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FUNCTIONAL DEVELOPMENT OF PHAGOCYTIC ACTIVITY OF THE SPLEEN
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The improvement of phagocytic activity of the spleen was studied in rats by using ^{99m}Tc sulfur colloid uptake. This function was measured in the newborn; 1,2,3,4, weeks old baby and adult rats. Organ distribution of the radionuclide showed very marked phagocytic activity of liver including the newborn period. But improvement of phagocytic activity by age expressed as "phagocytic index" was much more prominent in the spleen compared to lung kidney and liver.

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UNUSUAL COURSES OF ACUTE LYMPHOCYTIC LEUKEMIA (ALL).
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Under modern vigorous ALL-treatment, prolonged survival of over 10 years (y) despite relapse can be observed occasionally: R.E. (f): Diagnosis Sept. 62 (age 12 1/4 y), first relapse 1 y later, 8 successive relapses within the next 9 y. CNS-leukemia developed after 11 3/4 y. She could be maintained in satisfactory condition during the final relapse lasting 4 y (!), but finally died from leukemia after 14 y of disease. A.T.(m) had insufficient treatment for his ALL from diagnosis in June 64 (age 14) to Dec. 64, when he relapsed. Under better treatment he remained in complete remission (CR) for 10 1/2 y (off treatment for 5 1/2 y). Relapse July 75, morphology and cytochemistry suggestive for AML. He died within 2 1/2 months, 11 3/4 y after diagnosis. U.B. (m): Diagnosis in Feb. 67 (at 2 1/4 y). Bone marrow CR for 10 1/4 y until May 77 despite a first episode of CNS-leukemia in Aug. 69 already, and repeated CNS disease since 1971. At present (June 77) he is again in CR. K.M.(m): Diagnosis March 67 (age 2 1/4 y). After 1 year in CR seizures suggested CNS-leukemia, but CSF was normal. In March 69 (after 2 y) his bone marrow showed 17% blasts, but after an intensive DNM-course (with severe side effects) he remained in CR (8 1/4 + y, total disease duration 10 1/4 y). He is off treatment since 3 1/2 y. - These cases show that prolonged survival is rarely compatible with frequent relapses. However, the final outlook for these children with rare exceptions remains bad.

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DECREASED SERUM IgA LEVELS IN CHILDHOOD IDIOPATHIC THROMBOCYTOPENIC PURPURA (ITP)
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Quantitative serum immunoglobulins were determined in 19 children with ITP, 13 acute and 6 chronic by single radial immunodiffusion method. Although IgG and IgM values did not differ, IgA levels were found uniformly lower than the proper controls, which stayed lower in remission. Since autoimmune disorders occur more frequently in patients with IgA deficiency and low IgA levels were observed more frequently in those families, some relation between low serum IgA and ITP is suggested.

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MYELO- AND THROMBOPOIETIC STEM CELLS IN HUMAN CORD BLOOD.
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To prove the existence of hematopoietic stem cells in human cord blood, two techniques were employed: 1) colony formation in methylcellulose cultures; 2) the diffusion chamber technique, in which semipermeable chambers containing cell suspensions are implanted into the abdominal cavity of irradiated mice. Starting solutions were highly purified lymphoid cell suspensions.

In methylcellulose cultures from cord blood the mean number of colonies per plate is 60. In cultures from adult blood there are 0 to 8 colonies. Infants 8 to 10 days old have intermediate values. In diffusion chambers filled with cord blood, both, myelo- and thrombopoiesis is much more active than in chambers with adult blood. In cord blood, myelopoiesis is evident from the 6th day after implantation and megakaryocytes appear around the 10th day.

The results show that in human cord blood there are hematopoietic stem cells among the lymphoid cell population: 0.06 per cent myelopoietic stem cells and, in addition, thrombopoietic stem cells.

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QUANTITATIVE NITROBLUE TETRAZOLIUM (NBT) IN IDIOPATHIC THROMBOCYTOPENIC PURPURA (ITP)
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Antiplatelet antibodies acting as opsonins to promote phagocytosis of sensitized platelets by normal granulocytes in 5 acute and 4 chronic ITP cases in relapse, which did not change in remission, were shown. In spite of this finding, in vivo granulocyte stimulation was not shown in 14 cases of ITP by NBT reduction, by the method of Baehner and Nathan. These findings will be discussed.

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IMMUNOSUPPRESSION AND SERIOUS INFECTIONS DURING MAINTENANCE CHEMOTHERAPY OF ACUTE LYMPHOBLASTIC LEUKAEMIA IN CHILDHOOD.
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58 patients with ALL were studied at intervals during two years of maintenance chemotherapy. All patients received the same induction and cranial irradiation and were then randomized into two groups. Group C (Continuous) received daily drugs and Group I (Intermittent) were given drugs for five days followed by 16 days without drugs in successive cycles. Patients in both groups received the same total drug dose. Blood neutrophils counts were lower in Group I and fell after each course of drugs whereas neutrophil counts remained relatively constant in Group C. Lymphocyte counts, PHA responsiveness and serum immunoglobulin levels were significantly lower in Group C compared with Group I at all times tested during the study. The incidence of serious infections was higher in Group C (11/34 patients) than in Group I (4/24 patients). In most cases the onset of infection was preceded by a period of extreme lymphopenia ($<0.4 \times 10^9/l$). Intermittent chemotherapy is therefore less suppressive of lymphocyte population size and function than continuous chemotherapy.