

Table S1. Characteristics of Patients with Multiple Myeloma

Variables	No. of Patients (%) (N= 307)	Variables	No. of Patients (%) (N= 307)
Age, year		Albumin, g/dL	
≤ 65	205 (66.8)	<3.5	185 (60.3)
>65	102 (33.2)	≥3.5	122 (39.7)
Gender		β2-MG, mg/L	
Female	114 (37.1)	<3.5	95 (30.9)
Male	193 (62.9)	≥3.5	212 (69.1)
Isotype		FLC ratio*	
IgG	152 (49.5)	Normal	73 (59.3)
IgA	85 (27.7)	Abnormal	50 (40.7)
IgD	8 (2.6)	Lipid profile, median (mean±SD)	
Light chain	49 (16.0)	Cholesterol, mmol/L	3.37 (3.44±1.26)
Biclonal	1 (0.3)	Triglyceride, mmol/L	1.20 (1.45±1.18)
Non-Secretory	12 (3.9)	LDL, mmol/L	1.76 (1.88±0.98)
ISS Stage		HDL, mmol/L	0.88 (0.93±0.34)
I	59 (19.2)	Apo A1, g/L	1.02 (1.04±0.31)
II	101 (32.9)	Apo B, g/L	0.64 (0.65±0.28)
III	147 (47.9)	Cytogenetic Abnormality*	
LDH, U/L		Del(17p)	38 (39.6)
Normal	232 (75.6)	Del(13q)	53 (55.2)
High	75 (24.4)	1q21 amplification	54 (56.3)
Hb, g/dL		IgH translocation	46 (47.9)
<10	174 (56.7)	Initial Treatment	
≥10	133 (43.3)	PIs involved	171* (55.7)
SCr, mg/dL		IMiDs involved	162* (52.8)
<2	247 (80.5)	No new drugs	38 (12.4)
≥2	60 (19.5)	No data	12 (3.9)
Ca, mg/dL			
<10	239(77.9)		
≥10	68(22.1)		

Abbreviation: ISS, International Staging System; LDH, lactate dehydrogenase; SCr, serum creatinine; β2MG, β2 microglobulin; FLC, free light chain; SD, standard deviation; LDL, low density lipoprotein; HDL, high density lipoprotein, Apo A1, apolipoprotein A1; Apo B, apolipoprotein B; PI, protease inhibitor; IMiDs, immunomodulatory drugs;

*Records of FLC were available in 123 patients.

*fluorescence in situ hybridization (FISH) test results were available in 96 patients.

*76 patients received both IMiDs and Bortezomib-based treatment were counted twice.

Table S2. Univariate Cox Regression of Dichotomized Patient Characteristics

Variables	OS	<i>P</i>	PFS	<i>P</i>	CSS	<i>P</i>
	HR (95%CI)		HR (95%CI)		HR (95%CI)	
Age		0.119		0.305		0.147
≤ 65	Reference		Reference		Reference	
>65	1.384 (0.922-2.077)		1.207 (0.844-1.726)		1.376 (0.896-2.113)	
Gender		0.419		0.577		0.628
Male	Reference		Reference		Reference	
Female	0.839 (0.550-1.282)		0.903 (0.631-1.291)		0.896 (0.576-1.394)	
Isotype*						
IgG	Reference		Reference		Reference	
IgA	1.667 (1.051-2.646)	0.031	1.425 (0.968-2.099)	0.074	1.453 (0.893-2.363)	0.134
IgD	1.565 (0.560-4.375)	0.395	0.833 (0.303-2.285)	0.724	1.576 (0.563-4.412)	0.389
Light chain	1.996 (1.163-3.425)	0.013	1.403 (0.861-2.284)	0.176	1.653 (0.921-2.968)	0.094
No secretory	1.305 (0.403-4.228)	0.659	0.653 (0.206-2.075)	0.472	1.360 (0.419-4.414)	0.611
Apo A1, g/L		<0.001		0.002		<0.001
≤0.9	Reference		Reference		Reference	
>0.9	0.506 (0.342-0.749)		0.578 (0.411-0.814)		0.469 (0.310-0.708)	
Albumin, g/dL		0.884		0.180		0.571
<3.5	Reference		Reference		Reference	
≥3.5	0.970 (0.650-1.449)		0.785 (0.552-1.117)		0.883 (0.576-1.354)	
β2MG, mg/L		<0.001		<0.001		<0.001
<3.5	Reference		Reference		Reference	
≥3.5	2.522 (1.563-4.069)		2.034 (1.383-2.989)		2.360 (1.441-3.869)	
LDH		<0.001		<0.001		<0.001
Normal	Reference		Reference		Reference	
High	2.979 (1.931-4.595)		2.210 (1.500-3.256)		3.136 (1.987-4.948)	
Hb, g/dL		0.002		0.015		0.001
<10	Reference		Reference		Reference	
≥10	0.522 (0.344-0.793)		0.649 (0.459-0.919)		0.479 (0.307-0.747)	
SCr, mg/dL		0.037		0.083		0.033
<2	Reference		Reference		Reference	
≥2	1.661 (1.035-2.665)		1.463 (0.954-2.243)		1.720 (1.046-2.827)	
Ca, mg/dL		0.110		0.178		0.149
<10	Reference		Reference		Reference	
≥10	1.438 (0.923-2.240)		1.312 (0.885-1.945)		1.415 (0.885-2.263)	

Abbreviation: ISS, International Staging System; Apo A1, apolipoprotein A1; LDH, lactate dehydrogenase; β2MG, β2 microglobulin; SCr, serum creatinine.

Table S3. Evaluation of the Three Prognostic Model

		AUC	AIC	BIC	C-index
OS	DS	0.633 (0.533-0.734)	946.5	950.2	0.514
	ISS	0.710 (0.603-0.819)	938.8	942.5	0.593
	ZS	0.852 (0.788-0.917)	912.5	916.2	0.669
PFS	DS	0.613 (0.497-0.846)	1277.8	1281.5	0.528
	ISS	0.742 (0.638-0.846)	1269.8	1273.6	0.591
	ZS	0.742 (0.654-0.830)	1253.3	1257	0.644
CSS	DS	0.634 (0.534-0.734)	843.4	847.1	0.513
	ISS	0.701 (0.590-0.813)	839	842.7	0.58
	ZS	0.853 (0.786-0.919)	813.5	817.2	0.672

Abbreviation: DS, Durie and Salmon system; ISS, International Staging System; ZS, Zhongshan Score;

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The International Myeloma Working Group (IMWG) consensus criteria for response and minimal residual disease assessment in multiple myeloma, progressive disease is defined as following:

Any one or more of the following:

- ♦ Increase of 25% from lowest confirmed response value in one or more of the following criteria:
 - ✓ Serum M-protein (absolute increase must be ≥ 0.5 g/dL);
 - ✓ Serum M-protein increase ≥ 1 g/dL, if the lowest M component was ≥ 5 g/dL;
 - ✓ Urine M-protein (absolute increase must be ≥ 200 mg/24 hours);
 - ✓ In patients without measurable serum and urine M-protein levels, the difference between involved and uninvolved FLC levels (absolute increase must be >10 mg/dL);
 - ✓ In patients without measurable serum and urine M-protein levels and without measurable involved FLC levels, bone marrow plasma-cell percentage irrespective of baseline status (absolute increase must be $\geq 10\%$);
- ♦ Appearance of a new lesion(s), $\geq 50\%$ increase from nadir in SPD** of >1 lesion, or $\geq 50\%$ increase in the longest diameter of a previous lesion >1 cm in short axis;
- ♦ $\geq 50\%$ increase in circulating plasma cells (minimum of 200 cells per microL) if this is the only measure of disease.