Autologous stem cell transplantation in Waldenstrom's macroglobulinemia

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PURPOSE:
The role of autologous stem-cell transplantation (auto-HCT) in Waldenström macroglobulinemia (WM) is not clearly defined. The aim of this study was to analyze the results of auto--HCT in patients with WM and to determine the prognostic factors that have a significant impact on outcome.

PATIENTS AND METHODS:
We analyzed 16 adult patients (10 males and 6 females) with WM who underwent high-dose chemotherapy and auto--HCT at MDACC between 1/89 and 2/11. Median age at diagnosis was 55 years (range 43-74) and median age at auto-HCT was 55.5 years (range 43-75). Concurrent AL amyloidosis was seen in 6 patients (37%). Median interval from diagnosis to time of progression was 3.1 years (range 0.4- 9.5) and patients had received a median of 2 lines of therapy (range: 1-6) prior to auto-HCT. Seven patients (44%) had either primary refractory disease or were in first remission, while 9 patients (56%) had relapsed disease. Median follow-up in the surviving patients was 3.5 years (range, 1.1- 12.2). Preparative regimens were as follows: 9 patients received Melphalan alone; 2 received Melphalan + Rituximab; 1 underwent Melphalan + total body irradiation (TBI); 2 received Thiotepa + Busulfan + Cyclophosphamide; and 2 received BCNU + Etoposide + Cytarabine + Melphalan + Rituximab (BEAM-R).

RESULTS:
Non-relapse mortality was 6.2% at 1 year. All 15 evaluable patients achieved engraftment with a median time to neutrophil engraftment of 11 days (10-46). Fourteen patients were eligible for response evaluation. One patient died within 30 days and one was lost to follow up. Three (21%) patients achieved a CR, while 9 (64%) achieved a PR. The overall response rate was 85%. Progression-free survival (PFS) and overall survival (OS) at 5 years were 36.7% and 56.4%, respectively. Median PFS and OS from auto-HCT were 2.5 and 8.3 years, respectively. The median OS from diagnosis was 12.3 years. On univariate analyses, disease status at auto-HCT (first remission or primary refractory disease) was the strongest predictor of progression ($p=0.05$; HR 0.1, 95% CI 0.01-1.04), PFS ($p=0.01$, HR 0.1, CI: 0.01-0.6) and OS ($p=0.01$). Similarly, the melphalan-based regimens were associated with a longer OS in patients with relapsed disease at auto-HCT ($p=0.002$). On univariate analyses, LDH level at auto-HCT, number of prior chemotherapy regimens, use of prior cladribine, concurrent AL amyloidosis or International Staging System score (ISSWM) did not have a significant impact on the outcome.

CONCLUSION:
Auto-HCT is a feasible procedure in patients with advanced WM, even when performed later in the course of disease, after a median of 2 lines of therapy. Patients with relapsed disease at auto-HCT have a significantly worse outcome and may require posttransplant therapy.