	68 (46.58%)	
Symptoms at presentation				
Anemia	336 (52.6%)	235 (65.6%)	92 (63.0%)	**<0.001**
Hypercalcemia	66 (10.3%)	48 (13.4%)	22 (15.1%)	0.159
Renal Insufficiency	44 (6.9%)	40 (11.2%)	14 (9.6%)	0.061
ECOG				**<0.001**
0-1	582 (91.1%)	310 (86.6%)	108 (74.0%)	
≥2	57 (8.9%)	48 (13.4%)	38 (26.0%)	
High-risk cytogenetics				
t(4;14)	58	24	9	0.085
t(14;16)	23	6	4	0.134
t(14;20)	4	6	2	0.345
del17p	33	37	10	**0.019**
amp1q	150	115	47	0.085
1st line treatment				**<0.001**
PI-based	113 (17.68%)	95 (26.54%)	66 (45.21%)	
Combined PI/IMID-based	511 (79.97%)	237 (66.20%)	53 (36.30%)	
IMIDs-based	15 (2.35%)	26 (7.26%)	27 (18.49%)	
HDCT/ASCT	428 (67.0%)	173 (48.32%)	10 (6.85%)	**<0.001**
Best Overall Response				**<0.001**
CR	186 (29.11%)	91 (25.42%)	13 (8.90%)	
sCR	51 (7.98%)	19 (5.31%)	4 (2.74%)	
VGPR	287 (44.91%)	152 (42.46%)	65 (44.52%)	
PR	68 (10.64%)	59 (16.48%)	36 (24.66%)	
SD	13 (2.03%)	15 (4.19%)	14 (9.59%)	
PD	1 (0.16%)	1 (0.28%)	1 (0.68%)	
Attrition after 1st line	33.96%	33.24%	50.68%	**<0.001**
Attrition after 2nd line	18.88%	27.43%	41.94%	**<0.001**
Attrition after 3rd line	17.32%	26.88%	45.16%	**0.004**
Median OS (months)	NR	79.6	46.9	**<0.001**
Death	138 (21.60%)	164 (45.81%)	84 (57.53%)	**<0.001**
Cause of death				0.278
Disease Progression	85 (13.30%)	80 (22.35%)	46 (31.51%)	
Other	53 (8.29%)	73 (20.39%)	35 (23.97%)	

ISS: International Staging System, PI: proteasome inhibitors, IMiD: immunomodulatory drugs, HDCT/ASCT: high-dose chemotherapy and autologous stem cell transplantation, CR: complete response, sCR: stringent complete response, VGPR: very good partial response, PR: partial response, SD: stable disease, PD: progressive disease, OS: overall survival. Bold values indicate statistical significance at the p < 0.05. Attrition Rate (AR %) includes deceased patients and patients lost to follow-up.

Figure 1. Cox regression analysis showing prognostic factors of OS in elderly MM patients



A forest plot showing the results of multivariate regression analysis of clinical variables and primary treatment with OS in elderly MM patients. Hazard Ratios (HR) were derived from multivariate Cox regression models, with 95% Confidence intervals (CI) are shown in parentheses. *P*-values <0.05 were statistically significant.

Figure 1

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