HEMATOPOIETIC STEM CELL TRANSPLANTATION IN ACUTE LEUKEMIA: 19 YEARS EXPERIENCE IN IRAN

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Background: Hematopoietic stem cell transplantation (HSCT) has remained the best therapy for the control of acute leukemia in adult patients in recent years. After the first HSCT had been done in Iran in 1991, acute leukemia encompassed the greatest proportion of HSCT at this center. This study concerns the results of HSCT in acute leukemia patients in Shariati Hospital, the first center for HSCT in Iran.

Patients and methods: From 1991 until August, 2009, 1.058 patients with acute leukemia have been referred for HSCT to Shariati Hospital and their outcomes evaluate. 609 patients (58%) were male, and 449 patients (42%) were female. The median age at the time of transplantation was 27 years (range: 2-68 years) and 19 years (range: 2-54 years) for Acute Myelogenous Leukemia (AML) and Acute Lymphoblastic Leukemia (ALL), respectively.

Results: Of the 1.058 patients evaluated 65.5% suffered from Acute Myelogenous Leukemia (AML) and 34.5% from Acute Lymphoblastic Leukemia (ALL). In AML group, allogeneic HSCT was performed in 68.1% of the patients, autologous HSCT in 31% and syngeneic HSCT in 0.9% of patients. In the ALL group, allogeneic HSCT was performed in 91%, autologous HSCT in 6.8% and syngeneic HSCT in 2.2% of the patients. With the allogeneic patients, the most common type of donor was Human Leukocyte Antigen matched sibling in 96.6% and 94.9% of AML and ALL groups, respectively. A common source of stem cells was peripheral stem cells in 90.5% and 89.9% in AML and ALL patients, respectively. In the AML group, 77% of the HSCTs were performed in the first complete remission (CR1) and 23% in the non-CR1. In the ALL group, 65% of the HSCTs were performed in CR1 and 35% in non-CR1. Acute and chronic graft versus host disease (GVHD) occurred in 41% and 15% of the patients in the AML group, respectively. Acute and chronic GVHD occurred in 57% and 12% of the patients in the ALL group, respectively. The median follow up time was 14 months in the AML group and 10 months in the ALL. Relapse and GVHD were common causes of death in 50% and 19% of the AML group and in 58% and 12% of the ALL group, respectively. In the AML group, a 3-year disease free survival (DFS) and overall survival (OS) was 50% and 59% in autologous; 69% and 77% in allogeneic subgroups, respectively (P value <0.001). In the ALL group, 3-year DFS and OS were 27% and 33% in autologous; 54% and 63% in the allogeneic subgroups, respectively. (P value 0.03 and 0.016)

Conclusion:We conclude that HSCT is a major treatment form for acute leukemia patients in Iran with a comparable efficacy with other parts of the world.