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Introduction

IgM-secreting myeloma is rare, encompassing about 1% of all the myeloma cases. Given its rarity, the characteristics and survival of these patients have not been extensively studied. We carried out a multicenter retrospective study in patients with IgM myeloma.

Methods

- The study protocol was reviewed and approved by the Institutional Review Board of each participating institution.
- Diagnosis was made based on the presence of >10% plasma cells in the bone marrow and the identification of an IgM monoclonal spike of any size.
- Clinical data were gathered and included age, sex, hemoglobin, calcium, LDH, estimated glomerular filtration rate (GFR), presence of lytic bone lesions, International Scoring System score, cytogenetic abnormalities, final outcome and overall survival (OS) time.
- OS was defined as the time in months from diagnosis to last follow-up or death.
- The Chi-square and the rank-sum tests were used to compare categorical and continuous variables, respectively.
- The Kaplan-Meier method was used to estimate OS.
- The Cox proportional-hazard regression method was used to fit univariate survival models, reported as hazard ratio (HR) with 95% confidence intervals (CI).
- All reported p-values are two-sided, and were considered significant if less than 0.05.

Results

- A total of 159 patients with IgM myeloma from 23 centers were included in this analysis.
- 95 patients (60%) were from the US, 62 patients (39%) from Europe and 2 patients (1%) from Latin America.

Table 1. Patients' characteristics

Characteristic	Number or median	% or range
Age at MM diagnosis	65 years	37-86 years
Age >70 years	37/159	23%
Male sex	108/159	68%
Hemoglobin <10 g/dl	49/155	32%
Est GFR <60 ml/min	56/153	37%
Elevated calcium	24/153	16%
Lytic lesions	86/148	58%
Elevated LDH	28/118	24%
Serum IgM level	2510 mg/dl	35-12100 mg/dl
IgM >3000 mg/dl	64/138	46%
Kappa	92/153	60%
Lambda	58/153	38%
ISS stage 1	53/147	36%
ISS stage 2	63/147	43%
ISS stage 3	31/147	21%
Poor cytogenetics	11/80	14%
t(11;14)	26/67	39%
CD20 expression	15/26	58%
Cyclin D1	10/15	67%

Results (II)

- 149 patients (94%) received at least one line of systemic therapy for myeloma.

Table 2. Frontline treatment of IgM myeloma

Regimens	Number	%
IMiD only-based regimen	31	20%
PI only-based regimen	39	25%
IMiD + PI-based regimen	22	14%
Chemotherapy-based regimen	39	25%
Steroids only	10	6%
Rituximab alone	5	3%
ASCT	22	28%

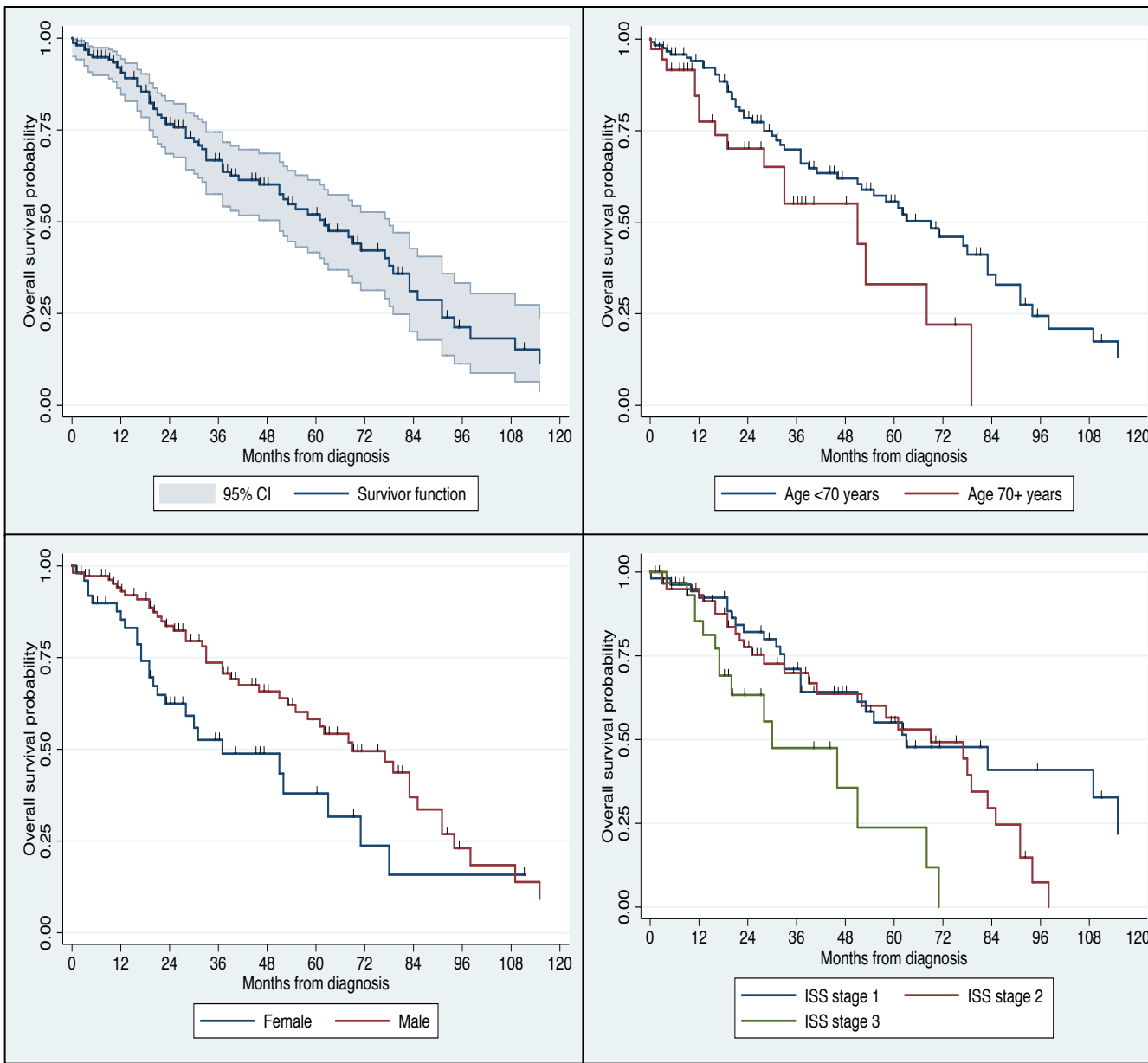
- The median follow-up was 47 months, and 74 patients (47%) have died.
- The median OS was 62 months (95% CI 51-79 months).
- Cause of death was known in 38 patients, and the most common was myeloma progression (74%).

Table 3. Univariate overall survival analysis

Variable	HR (95% CI)	P
Age >70	1.83 (1.03-3.25)	0.04
Male sex	0.56 (0.34-0.90)	0.02
ISS stage 2	1.43 (0.83-2.48)	0.20
ISS stage 3	3.03 (1.54-5.98)	0.001

Results (III)

Figure 1. Overall survival of IgM myeloma patients for the entire cohort (A), and according to age (B), sex (C) and ISS stage (D)



Conclusions

- Patients with IgM myeloma present with similar clinical characteristics than patients with non-IgM myeloma.
- Pathologically, CD20 expression is common.
- t(11;14) was the most common cytogenetic abnormality identified.
- Age, sex and the ISS stage have prognostic value in IgM myeloma.

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