

A REAL-LIFE COHORT STUDY OF AL AMYLOIDOSIS PATIENTS INELIGIBLE FOR AUTOLOGOUS STEM CELL TRANSPLANTATION DUE TO SEVERE CARDIAC INVOLVEMENT OR ADVANCED DISEASE

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OBJECTIVE

To study the outcome of patients with AL amyloidosis who were ineligible for high dose melphalan (HDM) and autologous stem cell transplantation (ASCT).

METHOD

A real-life retrospective observational cohort study of Dutch patients with AL amyloidosis ineligible for HDM and ASCT was performed at the University Medical Center Groningen from January 2001 until April 2017. Primary outcome measure was overall survival (OS). Secondary outcome measures were haematological response (HR), organ responses, and treatment toxicity.

RESULTS

Eighty-four patients were included. Ineligibility was due to NYHA class III/IV (n=58), otherwise advanced disease (n=11), advanced age (n=14), or treatment refusal (n=1). Early death (<3 months) rate was high (44%). Median OS improved from 4 months in period 2001-2009 (n=36) to 8 months in period 2009-2017 (n=48, p=0.02) (Figure 1A). HR was seen in 29% and 42% of the patients, respectively.

Table 1. Baseline demographic and clinical characteristics of AL-amyloidosis patients.

Characteristics	No. of patients (%)	Mean(SD), Median(IQR) [§]
Total	84 (100)	
Female	40 (48)	
Age (years)	84 (100)	66 (9)
dFLC (mg/l)	79 (94)	166 (86 - 480)
Plasma cell content bone marrow (%)	79 (94)	10 (5 - 17)
Serum creatinine (μmol/l)	84 (100)	99 (71 - 141)
Proteinuria (g/24 hrs)	72 (86)	1,1 (0,3 - 7,0)
Beta-2 microglobulin (mg/l)	67 (80)	3,7 (2,6 - 6,6)
NT-proBNP (pg/ml)	79 (94)	5243 (1094 - 9472)
cTnT (ng/ml)	80 (95)	0,07 (0,03 - 0,12)
Septal thickness (mm)	78 (93)	13 (4)
Left ventricular ejection fraction (%)	82 (98)	54 (11)
Alkaline phosphatase (IU/l)	83 (99)	97 (69 - 151)
Serum albumin (g/l)	83 (99)	31 (9)
>2 major organs involved	24 (29)	
Heart involvement	70 (83)	
Kidney involvement	51 (61)	
Liver involvement	37 (44)	
Peripheral nerve involvement	11 (13)	
NYHA stage >II	58 (69)	
Mayo stage >II	68 (81)	
WHO performance score >2	67 (80)	
Multiple myeloma	12 (14)	
Waldenström's disease	2 (2)	

Number of patients and percentage of total number with a particular characteristic or in whom that characteristic has been analyzed. For the latter the mean or median has been presented in the next column. [§]Data are expressed as median (interquartile range, from 25th percentile - 75th percentile, IQR) or mean (standard deviation, SD) where appropriate.

Abbreviations: dFLC, difference between involved and uninvolved free light chain; NT-proBNP, N-terminal pro-B type natriuretic peptide; cTnT, cardiac troponin T; NYHA, New York Heart Association; WHO, World Health Organization.

RESULTS

Median OS was 36 months after induction treatment with bortezomib (n=32) and 18 months with immunomodulatory imide drug (IMiD) (n=16), both higher than median OS (7 months) with other treatment regimens (n=27) (Figure 1B). Incidence of toxicity was high (51%).

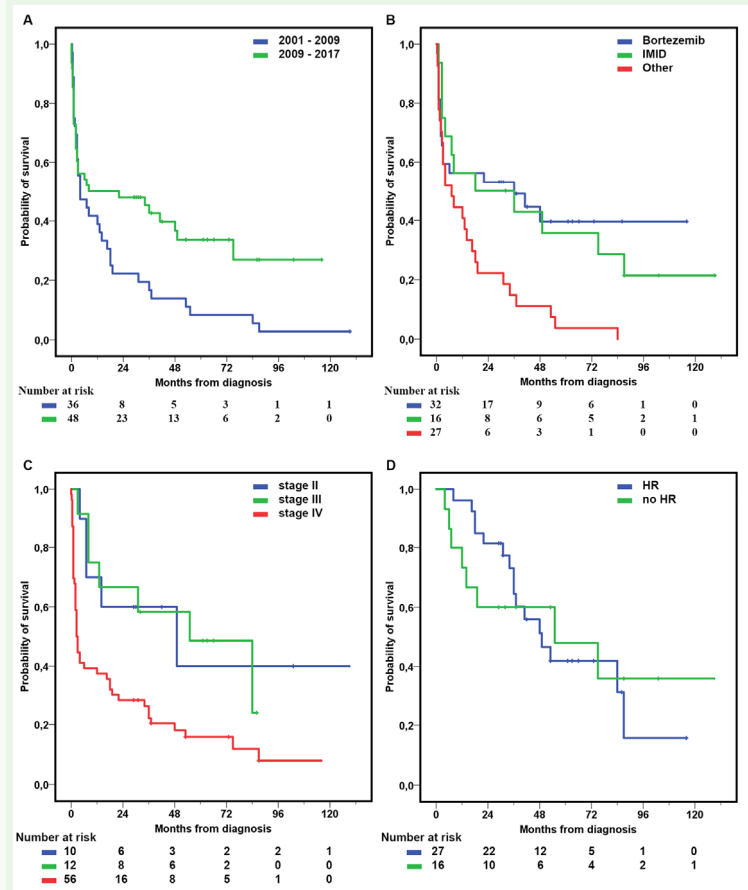


Figure 1. Kaplan-Meier curves of overall survival.

- Two treatment periods: inclusion from 2001-2009 (blue, n=36) and inclusion from 2009-2017 (green, n=48).
- Three treatment regimens: bortezomid-based (blue, n=32), IMiD-based (green, n=16), and other treatment (red, n=17).
- MAYO clinic stage: stage II (blue, n=10), stage III (green, n=12), and stage IV (red, n=56).
- Landmark analysis after three months. Quality of haematologic responses: haematologic response (blue, n=27) and no-haematologic response (green, n=16).

CONCLUSIONS

Overall Survival improved in this high-risk group over the years, especially after introduction of new treatment modalities.

However, early death rate remains high, illustrating the need for early identification and treatment of patients, and more effective treatment.

<https://www.amyloid.nl>

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