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POSTER ABSTRACTS

652.MULTIPLE MYELOMA: CLINICAL AND EPIDEMIOLOGICAL

A Prospective, Multinational Study of Clinical and Biological Factors Associated with Short Overall Survival in Multiple Myeloma

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Introduction: Multiple myeloma (MM) is an incurable cancer, but a subset of patients can achieve long-term remission and overall survival (OS). We aimed to study the clinical and biological factors associated with short OS defined as less than 3 years.
Methods: A prospective, observational, multinational study was conducted by Australian and New Zealand (ANZ) and Asia-Pacific (APAC) Myeloma and Related Disease Registry (MRDR) from January 2013 to January 2023, across 5 countries (Australia, New Zealand, Korea, Singapore, Malaysia). Eligible patients were ≥18 years old, diagnosed with MM per International Myeloma Working Group (IMWG) criteria, received a bortezomib-containing triplet, and had at least 3 years of follow-up or had deceased within 3 years. Descriptive analysis was completed using chi-squared test for categorical variables and Wilcoxon rank-sum test for continuous variables. The Kaplan-Meier method was used for analysing OS and follow-up data. The 'stepwise' function in Stata was used for the forward stepwise logistic regression, with the p-value set to 0.1. All analyses were completed using Stata 16.
Results: Of the 1539 patients enrolled, majority were from ANZ (1071 and 359, respectively), with male preponderance (61.0%). Half were above 65 years old. High risk cytogenetic abnormalities, a criterion of the Revised International Staging System (R-ISS), was unknown for half of the patients (49.4%). 45.3% patients presented as ISS stage 1, 21.9% stage II, and 32.8% stage III, respectively at study entry . The most frequent front-line agent used in combination with bortezomib-based triplet was cyclophosphamide [VCd, 1380 (89.7%)], followed by thalidomide [VTd, 92(6.0%)], lenalidomide [VRd, 63 (4.1%)] and daratumumab [DVd, 4 (0.3%)]. The median follow-up was 29.9 months (95%CI: 28.3-31.8) and the median OS was 87.7 months (95%CI: 80.9-93.2). Thirty percent patients had OS<3 years. Clinical and biological factors associated with long OS (≥3 years) were compared with those <3 years (Table 1). Baseline factors associated with higher odds of short OS included age≥65, Eastern Cooperative Oncology Group performance status (ECOG PS)≥2, ISS III, lower creatinine clearance and platelet count, high LDH and poor cytogenetic abnormalities (Table 1). In a multivariate analysis, age≥65 (OR:2.50; p<0.001), ECOG≥2 (OR:2.08;

p<0.001), ISS III (OR:2.48; p<0.001), t(4;14)[OR:2.04; p=0.004], t(14;16)[OR:6.33; p=0.004] and 17p deletion (OR:2.77; p =0.001) were associated with a significantly shorter OS.

Conclusion: From clinician perspective, identifying patients with an increased likelihood of shorter OS through the determination of patient- and disease-specific risk factors might be clinically relevant to facilitate better treatment decisions.

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Factor	OS ≥ 3 years	OS < 3 years	*p*-value
N	1093	446	
Country			<0.001
Korea	54/1093 (4.9%)	23/446 (5.2%)	
Singapore	18/1093 (1.6%)	12/446 (2.7%)	
Malaysia	0/1093 (0.0%)	2/446 (0.4%)	
Australia	791/1093 (72.4%)	280/446 (62.8%)	
New Zealand	230/1093 (21.0%)	129/446 (28.9%)	
Gender			0.099
Male	659/1093 (60.3%)	289/446 (64.8%)	
Female	434/1093 (39.7%)	157/446 (35.2%)	
Age at diagnosis, median (IQR)	63.6 (56.7, 69.9)	68.9 (60.8, 76.1)	<0.001
Age ≥ 65 years	469/1093 (42.9%)	292/446 (65.5%)	<0.001
ECOG = 2-4	103/766 (13.4%)	92/332 (27.7%)	<0.001
ISS (Calculated field)			<0.001
1	452/860 (52.6%)	93/344 (27.0%)	
2	193/860 (22.4%)	71/344 (20.6%)	
3	215/860 (25.0%)	180/344 (52.3%)	
Revised ISS (Calculated field)			<0.001
1	146/545 (26.8%)	22/234 (9.4%)	
2	344/545 (63.1%)	136/234 (58.1%)	
3	55/545 (10.1%)	76/234 (32.5%)	
Estimated glomerular filtration rate (eGFR), median (IQR)	76.0 (56.0, 90.0)	59.0 (34.0, 80.0)	<0.001
Evidence of extramedullary disease	112/730 (15.3%)	58/303 (19.1%)	0.13
Platelet count (10^9/L), median (IQR)	223.0 (177.0, 276.0)	191.5 (141.0, 246.0)	<0.001
High LDH	119/774 (15.4%)	90/327 (27.5%)	<0.001
FISH - 1q21	91/631 (14.4%)	55/258 (21.3%)	0.012
FISH - Del(17p)	36/631 (5.7%)	33/258 (12.8%)	<0.001
FISH - t(14;16)	7/631 (1.1%)	16/258 (6.2%)	<0.001
FISH - t(4;14)	74/631 (11.7%)	46/258 (17.8%)	0.016
Combination of ≥2 FISH abnormalities	29/402 (7.2%)	26/205 (12.7%)	0.026

IQR: interquartile range; ECOG: Eastern Cooperative Oncology Group; ISS: International Staging System

Figure 1

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