PB2007 FACTORS ASSOCIATED WITH EARLY RELAPSE IN MYELOMA PATIENTS AFTER AUTOLOGOUS HEMATOPOIETIC STEM CELL TRANSPLANTATION

**Topic:** 14. Myeloma and other monoclonal gammopathies - Clinical

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**Background:** Multiple myeloma (MM) is a clonal disease characterized by a neoplastic proliferation of plasma cells that make up approximately 10% of hematologic malignancies. Autologous hematopoietic stem cell transplantation (ASCT) after an induction regimen using combination of immunomodulatory drugs, proteasome inhibitors and dexamethasone is considered the standard treatment of newly diagnosed multiple myeloma in eligible patients.

**Aims:** To demonstrate the pre-transplant factors associated with early relapse in MM patients undergoing ASCT.

**Methods:** 27 adult MM patients who underwent ASCT at The Stem Cell Transplant Center of Dokuz Eylul University Hospital between October 2011 and August 2021 and who relapsed within 18 months of transplantation were included in this study. The data were compiled from the Dokuz Eylul Hematology archive and the Hospital Information Management System at Dokuz Eylul University Hospital and analyzed with SPSS v.24 (Statistical Package for Social Sciences). Mann-Whitney U test is used to compare kappa/lambda ratios, Kaplan Meier test is used to analyze survival and log-rank test is used to test significant difference between survival of two groups.

**Results:**

The median age at diagnosis is 57 (42-68) and 52% of patients were male (n=14). Patients received a median one line of treatment before ASCT (1-3). According to the ISS staging system, 9 patients were stage I, 9 patients were stage II and 9 patients were stage III. In 43% of patients (n=12), extramedullary (EM) disease involvement was present at the diagnosis. 33% had hypercalcemia (n=9), 19% had kidney involvement (n=5), 57% had anemia (n=16), and 75% had bone (n=21) at the time of diagnosis.

Two patients achieved complete remission (CR) after 2 courses of induction therapy. But they lost this response pre-ASCT and they relapsed in 5th and 6th month after ASCT respectively. The median time to relapse post-ASCT was 6 (2-17) months. In 63% of these patients, clinical relapse was observed, treatment was started due to aggressive biochemical relapse in the rest. 25% (n=7) had EM disease involvement in relapse. In this patient group, the median survival after ASCT is 32 months (5-120). In 3 out of 10 patients with biochemical relapse, EM disease was not observed despite being present at the time of diagnosis. In 9 of the 17 patients with clinical relapse and EM disease at diagnosis, 7 patients relapsed with EM disease. Median Kappa/Lambda ratios at the time of diagnosis were 13.84 and 13.1 at the time of relapse. There was no statistically significant difference in kappa/lambda rates at the time of diagnosis and relapse of patients with biochemical and clinical relapse. Median progression-free survival (PFS) was 5 months in those with clinical relapse and 8 months in patients with biochemical relapse. Median overall survival (OS) was 19.2 months in those with clinical relapse and it was not reached in those with biochemical relapse (p=0.001) (Fig. 1).

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Summary/Conclusion: It is known that in multiple myeloma, ASCT prolongs PFS. Early loss of response in patients who achieved CR after 2 courses of treatment may be a prognostic clue. OS and PFS are shorter in those with clinical relapses while biochemical relapses are more indolent. The fact that 43% of our patients have EM disease involvement in diagnosis indicates that this feature may be associated with early relapse. Outcomes of single and tandem ASCT in these patients should be examined in further studies.