

Quantity and Origin of Transplanted Autologous Blood Cells Are Independent Factors Associated with Speed of Postransplant Hematological Reconstitution

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Aim. Multivariate analysis of the prognostic significance of clinical and laboratory parameters on hematological recovery after autologous hematopoietic stem cell transplantation.

Methods. Sixty-two patients suffering from hematological and non-hematological malignancies entered the study. After conditioning therapy, 28 patients received bone marrow stem cells, 21 received peripheral blood stem cells, and 13 received both. The dynamic of hematological engraftment was calculated as recovery probability of leukocytes and neutrophils. Statistics was done using Kaplan-Meier method and multivariate Cox's proportional regression.

Results. Numerous clinical and laboratory parameters correlated with hematological recovery, but only two variables were found to be independently associated. Faster reconstitution correlated with greater number of progenitors and patients who received bone marrow cells recovered significantly later than others. Faster recovery could be expected in patients receiving $>13 \times 10^4$ CFU-GM/kg body weight, and significantly slower in those receiving $<8.5 \times 10^4$ CFU-GM/kg.

Conclusion. The quantity of progenitor cells and transplant type are variables significantly associated with the speed of postransplant engraftment, but these two parameters are mutually independent. The number of stem cells estimated by CFU-GM assay is a good and reliable routine test for predicting hematopoietic recovery.

Key words: bone marrow transplantation; colony-forming units, hematopoietic; hematopoietic stem cell transplantation; hematopoietic neoplasms; stem cells, hematopoietic; transplantation, bone marrow; transplantation, conditioning