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# AUTOLOGOUS STEM CELL TRANSPLANTATION (ASCT) FOR LIGHT CHAIN (AL) AMYLOIDOSIS: A SINGLE-CENTER REPORT

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Educação e Pesquisa

## INTRODUCTION

Since the 1990s, high-dose intravenous melphalan followed by ASCT has been a cornerstone in treating AL amyloidosis. Patients who achieve a complete hematologic response after ASCT tend to have better overall survival (OS).

## AIM

Our analysis focused on patient baseline characteristics, progression-free survival (PFS), intensive care unit (ICU) admission rates, and overall survival (OS).

## METHOD

This is an observation retrospective case-series study encompasses a consecutive cohort of patients submitted to autologous hematopoietic stem cell transplant (aHSCT) to treat systemic light chain amyloidosis.

We reviewed patients with AL amyloidosis who underwent ASCT between 2016 and 2024 at Beneficência Portuguesa de São Paulo to assess the procedure's safety. Twenty-seven patients met the criteria for this retrospective study.

## RESULTS

The median age was 60 years (95% CI, 38-70). 17 patients (63%) had an ECOG score of 0, and 11 (40%) had a Mayo Cardiac score of 1. Cardiac involvement was present in 11 patients and renal involvement in 23. Among the cohort, 81% (95% CI, 61-92) received ASCT as part of first-line therapy, while 5 patients (18%) received no therapy prior to ASCT. 12 patients (44%) received a CyBorDex regimen, and 9 (33%) received a Dara-based quadruplet regimen. The most used conditioning regimen was melphalan 200 mg/m² (55.6%), with the remaining patients receiving 140 mg/m². During hospitalization, 11 patients experienced congestive heart failure decompensation (4 profile 'B' and 7 profile 'C'), with a higher risk observed in patients with pre-existing cardiac dysfunction (OR=5.2; 95% CI, 0.92-47; *P*=0.06). None of the patients were on renal replacement therapy at baseline; however, 4 required hemodialysis during hospital follow-up. There were no in-hospital deaths in this cohort, although 33% of patients were admitted to the ICU within 30 days of follow-up (95% CI, 16-51). The OS and PFS rates at 2 years, estimated by the Kaplan-Meier method, were 88% (95% CI, 73-100) and 89% (95% CI, 76-100), respectively, with no early deaths.

**Table 1. General Characteristics**

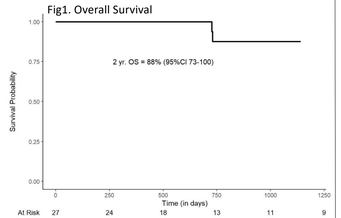
| Characteristic | N = 27[†] |
|---|---|
| Chains | |
| iga,lambda | 2 (7.4%) |
| igg,kappa | 1 (3.7%) |
| igg,lambda | 11 (40.7%) |
| NA,kappa | 2 (7.4%) |
| NA,lambda | 10 (37.0%) |
| NA,missing | 1 (3.7%) |
| CPH | |
| cryopreserved | 3 (11.1% |
| fresh | 24 (88.9%) |
| mayo | |
| 1 | 13 (48.1%) |
| 2 | 9 (33.3%) |
| 3 | 2 (7.4%) |
| 4 | 2 (7.4%) |
| NA | 1 (3.7%) |
| cardiac | 16 (59.3%) |
| renal | 23 (85.2%) |

[†] n (%); Median (IQR)

| Characteristic | N = 27[†] |
|---|---|
| ecog | |
| 0 | 17 (63.0%) |
| 1 | 7 (25.9%) |
| 2 | 3 (11.1%) |
| Conditioning | |
| 140 | 12 (44.4%) |
| 200 | 15 (55.6%) |
| MM_con | 3 (11.1%) |
| Scheme | |
| 0 | 5 (18.5%) |
| CyBorD | 12 (44.4%) |
| Dara-VCD | 8 (29.6%) |
| Dara-VTD | 1 (3.7%) |
| Mel-Dexa | 1 (3.7%) |
| Time until HSCT | 32 (170, 387) |

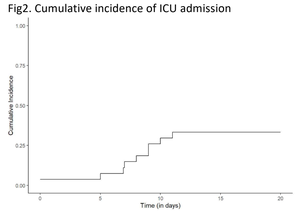
[†] n (%); Median (IQR)

Fig1. Overall Survival



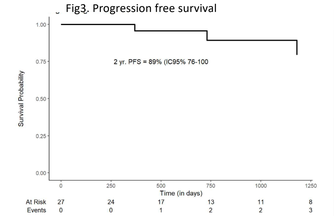

| Characteristic | Time 180 | Time 365 | Time 730 |
|---|---|---|---|
| Overall | 100% (100%, 100%) | 100% (100%, 100%) | 88% (73%, 100%) |

Fig2. Cumulative incidence of ICU admission



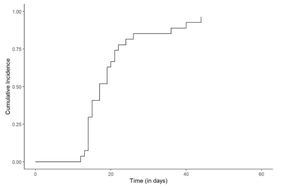

| Characteristic | Time 10 | Time 20 | Time 30 |
|---|---|---|---|
| Overall | 30% (14%, 47%) | 33% (16%, 51%) | 33% (16%, 51%) |

Fig3. Progression free survival




| Characteristic | Time 180 | Time 365 | Time 730 |
|---|---|---|---|
| Overall | 100% (100%, 100%) | 100% (100%, 100%) | 89% (76%, 100%) |

Fig4. Cumulative incidence of hospital discharge




| Characteristic | Time 10 | Time 20 | Time 30 |
|---|---|---|---|
| Overall | 30% (14%, 47%) | 33% (16%, 51%) | 33% (16%, 51%) |

## CONCLUSIONS

The present analysis reiterates the importance of careful patient selection for ASCT, as complications can occur and may be serious. Therefore, a center's experience is fundamental to guaranteeing the best outcomes. Most patients in our cohort remained alive, with no transplant-related deaths within the first 100 days

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## CONTACT INFORMATION

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