29

RABBIT ANTI-ALL SERUM: SPECIFITY AND CLINICAL SIGNIFICANCE

H. Kabisch, K. Winkler, H. Stühsk, G. Landbeck,
Abteilung für Blutgerinnungsforschung und Onkologie
Universitäts-Kinderklinik Hamburg.

The antiserum was produced according to a method published by GREAVES and coworkers. Cells reacting with the antiserum were labelled by indirect immunofluorescence. Blood, bone maarow and spinal fluid of different types of leukemia, other hematological disorders and infectious diseases were investigated. A significant positive reaction was observed only with ALL-cells of the PAS positive and the undifferentiated type. Leukemic cells of AML, AMML, AMOL, CLL, CML (adult and juvenile type), T-ALL as well as cells from Osteomyelofibrosis, Osteomyelosclerosis, idiopathic thrombocytopenic purpura, Panmyelopathy and from infectous diseases did not show any significant reaction with the antiserum. In some doubtful cases this highly specific serum was helpful in establishing the diagnosis of ALL as well as assuring central nervous system disease or early bone-marrow-relapse.

30

EFFECTS OF PHOSPHORUS ADMINISTRATION IN THALASSEMIA MAJOR

A. KARAKLIS, P. LAPATSANIS, S. STAMOULAKATOU, S. DOXIADIS
Institute of Child Health, Athens, Greece

Previous work has demostrated marked phospaturia in thallassemia major, resulting in a negative phosphorus balance (Lapatsanis et al.Ped. 58:885,76). Therefore it was decided to study the effects of oral phosphate administration on serum phosphorus (Pi),red cell adenosine triphosphate (ATP) and 2,3-diphosphoglycerate (2,3-DPG) in this desease. Group B of the table which was regularly transfused as was groupA(control) received 1,5-2.0g of Pi as phosphate salt daily. p.o.

Groups	Nr	Hb* g%	Hct* ml%	Serum* Pi	R.C.* ATP	R.C.* 2,3-DPG
A	52	8.056	25.356	4.443	0.295	6.540
control		1.227	4.128	0.721	0.212	1.040
B	13	7.582	24.423	5.080	1.408	6.380
oral Pi		0.581	2.130	0.610	0.383	0.770

*Mean +/- SD.

Hemoglobin and hematocrit were not significantly different in the two groups. Serum Pi was significantly higher in group B compared to that of group A ($p < 0.01$). Mean red cell ATP was higher in group B from that of group A by 41% . The difference was highly significant ($p < 0.001$). On the contrary there was no difference in the mean red cell 2,3-DPG between the two groups.

The elevation of ATP was an expected and possibly beneficial finding. There is no explanation for the lack or response of 2,3-DPG to the raised serum Pi in group B. Since most of the red cells in these children were donor cells it indicates possibly an abnormality of blood bank blood in 2,3-DPG metabolism.

31

LYMPHOCYTE SENSITIZATION IN CHILDREN WITH LYMPHOBLASTIC LEUKEMIA AND LYMPHOMA AS MEASURED BY THE ELECTROPHORETIC MOBILITY TEST.

F. Lampert+, U. Nitzschke, T. Zwergel
Universitäts-Kinderpoliklinik, Giessen, W.-Germany.

A modified electrophoretic mobility (EM) test was performed in 53 children with lymphoblastic leukemia (ALL) and lymphoma to examine their lymphocyte sensitization to myelin basic protein (encephalitogenic factor). Measurements in the cytopherometer were facilitated by using devitalized sheep erythrocytes as indicator particles instead of macrophages.

A significant decrease in electrophoretic mobility as compared to an O-standard was found in 36 of 41 patients with ALL and in 12 of 12 patients with lymphoma; thus giving a sensitivity rate of 88 to 100 %. Only 1 out of 10 healthy individuals and 34 of 38 children with non-malignant disorders (autoimmune diseases excluded) also had a positive EM-test. Almost all patients with ALL were in hematological remission either on or off therapy. 4 of the 5 non-reactive children with ALL were at diagnosis or in phase I of induction therapy. No striking change in lymphocyte reactivity was seen between lymphoblastic leukemia, Hodgkin's or Non-Hodgkin's lymphoma.

These results indicate that patients with lymphoid malignancies have remaining lymphocytes which had been sensitized by a common antigen of the malignant cell clone in the beginning of the disease.

+Supported by the Stiftung Volkswagenwerk

32

THE EFFECT OF HEMOLYZED RED BLOOD CELLS (RBC) ON NORMAL AND REGENERATING BONE MARROW.

Rolf Lindemann.
Department of Pediatrics, Rikshospitalet, Oslo 1, Norway.

Previous reports have demonstrated that RBC exert a negative feedback on erythropoiesis (chalone principle). A suppression of one cell line would initiate the proliferation of the other cell lines originating from the pluripotent stem cell, i.e. competitive inhibition.

Hemolyzed RBC were used for inhibition of erythropoiesis. The studies were performed on normal mice and on mice with a regenerating bone marrow. The regenerating bone marrow was obtained by exposing the mice to 850 Rad followed by an i.v. injection of normal bone marrow cells. The mice were injected with the hemolyzed RBC for 4 to 7 days. There was no change in the total number of bone marrow cells, while a significant increase of the myelopoietic cells was observed.

In vitro studies indicated that the hemolyzed RBC acted on the committed erythroid stem cell (CFU-E), by inhibiting the transformation of the CFU-E into proerythroblasts. The number of CFU-C (myelopoietic colony forming unit) was not affected by the hemolyzed RBC.

It is suggested that patients with aplastic anemias or malignant blood diseases should be transfused with RBC in order to keep their Hb above 10 g/dl. The suppression of the erythropoietic activity would by a competitive inhibition stimulate myelopoiesis and thrombopoiesis.

33

IMMUNOLOGICAL STUDY ON THE ACUTE LYMPHOBLASTIC LEUCEMIA OF CHILDREN (ALL)

K.Mantalenaki-Lambrou, E.Vrachnou, S.Haidas, L.Zannos-Mariolea and N.Matsaniotis

First Department of Pediatrics of Athens University

Trial for immunological classification of ALL of children as well as for evaluation of the immune status during and after the ALL treatment was done.

We studied sixteen children aged two to twelve years old. T and B lymphocytes were measured (per cent and absolute number) of the peripheral blood.

Before any treatment the per cent of both T and B lymphocytes was very low. Most of the children had less than 15% T and 5% B lymphocytes respectively.

At the beginning of the induction therapy T and B lymphocytes (per cent and absolute numbers) were very low,but progressively they show an intention to increase.

During the reinduction periods, that lasted two years, T and B lymphocytes increased. After the radiation of the skull all the children showed a decrease of T lymphocytes.

We followed up two children for about two years after they had finished ALL treatment. Six months later they still had low numbers of T lymphocytes. At the end of the year their per cent and absolute numbers of T lymphocytes had normal values that persisted for about 2 yrs.

34

LEUKAEMIC HYPOPION IN ACUTE LYMPHOBLASTIC LEUKAEMIA AFTER CESSATION OF THERAPY.

G. Masera, V. Carnelli, C. Uderzo, C. Toselli
Clinica Pediatrica, Università di Milano, Italy.

In acute lymphoblastic leukaemia antiblastic therapy is usually discontinued after 3-5 years of complete remission. It is, therefore, of particular interest to increase our knowledge of the subsequent course of events in these cases.
We present a girl of 7 years, affected with A.L.L. and treated with chemotherapy for 3 years. 4 months following the cessation of therapy she presented with photophobia, perikeratic injection of the left eye and copious exudate in the anterior chamber. Local therapy (cortisone - atropine) produced a brief remission. At the third recurrence of symptoms, cytological examination of the exudate revealed the presence of numerous lymphoblasts.
Radiotherapy produced a complete, lasting remission, still persisting after an interval of 5 months.
The eye can be considered a "Pharmacological Sanctuary", analogous with the C.N.S. and testis, and could be a possible site of localisation also in patients after completion of therapy.