Cellular Therapy and Transplantation (CTT), Vol. 2, No. 5, 2009
doi: 10.3205/ctt-2009-No5-abstract14

© The Authors. This abstract is provided under the following license:
Creative Commons Attribution 3.0 Unported, http://creativecommons.org/licenses/by/3.0/

Abstract accepted for "Joint EBMT Pediatric Working Party – 3rd Raisa Gorbacheva Memorial Meeting on Hematopoietic Stem Cell Transplantation", Saint Petersburg, Russia, September 17–20, 2009

Results of treatment of relapsed promyelocytic leukemia in children using chemotherapy and arsenic trioxide (ATO) followed by autologous SCT (ASCT)

Dina D. Baidildina, Elena V. Samochatova, Michail A. Maschan, Alexey A. Maschan

On behalf of the Russian-Byelorussian Pediatric APL study group

Correspondence: Elena V. Samochatova, Research Institute for Pediatric Hematology, 117, Leninsky prosp, Moscow, 105062, Russia, E-mail: samochatova@niidg.ru

Abstract

The Russian multicenter APL-2003 protocol for pediatric APL demonstrated a non–inferior outcome compared with the APL-93/98 studies despite a reduction of ATRA to 25 mg/m^2 and cumulative anthracycline dose to 405 mg/m^2: at a median follow up of 35 mo the EFS and OS were 0.79±0.6 and 0.93±0.3. Seven relapses (11.9%) occurred out of 61 patients (pts) at a median of 21 (4–35) mo. Second remission was induced with diverse therapy (Table 1) and consolidated with 14 ATO at 0.15 mg/kg per day; in 1 pt gemtuzumab ozogamicin (GO) at 6 mg/m^2 was added to ATO. All pts achieved 2nd hematological remission and PML/RARα negativity in bone marrow either after induction (3 pts) or after consolidation (4 pts). HDAraC + G–CSF were used for additional "in-vivo purging" and PBSC mobilization. Harvesting was successful in all pts: a median of CD34+ dose 17 (8–40) x 10^6/kg was achieved after single apheresis. In all cases, apheresis product proved to be PML/RARα negative. AHSCT was performed in 6 pts after conditioning with HDAraC + Mel180 mg/m^2 in 4 pts, Bu12mg/kg + Mel 140 mg/m^2 in 1 pt and Treosulfan 42 mg/m^2 + Mel140 mg/m^2 in 1 pt. All pts engrafted at a median of 16 (12–25) d with minimal transplant-related toxicity. Three pts received GO on day +100 after ASCT with minimal toxicity. Two pts with skin involvement received complementary electron beam skin irradiation. At a median of 26 mo 6 pts continued in molecular remission and 1 pt experienced 2nd relapse. We conclude that children with relapsed APL can be treated effectively with chemotherapy, ATO, and ASCT.

Table 1

Case №	1	2	3	4	5	6	7
Age in years	14	13	1	14	7	12	13
WBC at Dx mm^3	1.400	3.900	57.000	15.700	2.600	40.000	0.900
Rx start – relapse, mo	21	29	9	35	23	4	12
PML/RARα before maintenance	+	+	-	+	-	+	-
Relapse site	bone marrow	bone marrow	bone marrow	bone marrow skin	bone marrow	bone marrow skin	bone marrow
2nd remission induction	ATRA ATO	ATRA 7+3	ATRA HDAraC Mitox	ATRA AraC, Ida	ATRA ATO Mitox	ATO	ATO
Post 2nd remission therapy	ATO 2 courses	ATO 3 courses	ATO 3 courses	ATO 3 courses	ATO 3 courses	ATO GO	ATO 1 course
Auto-HSCT	+	+	+	+	+	+	
Duration of 2nd mol remission mo	+ 35	+ 27	+ 26	+ 26	+ 18	+ 18	+ 1

Keywords: promylocytic leukemia, arsenic trioxide, autologous hematopoietic stem cell transplantation