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# RIC hematopoietic stem cells transplantation in patients with acute leukemia

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## Abstract

In patients with high-risk acute leukemia (AL) hematopoietic stem cell transplantation (HSCT) is an essential part of the treatment strategy. Current trends in HSCT suggest the use of myeloablative conditioning in leukemia patients. However, myeloablative preparative regimens are associated with a risk of treatment-related mortality. Given that the use of reduced intensity conditioning regimens (RIC) decreases TRM rates but appear to be associated with a higher incidence of relapse than observed with more intensive regimens. Data of 109 HSCT performed in patients with acute leukemia were analyzed with purpose to compare outcomes of RIC HSCTs (55 pts) and meyloablative preparative regimens (54 pts). Disease status at the time of transplantation was 1 or 2 CR.

There was no statistically significant difference in OS between RIC HSCT and standard preparative regimen (OS after RIC was 45% versus 46% after myeloablative conditioning). Moreover, statistically significant improvement of OS was noted in patients with ALL. Seven years OS after RIC HSCT was 58% (n=22) versus 32 % (n=34) after myeloablative conditioning. In pediatric ALL 7 years OS after RIC HSCT was 64% (n=14) versus 43% (n=23) after myeloablative conditioning. However, there was no difference in EFS after HSCT performed in pediatric ALL (37% (n=14) after RIC versus 39% (n=23) after myeloablative conditioning).

Patients after RIC HSCT showed faster engraftment, therefore had lower rate of bacterial complications and received fewer haemotransfusions.

According to our data RIC HSCT is better tolerated by patients, has more favorable short term outcomes than more intensive regimens. Analyzes of HSCT outcomes in pediatric ALL revealed significant improvement in OS after RIC, nevertheless there was no difference in term of EFS. These results encourage us to continue investigations on RIC use. Our researches focus on post HSCT relapse prophylaxis by means of immunadoptive and targeted therapy.

**Keywords:** acute leukemia, reduced-intensity conditioning, immunoadoptive therapy