

Age as a Prognostic Factor Following Stem Cell Transplantation in Acute Leukemia

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Aim. To determine the impact of age on the outcome of bone marrow transplantation in patients with acute leukemia.

Patients and Methods. 241 patients with acute leukemia who underwent transplantation of allogeneic (152 patients) or autologous (89 patients) bone marrow were included in the study. Allogeneic transplant was from an HLA-identical sibling. Cyclophosphamide followed by the total body irradiation or cyclophosphamide and busulfan were used in the conditioning regimen.

Results. Leukemia-free survival (LFS) was significantly better in younger patients compared to the older ones for all patients (LFS for younger patients was between 40-43% and for patients >45 years 27%; $p < 0.02$), autografted patients (LFS for patients <15 years, 15-29 years, and 30-45 years was 48%, 42%, and 45%, respectively, and 25% for patients >45 years; $p < 0.07$) and for allografted patients (LFS for patients <15 years, and 15-29 years was 46% and 42%, respectively, and for patients 30-45 years and >45 years 34% and 29%, respectively; $p < 0.05$). Patients' age did not influence the relapse rate. Transplant-related mortality (TRM) was significantly higher in older than in young patients (31% for patients >45 years and 13-19% for younger age groups; $p < 0.04$). For autografted younger patients TRM was between 8-15%, and for patients >45 years 31% ($p < 0.04$). In allografted patients <15 years and between 15-29 years, TRM was 15% and 20%, respectively, which is significantly better than in older patients (in patients between 30-44 and older than 45 years, TRM was 30% and 38%, respectively; $p < 0.05$). Together with the stage of the disease, white blood cells, and GvHD, the age proved to be a significant risk factor for the treatment outcome.

Conclusion. Age is an important prognostic factor for patients treated with transplantation of autologous or allogeneic marrow transplantation. Younger patients had a better treatment outcome because the transplant-related toxicity and mortality were lower compared to older patients.

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