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ABO blood groups and birth weight

We have previously reported a high sex ratio among newborn infants of B group compatible with their mothers. Further analysis of 631 consecutive newborn infants from the population of Rome has shown the following. The proportion of B compatible females is lower than expected on the basis of ABO gene frequencies. The mean birth weight of these infants is about 300 g. below the mean level for females ($p \sim 0.01$). No similar deviation are observed among male newborn infants. The data suggest that XX zygotes of B group compatible with their mothers may experience a relative disantvantage during intrauterine life, resulting in a sex ratio deviation in favour of males. Previous investigations on the relationship between birth weight and blood groups have given contrasting results. The present data indicate that such relationship does indeed exist and it is influenced by the sex of infant and the feto-maternal ABO compatibility.

86 B.PELET*, E.GAUTIER, L-S.PROD'HOM. Service de Pédiatrie, C.H.U.V. Lausanne.Switzerland. Opsonisation and Nitrobluetetrazolium (NBT) reduction by granulocytes (gr) in exchangetransfusions (ET) of newborns.

At the time of 23 ET, blood samples from 27 donors and 16 newborns were collected. Isolated gr. were test ed for a) opsonisation index (OI) = mean number of phagocytised yeasts in 50 gr. incubated in serum, b) NBT test = % of stimulated gr. reducing NBT. ET with 25 donors having a normal opsonisation index (4.9±0.3) did not change the normal OI of 16 receivers (4.2±0.3 to 4.6±0.3) but increased the low OI of 5 receivers (1.6±0.2 to 4.7±0.3). Gr. of 4 of them, collected before ET and incubated with donors sera increased their OI (1.7±0.2 to 4.6±0.3, $p < 0.005$), which claims for opsonines importance. 13 donors with normal NBT test (95±2%) induced: no change in 6 infants with normal gr. and a normalisation of the previously low value (45±13%) in 4 babies. 5 donors with reduced NBT test value (66±6%) induced no effect on normal receivers whereas 3 donors with low value (26±6%) depressed the gr. activity of the receivers (81±4 to 58±9%). ET can influence positively or negatively granulocytic functions. Immunologic studies of donors' and receivers' granulocytes should help for indication of ET in septicemia and sclerema of newborns.

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CESSATION OF THERAPY IN CHILDHOOD LEUKEMIA. A SURVEY OF 160 CASES FROM THE NORDIC COUNTRIES.

A report will be given on 160 children from the five Nordic countries who had their antileukemic therapy discontinued prior to November, 1976. Twenty-seven of the 160 cases (17 %) had suffered a relapse before May 1977. Sixty-nine had their therapy stopped in the first ten months of 1976. Thirty-five first line patients treated for more than 3 years, without cessation of therapy, are also included in the report. Different types of therapy have been used.

Central nervous system or testicular relapse occurred in 21 of the total 44 cases who relapsed after three years or more of continuous remission, and whether they were on therapy or not.

A further follow up on the 160 children and in another 50 cases off therapy will be presented.

Cessation of therapy after three years of primary remission is now common in the Nordic countries and have even successfully been performed in a few cases after three or more years of secondary remission.

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Biosynthetic and structural studies in two unrelated cases of homozygous $\delta\beta$ -thalassemia.

Two unrelated Turkish children were found to be homozygous for $\delta\beta$ -thalassemia. Starch gel electrophoresis at pH 9.0 revealed only an HbF band in each case and an AFA_2 pattern from all the parents. HbA_2 was not detectable in the patients and the level was within normal limits in the parents by column chromatography. Structural analysis of HbF indicated the presence of an $A\gamma$:$G\gamma$ ratio at adult level, and, interestingly, Threonine was not present at the 75th position of the γ chain. In-vitro hemoglobin synthesis gave a non-α/α ratio of 0.24 and 0.20 from the patients. The ratios in the parents were 0.48 and 0.44 in one family and 0.38 and 0.27 in the other.

89 STUDIES ON TRANSCOBALAMIN (TC): QUANTITATION OF TC II ISOPROTEIN PATTERNS; COMPARISON OF AN ELECTROPHORETIC WITH AN IMMUNOCHEMICAL ASSAY OF TC II IN HUMAN SERUM.

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Vitamin B 12 in blood is transported by specific carrier proteins, the transcobalamins (TC I,II and III). TC II is of particular interest since it carries and delivers vitamin B12 to the cells. Polyacrylamid gel electrophoresis was used to separate TC I and III from TC II. Autoradiographic evaluation showed that the TC II fraction is composed of 2, 3 or 4 discrete bands in individual serum samples. This observation and family studies have recently led to the conclusion that these isoprotein patterns present polymorphic variants of TC II. Absolute radioactivity of the gel and relative intensities of the radioactive bands were used to quantitate the TC II fractions.

Unsaturated TC II levels were also determined using a new immunochemical method, based on the precipitation of TC II by insolubilised anti-TC II antiserum (radio immunosorbent technique = RIST). The results of TC II determinations with these two basically different assays correlate satisfactorily.

90 STUDIES ON TRANSCOBALAMIN (TC): INCREASED UNSATURATED TC II IN AUTOIMMUNE DISEASE; INFLUENCE OF IMMUNOSUPPRESSIVE THERAPY.

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Transcobalamin II (TC II) is a serum protein responsible for transporting vitamin B12 to the cells. A possible function of TC II in the immune response was suggested by lack of antibody synthesis and agammaglobulinemia in a child with congenital TC II deficiency. Therefore TC II levels in patients with autoimmune diseases (= AID) as lupus erythematodes, dermatomyositis and autoimmune hemolytic anemia and with acquired immunodeficiency states due to chemotherapy (prednisone, azathioprine, chlorambucil) were determined. TC II was usually elevated 2-5 fold in untreated AID, normal in AID under therapy in remission, increased 1.5-3 fold in treated but active AID and normal or elevated 1.5 fold in individuals after renal transplantation. Thus immunosuppressive treatment does not depress the synthesis of TC II, on the contrary, TC II concentration can be significantly elevated during immunosuppressive therapy. It appears that TC II levelsin the group of AID patients correlate better with the clinical course than complement, antinuclear antibody or antinative DNA antibody titers. This suggests that TC II determination could be an additional valuable test to follow up activity of AID.