

5 DEFECTIVE PLATELET AGGREGATION IN CHILDREN WITH ALL DURING INDUCTION AND MAINTENANCE CHEMOTHERAPY.

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Platelet aggregation was studied in 40 children with previously untreated ALL. The studies were performed in 5 groups: during the two-phase multiple drug induction therapy, the three phases of cyclic sequential maintenance therapy (6-MP, MTX and VCR/PRED pulses) and after cessation of chemotherapy (Klin. Pädiat. 189: 89, 1977).

There was a significant inhibition of the collagen-induced platelet aggregation ($p < 0.001$) during the two months' period of induction chemotherapy. By the use of ADP as platelet aggregating agent the impairment of function was less evident ($p < 0.05$). The alteration of platelet function persisted during the first cycle of maintenance therapy (6-MP) and reappeared regularly during the VCR/PRED pulses to a lesser degree ($p < 0.05$). The aggregation was normal during the MTX- and all further 6-MP-cycles. Our findings indicate that antileukemic drugs, especially VCR may act as platelet aggregation inhibitors. Bleeding episodes have not been observed during the periods of altered platelet aggregation. A critical evaluation of the results is difficult because of the possible influence of other factors.

6 EFFECT OF SUBOPTIMAL FOLATE NUTRITION ON GROWTH IN INFANCY.

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The effect of suboptimal folate intake on the growing infant was studied in a population of infants fed a diet based on boiled, pasteurized cow's milk. From the age of 2 months, one group of infants received a daily supplement of 1 mg folic acid, while the other received a placebo. Supplementation has doubled the red cell folate concentration. High folate levels were associated with a marked increase in weight and length attained at 6 months as well as the rate of weight and length gain from 2 to 6 months. In the second half of the first year the differences between the two groups were no longer evident. The hemoglobin concentration and incidence of anemia were similar in the supplemented and unsupplemented groups throughout the first year. The incidence of infection in the two groups did not differ significantly. The age group 2-6 months is characterized by a high rate of growth and, accordingly, high folate requirements. If, at the same time, the folate supply is marginal, shortage of folate may become a limiting factor to growth.

7 PLASMA AND RED CELL FOLATE IN BREAST-FED AND COW'S MILK-FED INFANTS AND CHILDREN DURING THE FIRST TWO YEARS OF LIFE.

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The plasma and red cell folate concentrations and other pertinent parameters have been studied in 35 breast-fed and 10 infants fed home-made cow's milk mixtures. -Breastfed infants had significantly higher folate conc. in plasma and red blood cells than the artificially fed infants and the adult reference material. A significant positive correlation between plasma folate at one age and that of red cells at a later age in the first year of life was observed. -The cow's milk-fed infants had significantly lower haemoglobin conc., red blood cell counts and haematocrit values than the breastfed infants at 3 months of age, and significantly higher relative reticulocyte counts at 4 and 5 months of age. A significant positive correlation between the haemoglobin conc. and the red cell folate conc. at 6 months of age was found in the artificially fed infants. -The observed differences between the breast-fed and artificially-fed infants are probably due to loss of folate during the preparation of the cow's milk mixtures. Reduction in the folate conc. during boiling could be prevented by adding ascorbic acid. The artificially fed infants may be regarded as folate deficient.

8 THROMBOCYTE-AGGREGATION IN THE NEWBORN. W. Plenert, B. Maak, J. Frenzel, Department of Pediatrics, the University of Jena, GDR.

The aggregation of thrombocytes was studied by the counting chamber technique according to Gross et. al. in mature and immature newborns during the first 3 weeks of life. The number of aggregates is decreased during the first week of life followed in the course of the 2nd week by an increase even surpassing normal values. The number of free thrombocytes, however, indicates a decreased aggregation even during the 3rd week. - The rapid increase in the number of aggregates may be caused by the appearance of a new population of thrombocytes immediately after birth, this hypothesis is supported by the results of thrombocyte counting. The changes of free thrombocytes point to the possibility that aggregation may be influenced by a further age-dependent mechanism.

9 CHANGE IN CELLULAR PHENOTYPE FROM LYMPHOID TO ERYTHROID IN A CASE OF ALL

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Acute leukemia was diagnosed in a three months old boy. Blood leukocyte count was $97 \times 10^9/l$, 92% of the cells were morphologically small lymphoblasts which according to surface marker analysis were of the common-ALL (non-T non-B) type. Remission was achieved with initial treatment. During relapse five months later a morphologically different leukemic cell appeared in the bone marrow, blood and liquor. This cell type which dominated during the terminal stage of the disease was larger and had an abundant basophilic cytoplasm. PAS, sudan and myeloperoxidase staining gave negative results. Neither T nor B lymphocyte markers were seen but a strong surface expression of glycophorin A was found by indirect immunofluorescence and immune precipitation from surface labeled leukemic cells with specific rabbit anti-glycophorin antiserum. Bone marrow karyotype analysis gave in about 80%: 47,XY,+8,t(4:11) indicating that this blast cell represented a malignant clone. As glycophorin A is expressed exclusively on erythroid cells and their precursors, this finding indicates a change from a lymphoid to an erythroid phenotype of the leukemic cells during the course of the disease.

10 ABNORMAL GLUCOSE TOLERANCE IN CHILDREN WITH ACUTE LYMPHOBLASTIC LEUKEMIA (ALL): THE EFFECT OF INDUCTION CHEMOTHERAPY. C. Dacou-Voutetakis, S. Haidas, P. Georgiopoulos, J. Palis, L. Zannos-Mariolea and N. Matsaniotis. First Department of Pediatrics of Athens University, Athens, Greece.

The effect of antileukemic chemotherapy on glycemic and insulin response was investigated in 15 children (ages 2-12) with ALL after an oral glucose load. The glucose loading was performed prior to, and on days 8 and 19 of chemotherapy. The patients were randomly assigned to either Group I, receiving prednisone and Vincristine, or Group II receiving the same drugs and L-asparaginase (L-asp) from days 9 through 19 of treatment. At diagnosis and prior to initiation of therapy, 6 of 15 children (40%) had chemical diabetes according to the criteria of Guthrie. In all 6 children the carbohydrate tolerance improved after 1 week of prednisone and vincristine treatment, despite the expected diabetogenic effect of steroids. This probably indicates that the abnormal glucose tolerance noted in ALL is due to the disease process itself. No difference in glucose tolerance or insulin response curves was detected between Group I and Group II in the different phases of the study. No diabetogenic effect of L-asp. was observed in this study.