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The 10th Congress of the European Hematology Association

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At almost the same time as the Los Angeles Cord Blood Transplantation Meeting, the European Congress of Hematology was held with an attendance of almost 5000 scientists from all over the world, making it the largest such conference in Europe, and cord blood transplantation was among its topics.

Dr. V. Rocha from the St. Louis Hospital (Paris, France) reviewed results reported to Eurocord of single cord blood unit transplantation after myeloablative conditioning. These results were much better for children (between 40 and 70% survival, depending on underlying disease) than for adults, and much better for adults transplanted after 1998 (34% survival) than before (19% survival). These results are inferior to HLA-identical unrelated bone marrow transplantation in adults, but it must be explained that they involved an adult subpopulation that lacked such a marrow donor. Moreover, most transplants were performed using partially mismatched units, and patients had more advanced disease. Therefore, these studies confirmed that even single cord blood unit transplantation offers an advantage to adult patients who lack a marrow donor.

Dr. C. Brunstein reviewed University of Minnesota (Minneapolis, USA) results (26 adults, 10 adolescents) concerning double cord blood transplantation, the same results that Dr. J. Wagner presented in Los Angeles. While these results were single-center data, they have demonstrated that the engraftment is better with double unit transplantation and that disease-free survival appears to be longer. Dr. Brunstein also mentioned some new approaches in double cord blood transplantation. One of these involved intra-bone marrow injection of cord blood cells and the other co-infusion with two cord blood units of CD4⁺CD25⁺ T regulatory cells derived from a third unit. No data are yet available.

We have shown that practically for every patient lacking an unrelated marrow donor it is already possible

to find at least 2 cord blood units in the BMDW database matching in at least 4 out of 6 antigens. This threshold was previously found to give the same results as 6/6 and 5/6 matches and is therefore considered sufficient for cord blood transplantation. Furthermore, we reported 4 cases of advanced leukemia transplanted with either 2 or 3 cord blood units after myeloablative conditioning. This seemed to be the first confirmation by another center of the results of the Minnesota group and, moreover, these were the first reported attempts to transplant 3 cord blood units simultaneously. Three out of 4 patients were hematologically reconstituted and 2 are alive, 1 transplanted with 3 and 1 with 2 units. All patients were finally reconstituted by cells derived from only 1 of those units. The transplant strategy used in our study was slightly different than the Minnesota one. While the Minnesota group transplanted each patient with one large and small unit, we transplanted as many units as necessary to reach 3×10^7 cells/kg of body weight of the recipients, which is threshold earlier established by Gluckman and collaborators.

Dr. X. D. Wei from Zhengzhou University in China reported results of 23 sibling cord blood transplantations with 12 patients surviving 7–72 months after the procedure.

Dr. L. Capelli and colleagues from the University Hospital La Fe (Valencia, Espania) analyzed the influence of killer cell Ig-like receptor (KIR) incompatibility on the graft-versus-host disease in adults receiving unrelated cord blood transplants. They found that, unlike the haplo-identical hematopoietic stem cell transplantation setting, KIR incompatibility is not associated with better outcome and does not prevent the occurrence of clinically significant acute graft-versus-host disease.

Dr. T. Burjanikova from Charles University (Prague, Czech Republic) evaluated children with

acute leukemia for the possible presence of leukemic cells in their cord blood samples collected at the time of birth. They found such cells in 15% of acute lymphoblastic leukemia patients, which suggests that leukemia began to develop *in utero*.

Dr. A. G. de Nooij-VanDalen and collaborators from Leiden University (Leiden, the Netherlands) reported on the differences in gene expression in hematopoietic stem cells obtained from cord blood, bone marrow, and peripheral blood and, using

microarray techniques, identified unique genes expressed only in cord blood stem cells.

Furthermore, there were several reports on the growth of endothelial and mesenchymal stem cells from cord blood.

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