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654.MGUS, AMYLOIDOSIS AND OTHER NON-MYELOMA PLASMA CELL DYSCRASIAS: CLINICAL AND EPIDEMIOLOGICAL

Clinical Implication of Minimal Residual Disease By Multiparameter Flow Cytometry in Light Chain Amyloidosis

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We evaluated bone marrow minimal residual disease (MRD) by multiparameter flow cytometry (sensitivity 10^{-5}) in 91 patients with light chain amyloidosis (AL). The overall MRD negative rate was 42.9% (n=39). The MRD negative rate among patients in complete response, very good partial response, and less than PR was 61.5% (24/39), 35.7% (10/28), and 0% (0/11), respectively. There were no significant differences in baseline characteristics regarding age, light chain burden, and organ involvement, while lower proportion of male sex and cytogenetics t(11;14) by FISH was observed in MRD negative patients. Patients with MRD negativity had a numerically higher proportion of cardiac response (54.8% vs 40.5%, P=0.224) and renal response (52.6% vs 41.7%, P=0.474). After a median follow-up time of 29.0 months, patients with MRD negativity had a near significantly longer event-free survival (EFS, defined as hematological progression/organ dysfunction/initiation of next-line therapy and death) from treatment initiation than patients with MRD positivity (NR vs 38.8 months, P=0.078). The 5-year overall survival (OS) for patients with MRD negativity and MRD positivity were 82.7% and 67.8%, respectively (P=0.229).

Disclosures No relevant conflicts of interest to declare.

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Table 1. Baseline and treatment characteristics

	All patients N=91 n (%)/median (range)	MRD positive N=52 n (%)/median (range)	MRD negative N=39 n (%)/median (range)	*P* value
Age, years	60 (40-75)	60.5 (45-75)	59 (40-73)	0.806
Male sex	64 (70.3)	42 (80.8)	22 (56.4)	0.012
Lamda involved light chain	71 (78.0)	40 (76.9)	31 (79.5)	0.903
dFLC, mg/L	97.2 (1.0-1459.0)	106.3 (1.0-1366.1)	76.1 (1.1-1459.0)	0.599
dFLC>50mg/L	65 (71.4)	39 (75.0)	26 (66.7)	0.303
dFLC>180mg/L	26 (28.6)	15 (28.8)	11 (28.2)	0.900
BMPCs, %	8 (1-40)	8 (2-30)	10 (1-40)	0.031
BMPCs≥10%	44 (48.4)	21 (40.4)	23 (59.0)	0.079
t(11;14) by FISH	34/85 (40.0)	25/48 (48.1)	9/37 (24.3)	0.01
Troponin-T, ng/ml	0.052 (0.003-0.376)	0.054 (0.005-0.352)	0.05 (0.003-0.376)	0.332
NT-proBNP, pg/ml	1999.0 (28.5-21316.0)	2005 (28.5-21127.0)	1546.0 (36.0-21316.0)	0.952
24h urine protein, g	0.81 (0.03-13.88)	0.8 (0.09-13.88)	0.96 (0.03-8.95)	0.713
Cardiac involvement	73 (80.2)	42 (80.8)	31 (79.5)	0.879
Mayo 2004	(in 73 patients)	(in 42 patients)	(in 31 patients)	0.108
I	1 (1.4)	1 (2.4)	0 (0.0)	
II	12 (16.4)	4 (9.5)	8 (25.8)	
III	60 (82.2)	37 (88.1)	23 (74.2)	
Mayo 2004 IIIb+IIIc	20 (27.4)	12 (28.6)	8 (25.8)	
Renal involvement	43 (47.3)	24 (46.2)	19 (48.7)	0.662
Renal Stage	(in 43 patients)	(in 24 patients)	(in 19 patients)	0.341
I	26 (60.5)	16 (66.7)	10 (52.6)	
II	16 (37.2)	7 (29.2)	9 (47.4)	
III	1 (2.3)	1 (4.2)	0 (0.0)	
Hepatic involvement	5 (5.5)	2 (3.8)	3 (7.7)	0.648
First line treatment with proteasome inhibitor	91 (100.0)	52 (100.0)	39 (100.0)	N/A
Bortezomib-based	81 (89.0)	44 (84.6)	37 (94.9)	
Ixazomib-based	10 (11.0)	8 (15.4)	2 (5.1)	

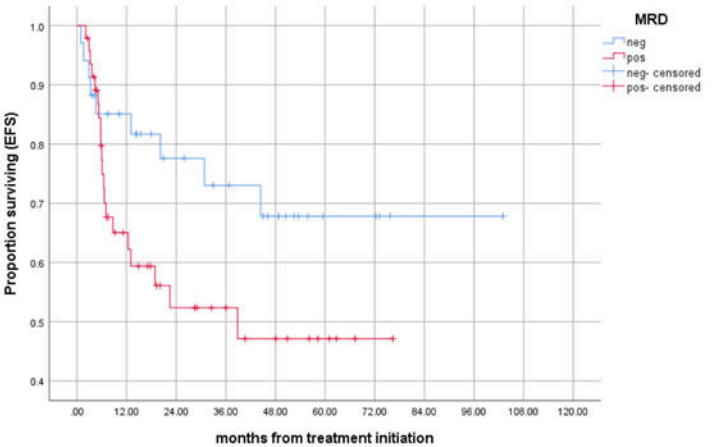

Figure 1. Event free survival in patients with MRD negativity and MRD positivity

Figure 1