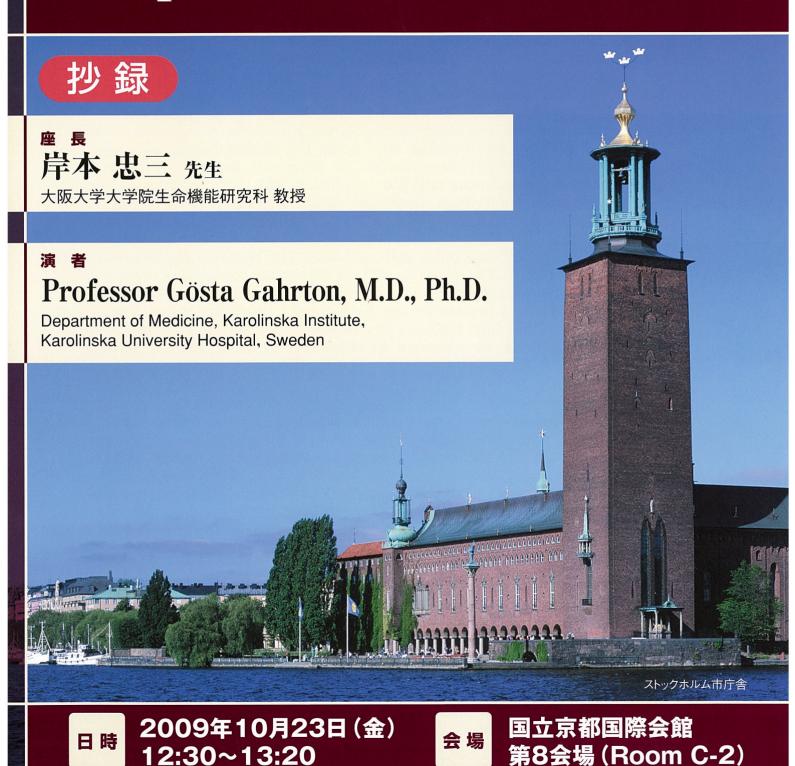
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Stem cell transplantation in multiple myeloma and the place of thalidomide



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Autologous hematopoietic stem cell transplantation after induction treatment is the most common initial treatment of multiple myeloma in patients under 60 - 70 years of age. Early long term retrospective registry studies of more than 8,362 patients performed by the European Group for Blood and Marrow Transplantation (EBMT) showed that the median overall survival from transplantation was about 50 months using a variety of induction treatment regimens - not including new drugs like thalidomide, lenalidomide and bortezomib. Multivariate analysis of prognostic factors in 3,354 patients showed that excluding total body irradiation (TBI) in the conditioning regimen and adding interferon treatment post-transplant may favorably affect outcome. A randomized study by the Intergroup Francaise de Myelom (IFM) including 399 patients comparing melphalan 200 mg/m² to melphalan 140 mg/m² + TBI supported that excluding TBI is favorable. Melphalan 200 mg/m² without TBI is now considered the optimal conditioning regimen. With improving supportive care, transplant-related mortality has decreased and is now only 2 - 4 percent despite the increased conditioning dose. Prospective studies by the IFM and other groups have confirmed the value of autologous transplantation as compared to chemotherapy alone for the outcome of patients with multiple myeloma.

Although autologous transplantation improves outcome, no cures are obtained. Therefore, attempts have been made to intensify the treatment by using tandem autologous transplantation, intensified induction treatment including new drugs like thalidomide, lenalidomide or bortezomib and/or maintenance therapy using these drugs. Recent studies indicate that including thalidomide in the induction regimen as well as in the maintenance regimen may improve results. Protocols including various combinations with thalidomide and new drugs in this setting are in progress. Thalidomide combinations may also be used to treat relapse following transplantation. One prospective study comparing thalidomide + dexamethasone versus thalidomide + dexamethasone + bortezomib is in progress within EBMT.

Other alternatives to improve results and perhaps to obtain cure in a fraction of patients have been allogeneic transplantation with myeloablative or — non myeloablative reduced intensity conditioning (RIC). Early attempts using myeloablative conditioning were associated with high transplant related mortality. Recent prospective studies by EBMT and others, using RIC allotransplantation after a previous autologous transplantation, have shown encouraging results. Studies are in planning using new drugs like thalidomide, lenalidomide and bortezomib in combination with allotransplantation in attempts to further improve results.

M E M O

Professor Gösta Gahrton, M.D., Ph.D.

Professor Gösta Gahrton received his M.D. degree at the University of Lund in 1959, and his Ph.D. at the Karolinska Institute, Stockholm Sweden in 1966.

He was appointed Professor of Medicine at the Karolinska Institute and Head of the Department of Medicine, Karolinska University Hospital, Huddinge in 1985.

He has been the chairman of the Nobel Committee at the Karolinska Institute in Stockholm, and President of the European Group of Blood and Marrow Transplantation (EBMT) and the World Marrow Donor Association (WMDA).

He is the honorary member of the Austrian Society for Transplantation, Transfusion and Genetics, the Swedish Society for Hematology, the Austrian Society for Hematology, the Finnish Society of Hematology, and the EBMT.

He is the editor of the books of "Myeloma and Related Disorders" (Arnold, London, 2004) and "Blood Disorders" (Natur och Kultur, Stockholm, 1997).

His research area is hematological malignancies with focus on translational research and clinical application of stem cell transplantation, particularly in multiple myeloma. He has published more than 400 scientific articles.