

Extract from Patient Medical Record No. 3071

Child: Kateryna Omelchenko of 14 years old has been receiving inpatient treatment at Hematological Department since July 24, 2008 till the present day for the following diagnosis: pro-B acute leukemia of lymphoblastic type with co-expression of CD33 myeloid antigen, FAB-type: D1, late marrow recurrence, therapeutic group: S2. 2nd grade reflux-esophagitis. Erythematous gastroduodenopathy. Gastroduodenogastric reflux. HbsAg carrier.

The child was admitted to Hematological Department repeatedly on July 24, 2008 with complaints on back pain and weakness.

It is apparent from the anamnesis that the girl has been ill since April 2004, when catarrhal manifestation, fever up to 38°C. From April 17 through 21, she received inpatient treatment at Surgical Department of Regional Children's Clinical Hospital No. 1, where she was diagnosed with a right-sided femoral myositis. Upon a physiotherapy course, her condition got better. June 2004: pain in the left knee joint, administration of anaesthetics. From June 3 through 10, 2004, received inpatient treatment at Diagnostic Department of Regional Children's Clinical Hospital No. 1 for the following diagnosis: reactive arthritis, dyspancreatizm, dysplastic cardiopathy, mitral valve prolapse and tricuspid valve prolapse. After that: left-sided focal pneumonia. Underwent several antibacterial therapy courses. At the end of August 2004, pain in knee and hip joints recommenced. Received treatment from extrasensory individuals. September 2004: repeated complaints on joint pain. From September 10, 2004 to October 9, 2004, received inpatient treatment at UZDP Research Institute for the following diagnosis: reactive arthritis, dysplastic cardiopathy (mitral valve prolapse and tricuspid valve prolapse). Gall-bladder dyskinesia of hypotonic type. Bacterial vulvovaginitis. Therapy administered: Diclofenac, Rovamycin, Nimesid, Roxithromycin. On November 17, 2004, repeatedly admitted to UZDP Research Institute with complaints on joint pain and received treatment until November 25, 2004 for the following diagnosis: reactive arthritis of chlamydial etiology. Clinical blood analysis dd. November 25, 2004: blast cells 2%; myelocytes, immature 1%, ESR 66mm/h. According to these results, the patient was diagnosed with acute leukemia and transferred to Hematological Department of City Children's Clinical Hospital No. 16.

Patient's life history: previous diseases: scarlatina. Adenoidectomy performed in 2000.

Based on the clinical blood analysis, it was revealed: mild anemia; Hb 116g/l; thrombocytes $180 \cdot 10^9/l$; leukocytes $6.0 \cdot 10^9/l$; blast cells 7%; lymphocytes 71%; ESR 38mm/h.

Liver function tests, proteinogram: within normal limits.

Acute-phase characteristics are moderately increased. Glycoproteids 0,488; seromuroid 0.233.

Based on findings obtained from myelogram dd. November 26, 2004 demonstrating the prevalence of blast cells and positive reaction to glycogen and negative reaction to myeloperoxidase, acute lymphoblastic leukemia (L1/L2) was diagnosed. According to immune marker analysis data provided by Kiev City Reference Laboratory, there is a pre-B acute lymphoblastic leukemia. Liquor: within normal limits; cytotosis $3 \cdot 10^6/l$.

On November 30, 2004, a polychemotherapy course was commenced according to Protocol 1 of ALLIC BFM 2002. On the 8th day of the polychemotherapy course, there were no blast cells revealed by clinical blood analysis.

On the 15th day of the polychemotherapy course, based on findings obtained from myelogram dd. December 14, 2004 demonstrating a small quantity of cellular elements (blast cells 1.0%, lymphocytes 51%), marrow remission was observed.

On the 22nd day of the polychemotherapy course, some complications were revealed such as aphthous stomatitis with necrotic elements on the oral mucosa. In this connection, administration of cytostatics was suspended for 6 days. The patient underwent antibacterial therapy by Amikinum, Medacef, Maxipim and Edicin, antifungal therapy by Nizoral, Diflucan p.o. then intravenously by drop infusion, 100mg/day. In view of hypoproteinemia, 10% albumin solution, 100ml, No. 2; one-time packed red blood cells transfusion (A(II)Rh+).

As a result of therapy, the condition got better. On January 9, 2005, completion of the polychemotherapy course under Protocol I - Phase 1 scheme. On the 33rd day of the polychemotherapy course, marrow remission was confirmed (blast cells 1.5%). From January 13, 2005 to February 26, 2005, underwent a polychemotherapy course under Protocol I - Phase 2 scheme, no complications were observed.

From March 15, 2005 to May 10, 2005, underwent a polychemotherapy course under Protocol mM. No complications were observed during the course administration.

On May 27, 2005, Protocol II was launched. On July 1, 2005, Phase 1 was completed.

From July 8, 2005 to July 21, 2005, Phase 2 of Protocol II was administered. Liquor analysis dd. July 11, 2005 showed cytolysis of $13 \cdot 10^6/l$, in dynamics, cytolysis of $5 \cdot 10^6/l$ was observed on July 18, 2005.

During a therapy course (4th day of the 2nd Cytosar unit), neurological symptoms appeared (headache, vomiting, feeling of numbness in the left lower limb and left forearm, low-grade fever) that was a reason for performing a cerebral computerized tomography, rheoencephalography and electroencephalography. The child was examined by neuropathologist and was diagnosed with cerebral vascular inefficiency accompanied by impaired venous drainage. Mild, predominantly sensory polyneuropathy of the lower and upper limbs. A therapy course of Glycine, Neurobex and Cavinton was prescribed.

In June 2006, Hepatitis B markers were revealed. In this connection, on June 5, 2006 the patient was consulted by N. N. Zakrevskiy, Assistant Professor of the Department of Infantile Infections, and diagnosed with viral Hepatitis B of non-jaundice form, height of disease. Received antiviral therapy: Zeffix p.o., 100mg/day, Viferon per rectum, Bifiform p.o.

On August 11, 2005, a maintenance polychemotherapy course was launched consisting of Purinethol 63mg/day p.o., Methotrexatum 25mg/day p.o. On February 19, 2007, the maintenance polychemotherapy course was cancelled due to therapy completion.

The patient's condition upon admission was moderately severe and characterized by general weakness and moderately apparent intoxication signs. Periodic pains in the spinal column. One-time rise in temperature without catarrhal manifestations. Peripheral lymph nodes are small and well palpated in all groups. Sporadic ecchymomae on the lower limbs. In lungs, rough breathing without crepitation. Core tones are rhythmic. Liver: +3.5cm below the costal margin. Spleen: +3.5-4cm below the costal margin.

Clinical blood analysis dd. July 24, 2008: Hb 121g/l; thrombocytes $46 \cdot 10^9/l$; leukocytes $7.3 \cdot 10^9/l$; blast cells 7%; lymphocytes 53%; ESR 26mm/h.

Based on findings obtained from myelogram dd. July 24, 2008 demonstrating the prevalence of blast cells and positive reaction to glycogen and negative reaction to myeloperoxidase, the recurrence of acute lymphoblastic leukemia (L1/L2) was diagnosed. According to the report dd. July 24, 2008 provided by Kiev City Reference Laboratory, there is a marrow recurrence of pro-B-ALL acute lymphoblastic leukemia with co-expression of CD33 myeloid antigen.

Liquor: within normal limits; cytosin $4 \cdot 10^6/l$.

On July 28, 2008, a polychemotherapy course was commenced under ALL-REZ-BFM-95-Prophase program by Dexametason p.o. From August 3, 2008 to August 8, 2008, a polychemotherapy course under F1 unit scheme was administered. Aggravation of complications was observed in the form of acute gastritis and 2nd grade reflux-esophagitis. Erythematous gastroduodenopathy. Gastroduodenogastric reflux (according to Fibrogastroduodenoscopy data). Treatment received: Diet No. 1, Quamatel intravenously by drop infusion, Nexium p.o., Motilium, Sandostatin subcutaneously and antibacterial therapy by Fortum and Metrogl.

After completion of F1 Unit, marrow remission was achieved. It is planned to continue polychemotherapy under ALL-REZ-BFM-95 program.

Head of Hematological Department	Signature	L. S. Belousova
Attending Physician	Signature	L. P. Marenych

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UKRAINIAN CHILDREN'S SPECIALIZED HOSPITAL
OF MATERNAL AND CHILD HEALTH CARE

Children's Oncohematology and Bone-Marrow Transplantation Center
Laboratory of Specialized Hematological Disease Diagnostics

Surname	Omelchenko	Given Name	Kateryna	Date of birth	October 29, 1993
Clinical Diagnosis		Acute Leukemia, recurrence?	Reg. No.	2008-1202 (κ/М) 2008-1219 (π/κ)	
Hemogram dd. July 24, 2008 (according to data contained in the Referral Form)					
Hemoglobin	113g/l	Leucocytes	7.9x10 ⁹		
Erythrocytes	x10 ¹²	Thrombocytes	44x10 ⁹		
Leucogram dd. July 24, 2008					
	%		%		%
Blast cells	10.0	Stab neutrophils	6.0	Lymphocytes	39.9
Promyelocytes		Segmented neutrophils	36.0	Monocytes	9.0
Myelocytes		Eosinophiles		Normoblast	
Metamyelocytes		Basophiles		Mononuclear cells	
Myelogram dd. July 24, 2008					
<i>Erythropoiesis (EP)</i>	%		<i>Granulopoiesis</i>	%	
Erythroblast			Promyelocytes	0.2	
Normoblast: basophilic			Myelocytes	0.6	
polychromatophilic	0.2		Metamyelocytes	0.2	
oxyphilic	0.6		Stab neutrophils	3.0	
Total EP	0.8		Segmented neutrophils	7.0	
Monocytes	1.6		Eosinophilic granulocytes		
Lymphocytes	14.8		Basophilic granulocytes		
Plasma cells	0.4		Total GP	11.0	
			Blast cells	71.4	
Cytochemical Marrow Blast Cells Analysis					
Myeloperoxidase (POX)		Negative			
PAS Reaction to glycogen (PAS)		Negative			
Nonspecific Esterase (ANAE)		Negative			
Granulocytes (%)	Monocytic Component (%)	Erythron (%)	Myeloperoxidase (POX)	FAB Type	
3.6	-	0.4	Negative	L1	
Immunophenotype	CD45+(28%)	CD13-	CD2-	CD10-	
	CD34+(82%)	CD15-	CD3-	CD19+(94%)	
	HLA-Dr+(76%)	CD33+(70%)	CD4-	CD20-	
	Anti-TdT+(45%)	CD65-	CD5-	CD22+(88%)	
	Anti-MPO-	CD117-	CD7-	cCD79a+(82%)	
	CD38+(98%)		CD8-		
Conclusion: Marrow recurrence of acute lymphoblastic leukemia, pro-B-ALL-type, with co-expression of CD33 myeloid antigen.					

Laboratory Doctor
Laboratory Doctor
Head of the Laboratory
Head of the Center

Signature
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June 25, 2008