ABSTRACTS
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ERYTHROCYTES


Two siblings and a 20-yr-old girl have been reported by two groups of investigators as having congenital isolated defects of gastrointestinal absorption of folic acid and defective folic acid transport into the cerebrospinal fluid. All presented in early childhood with a megaloblastic anemia and had various neurologic abnormalities. The 20-yr-old described was unable to absorb any of the folate test compounds in either mono- or triglutamate form and absorption was not improved by the presence of normal human duodenal juice or lyophilized calf jejunal. These subjects have required large pharmacologic doses of folic acid by mouth daily in order to prevent the occurrence of deficiency.—F.A.K.


A patient with cirrhosis of the liver who developed megaloblastosis despite normal serum and red cell folate levels after receiving conventional doses of triamterene for 2 wk is described. Studies using short-term human bone marrow cultures indicate that triamterene interferes with the de novo deoxyribonucleic-acid-thymine synthesis from deoxyuridine and that this interference is completely corrected by reduced (folinic acid) but only partially by oxidized (pteroylglutamic acid) folate. These findings support the concept that triamterene inhibits dihydrofolate reductase activity in human bone marrow, as it does in other mammalian systems, and suggest this drug should be used with caution in patients.
who may have borderline folate stores (such as pregnant women and alcoholics).—F.A.K.


It has been claimed that a causal relationship exists between maternal folate deficiency and both various major complications of pregnancy and fetal malformations. However, perinatal mortality, fetal malformations, birth weight, prematurity, and neonatal hemoglobin concentration were found to be similar between a group of 86 infants born of women with folate deficiency and both various major complications of pregnancy and fetal malformations. The relationship exists between maternal folate deficiency and both various major complications of pregnancy and fetal malformations. It has been claimed that a causal relationship exists between maternal folate deficiency and both various major complications of pregnancy and fetal malformations. However, perinatal mortality, fetal malformations, birth weight, prematurity, and neonatal hemoglobin concentration were found to be similar between a group of 86 infants born of women with folate deficiency of sufficient severity as to cause megaloblastic anemia and the general obstetric population cared for at the same institution.—F.A.K.


Hypoperferremia develops in swine made severely deficient in ceruloplasmin. Administration of ceruloplasmin is followed by a prompt rise in plasma iron; injection of copper alone is not. Cell to plasma iron flow appears to be impaired in this deficiency. Ceruloplasmin most likely catalyzes the oxidation of ferrous iron to permit formation of ferritin at the cellular level from apoferritin. Iron deficiency was also found in several patients with Wilson's disease and severe deficiency of ceruloplasmin.—R.O.W.

EFFECT OF DIAZOXONORLEUCINE AND N-ETHYL MALEIMIDE ON THE INCORPORATION OF RADIOACTIVE NICOTINIC ACID AND NICOTINAMIDE INTO THE PYRIDINE NUCLEOTIDES OF HUMAN ERYTHROCYTES IN VITRO. E. R. Iaffé, G. Neumann. Department of Medicine, Albert Einstein College of Medicine, Bronx Municipal Hospital Center, Bronx, N.Y. Haematologia 4:5–14, 1970.

Diazoxonorleucine inhibited the incorporation of radioactive nicotinic acid, but not of nicotinamide, into the pyridine nucleotides of human erythrocytes. Inhibition was reflected in an increased accumulation of nicotinic acid adenine dinucleotide, the immediate precursor of NAD. Inhibition of incorporation of nicotinic acid by N-ethyl maleimide and, to a lesser degree, incorporation of nicotinamide paralleled the inhibition of glycolysis produced by this compound. These observations were consistent with the known pathways for the biosynthesis of pyridine nucleotides in mammalian tissues. They also indicated that nicotinamide deamidase activity, if present at all, was extremely limited in human erythrocytes.—S.R.H.


Fur seal and sea lion, but not harbor seal, erythrocytes were shown to possess B-like blood factors. Human anti-B serum was shown to possess: (1) a D-galactose-inhibitable fraction which cross reacted with both human group B and B-like seal red cells, and (2) a D-galactose-noninhibitable fraction, sensitive to 2-mercaptoethanol treatment, which reacted only with human group B red cells. The heteroagglutination of both human group B and B-like seal red cells by catfish anti-B heteroagglutinins was specifically inhibited with n-galactose, thus suggesting that immunodeterminant D-galactosyl residues of otherwise dissimilar surface membrane receptor structures provided the basis for the B-like cross reactivity. Variability in the comparative reactivity of human group B and B-like seal red cells with immune plasmas produced by heteroimmunizing catfish with B-active human, baboon and rhesus monkey saliva further illustrated the heterogeneity of (1) immune responsiveness in the lower vertebrates, and (2) the "blood-group-active" saliva substances of different species of primates.—S.R.H.

A further (fourth) case of anti-N is reported in a person of the MN blood group. The MN antigens and anti-N antibody of the 82-year-old German woman behaved regularly in all tests. The antibody belongs to the IgM class and is to be regarded as a "natural" antibody.—S.R.H.


Probable homozygous beta thalassemia was detected in a black child. The criteria for this diagnosis included: (1) a compatible clinical picture, (2) 60% Hb F, 8.8% Hb A2 and 31.2% HbA, and (3) peripheral blood smears compatible with homozygous β-thalassemia. The mild clinical course in this patient and other blacks with this disease reported in the literature is suggestive of a fundamental difference between the defect in blacks and in other ethnic groups. A review of the literature shows the rarity of this disease in blacks, with only eight other cases reported in America. The reasons for this are unknown.

Hb Retics in blood As(%) F(%)
Patient: 7.8 2.6 +++ + 8.8 60
Mother: none 7.7 3.4
Father: none 7.7 4.0

Abstractor’s comment: No studies have been reported on the rate of beta-chain synthesis in this form of thalassemia. This may well be a variant in which the beta chain is synthesized at appreciable rates, similar to that reported recently by Schwartz. It is quite possible that this clinical entity, because of its mildness, is either frequently overlooked or mislabeled as "refractory iron deficiency anemia."—T.F.N.

HOMOZYGOUS Hb J Tongariki: Evidence for Only One Alpha Chain Struc-


Hb J Tongariki (a 115 ala → Asp) was identified in multiple members of a large Melanesian family. Two individuals appeared to be homozygous for this hemoglobin variant and had no detectable hemoglobin A. The authors suggest that in this population there is only one structural locus for alpha-chain production, in contrast to the multiple loci shown to exist for normal α chains. Abstractor’s comment: This finding is in contrast to the hypothesis set forth by Lehmann and Carrell (Brit. Med. J. 4: 748, 1968) who suggested that multiple α chain loci should exist. The present interpretation hinges upon the absence of α thalassemia in this family, a point which has not been rigorously proven and could only be done by chain synthesis studies.—T.F.N.


In three Greek families with hereditary persistence of fetal hemoglobin (HPFH), only γ chains containing alanine at position 136 could be found. This was in contrast to the type HPFH in blacks where both HbOγ and HbHbAγ have been identified. When the Greek type of HPFH was inherited together with β-thalassemia, the level of Hb F was increased above that found in the simple heterozygote for HPFH and HbOγ was identified. Thus, the gene for HPFH directed the synthesis only of alanine-containing gamma chains whereas the β-thalassemia mutant led to the synthesis of a mixture of alanine and glycine containing chains. This information provides further data for the tentative mapping of the com-

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plex beta-gamma-delta locus in the human. —T.F.N.


Sixteen patients with polycythemia vera have been treated with dibromomannitol (DBM) over a 30-month period. Treatment was cyclic. Dosage regimen included daily doses from 200 mg to 300 mg for 8-15 days. Fifty-one cycles are adequate for evaluation: 27 with a total dose of less than 3000 mg and 24 with a total dose of more than 3000 mg. The control of the disease was achieved in all the 16 patients, a single cycle every 4 to 6 months being necessary for such purpose. Leukopenia and thrombocytopenia occurred in 16% and 18%, respectively of overall treatments. A clear dose response and dose toxicity rate was shown. The use of DBM in the chemotherapeutic control of polycythemia vera, both for induction and maintenance therapy, is discussed.—S.R.H.

LEUKOCYTES


Morphology of buffy coat cells adherent to glass cover slips and exposed to latex particles in autologous plasma was studied. The authors describe a sequence of "transformation" of small lymphocytes to "activated lymphocytes" which appeared as "large ameboid phagocytes." These cells were capable of ingesting latex particles. Abstractor's comment: Behavior of monocytes in this system was not discussed, and no cytologic criteria were presented by which "activated lymphocytes" and monocytes were distinguished. It is not established, therefore, whether the phagocytizing mononuclear cells originated from monocytes or lymphocytes.—P.F.


The authors have studied phagocytosis, degranulation, and bactericidal capacity of polymorphonuclear neutrophils in the presence, and in the absence, of hydrocortisone. Phagocytosis and degranulation were not influenced by the presence of glucocorticoids; however, bacterial killing was markedly impaired in the steroid-treated cells. The hydrocortisone treatment resulted in more decreased amounts of NADH oxidase activity, oxygen consumption, and peroxide production following phagocytosis than was observed in normal untreated neutrophils. Hydrocortisone also reduced the amount of nitroblue tetrazolium reduction. The authors point out that the defects in the steroid-treated cells are similar to those seen in neutrophils in chronic granulomatous disease of childhood; they suggest that the hormones might exert their effects by inhibition of NADH oxidation.—P.F.


Phagocytic and bactericidal capacity of leukocytes from patients with hypogammaglobulinemia was impaired for several strains of bacteria if the incubation medium contained hypogammaglobulinemic plasma or serum. When normal serum was supplied in the incubation medium, phagocytic and kill capacity of the cells was normal. The opsonic activity of the hypogammaglobulinemic serum could be restored by the addition of sufficient quantities of gamma globulin. The frequency of infections in patients with decreased globulin levels may be related, in part, to decreased phagocytic function.—P.F.

RELEASE OF VITAMIN B12-BINDING PROTEIN BY HUMAN LEUKOCYTES IN VITRO. J. Corcino, S. Krauss, S. Wazman, and V.
ABSTRACTS


Human granulocytes contain a vitamin B12-binding protein. Chronic myelogenous leukemia leukocytes were found to release this protein into incubation medium suggesting that granulocytes serve a secretory, as well as a phagocytic, function.—F.A.K.


A microspectrophotometric method was used for determination of the amount of periodic acid-Schiff reactive material (PASMa) in individual blood and bone marrow neutrophil leukocytes from seven cases of chronic myelocytic leukemia (CML) and five nonleukemic subjects. Neutrophils from untreated CML contained low PASMa amounts as compared to neutrophils from normal subjects, while normal amounts of PASMa were found in neutrophils from CML patients in busulfan-induced remission. Blood and bone marrow neutrophils in the same individual subject contained similar PASMa amounts whether sampled from a normal person, untreated CML (low PASMa level), polycythemia vera (high PASMa level), or CML in complete remission (normal PASMa level). Treatment of CML with busulfan initiated earlier normalization of PASMa amounts in bone marrow neutrophils than in blood neutrophils, although similar normal PASMa amounts were found in both blood and bone marrow neutrophils in complete remission. The pattern of normalization showed that the busulfan-induced normalization of PASMa content in CML-neutrophils was due to action on myeloid cell precursors and not to direct action on mature neutrophils. The PAS-normal cells in remission might indicate a metabolic change of the leukemic myeloid cell population or represent a second “normal” population of neutrophilic leukocytes.—J.E.U.


Serial trephine biopsies of the iliac bone marrow were studied in 31 patients with acute leukemia—myeloblastic (14), lymphoblastic (5), promyelocytic (2), monoblastic (2), and undifferentiated (8)—in the course of hormonal and chemical therapy. Clinical and hematologic remission was characterized by the following sequence of changes: reduction in marrow cell count, an increase in the proportion of reticular stromal cells, a fall in the proportion of leukemic cells, and revival of hematopoiesis. Good correlation between tissue sections and smears was obtained.—J.V.


In two patients with chronic lymphocytic leukemia abnormal proteins were detected in the serum and urine. These proteins were studied by paper and gel electrophoresis, gel chromatography and ultracentrifugation; immunoelectrophoresis was also performed using polyvalent rabbit antisera and monovalent antisera. The paraproteins of urine and serum, in each case, proved to be similar to if not identical with those associated with multiple myeloma.—J.V.

Multiple Myeloma Without Paraprotein. J. Szücs. First Department of Medicine, University Medical School, Budapest, Hungary. Haematologia 4:97-102, 1970.

The case history of a patient with multiple myeloma is presented. The diagnosis was based on the typical bone marrow pic-
ture and bone deformities. However, para-
protein could not be detected in the blood
or urine by either paper electrophoresis or
immunoelectrophoresis.—S.R.H.

HEMOSTASIS

STUDIES ON THE DETECTION OF ADVERSE
DRUG REACTIONS IN THE NEWBORN. II.
THE EFFECTS OF PRENATAL ASPIRIN ON
NEWBORN HEMOSTASIS. W. A. Bleyer and
R. T. Breckenridge. University of Rochester
(NY) School of Medicine and
Dentistry, Rochester, N.Y. JAMA 213:
2049, 1970.

The authors studied the effect of maternal
aspirin ingestion on hemostasis in
the newborn. Newborns who had been exposed to
aspirin during the week prior to birth
showed the typical impairment in collagen-
induced platelet aggregation. When com-
pared with a group of neonates who had
not been exposed to aspirin, they showed
a somewhat higher incidence of postnatal
hemorrhagic manifestations. Although the
number of patients studied was small,
it would seem prudent to restrict aspirin dur-
ing the last month of gestation.—H.J.W.

EFFECTS OF COUMARIN COMPOUNDS ON
THE FETUS. S. J. Fillmore and E. McDevitt.
Cornell University Medical College, New
York, N.Y. Ann. Intern Med. 73:731,
1970.

The authors studied the effect of admin-
istering coumarin compounds to 36 women
during various stages of pregnancy to de-
termine their risk to the fetus. Thirty-two
women delivered normal infants, while four
pregnancies resulted in stillbirths. The au-
thors related the occurrence of stillbirths to
a history of previous obstetric complications
and the occurrence of prothrombin times,
which were more than three times the nor-
mal value on at least two occasions. All
women with a normal obstetric history and
adequate control of the prothrombin time
delivered normal infants. Abstractor’s com-
ment: The authors’ conclusion regarding the
relative safety of these compounds differ
from those of several previous articles on
this subject.—H.J.W.

“Refractory” Thrombocytopenic Pur-
pura Treated Successfully with Cy-
clophosphamide. R. K. Laros, Jr., and
J. A. Penner. University of Michigan,
Ann Arbor, and Wayne County General
Hospital, Eloise, Mich. JAMA 215:3,
1971.

Eleven patients with ITP, ranging in age
from 18–80 yr, were treated with cyclo-
phosphamide, in an initial dose of 1–2 mg/
kg/day. All eleven patients had previously
been treated with corticosteroids and nine
had had splenectomy. Seven of the patients
had a complete remission, occurring from
2–10 wk after therapy was begun and
lasting from 10–40 months. In the four
other patients, the platelet count increased,
but did not become completely normal.
Side effects were minimal. The therapeutic
effect of cyclophosphamide may be due to
its immunosuppressive properties.—H.J.W.

FIBRINOLYTIC ACTIVITY OF THE BLOOD IN
PATIENTS WITH ACUTE LEUKOSIS AND
BLASTIC CRISIS OF CHRONIC MYELO-LEU-
KOSIS. G. A. Naumova, G. V. Andreyenko,
and L. D. Orlota. The Central Institute
of Hematology and Blood Transfusion,

During hemorrhagic episodes of 11 pa-
tients with acute leukemia and six patients
with chronic leukemia in terminal blastic
crisis, studies of the fibrinolytic system were
made. Tests showed heightened fibrinolytic
activity, increased levels of activator and
proactivator substances, and low antiplas-
min levels in all patients, changes that ap-
pear to play a significant role in the devel-
opment of the hemorrhagic syndrome of
acute leukemia. In a technical note the
authors consider euglobulin lysis times alone
as an unreliable index of fibrinolytic ac-
tivity in leukemia and suggest that com-
parison of data from a variety of tests is
desirable.—J.V.

ANTICOAGULANT ACTIVITY OF BLOOD IN PA-
TIENTS WITH ACUTE AND CHRONIC LEU-
KOSIS. A. C. Shitikova and L. P. Papa-
yan. The Leningrad Institute of Hematol-
ogy and Blood Transfusion, Leningrad,
In a study of three groups of leukemia patients, 12 with acute hemorrhagic leukemia, 11 with acute nonhemorrhagic leukemia and 14 with chronic nonhemorrhagic leukoses (leukemia, 14; myelofibrosis, 2) coagulation tests of the plasma, both in the presence and absence of patient platelets, were made. These included heparin tolerance, thrombin time, free heparin content, antithrombin activity, prothrombin levels and antithromboplastin activity. Normal controls were also studied. While all leukemic cases showed some disturbance of coagulation, in acute hemorrhagic cases, a marked increase in antithrombin activity and rather decreased thromboplastin formation was noted. The increase of platelets in the tests tended to ameliorate these abnormalities, indicating the positive role of the platelet in the hemorrhages of acute leukemia.—J.V.


Extensive laboratory studies were made on 42 patients with leukemia and on 30 normal persons. Patients with acute leukemia (15 cases) under treatment with hormones and blood transfusions, were studied both during hemorrhagic episodes and in the nonhemorrhagic state. Nonhemorrhagic patients showed decreased heparin tolerance, low fibrinolytic activity, rather low fibrinogen levels and a normal prothrombin index; thromboelastographic studies suggested a hypercoagulable state. In the hemorrhagic episodes the heparin tolerance became prolonged, fibrinogen levels increased, and fibrinolytic activity was unchanged, except in two patients in whom increased fibrinolytic activity was associated with a fall in fibrinogen. Other changes noted during hemorrhages included a lowered prothrombin index, while thromboelastographic studies suggested a hypocoagulable state. Bone marrow examinations showed that hemorrhages were accompanied by a fourfold rise in the number of blasts, the cells tending to be larger with some dedifferentiation and marked enzyme activity. Also studied were seven patients with chronic myeloid and 20 patients with chronic lymphocytic leukemia. Hemorrhagic episodes occurred in only two of the myeloid cases and even more infrequently (three cases of epistaxes) in the other group. All manifested disturbances in coagulation function tests, but the patterns were less consistent and the abnormalities much less pronounced than in the acute disease. —J.V.

Immunohematology


There is evidence to suggest that antigens in melanoma are capable of evoking an immune response. Peripheral blood lymphocytes from seven patients with melanoma were cultured in the presence of PHA, streptokinase-streptodornase, Candida albicans, antigen, and extracts from autologous or homologous tumor. A concentrated extract of urine from one patient was also tested. Blastogenic response was measured by incorporation of tritiated thymidine by lymphocytes (time of culture termination was not given). A mitogenic substance present in the fluid from a cystic tumor of one patient was separated from melanin pigments by starch-block electrophoresis; it migrated as a β-globulin. A homogeneous protein antigenically identical to the tumor protein was present in the urine of the same patient. The substance caused marked stimulation of lymphocyte blastogenesis when tested against cells from six other patients. These patients exhibited, in addition, marked stimulation of lymphocyte blastogenesis when their lymphocytes were cultured in the presence of crude autologous tumor extracts. The evidence presented supports the view that lymphocytes of these patients were sensitized to antigens present in their own tumors. The authors suggest that the response of lymphocytes from six patients to a mitogenic property of homologous tumor favors sharing of tumor-specific antigens in melanoma. —P.F.

The authors studied the ability of lymphocytes from patients with congenital thymic aplasia and X-linked agammaglobulinemia to produce macrophage migration inhibitory factor (a function known to correlate, in the guinea pig, with in vivo delayed hypersensitivity). The results showed that lymphocytes of patients with congenital thymic aplasia failed to produce MIF when challenged with antigens known to evoke responses in normal persons. An exception in the group was a patient who, following thymic transplant, showed lymphocyte MIF production. The lymphocytes of patients with agammaglobulinemia showed normal MIF production. In the categories studied here, the correlation between capacity of lymphocytes for MIF production and positive delayed hypersensitivity skin reactions to the antigens was a positive one.—P.F.


Lymphocytes from 15 patients with hepatitis following exposure to halothane were cultured in the presence of halothane in an in vitro system. Blastogenesis was measured by incorporation of tritiated thymidine in lymphocyte cultures after 3 and 6 days of incubation. Tritiated thymidine incorporation of blood lymphocytes from healthy controls and from nine patients with a variety of acute and chronic liver diseases did not increase in the presence of halothane. In eight of the 15 patients exhibiting jaundice after halothane exposure, increased thymidine incorporation was demonstrated in lymphocytes, in the presence of halothane, in autologous plasma-containing medium. In two additional patients, halothane caused increased incorporation when the cells were cultured in medium containing fetal calf serum. Antimitochondrial antibodies were observed in 10 patients with halothane jaundice, and also in control patients with chronic active hepatitis, and primary biliary cirrhosis. Two patients without liver damage following exposure to halothane showed no lymphocyte stimulation in the test system. This test system can serve as a diagnostic aid in distinguishing between viral and halothane hepatitis.—P.F.

**Inhibition of the PHA-Response by L-Asparaginase.** A. Astaldi, Jr., G. R. Burgio, I. Kří, R. Genova, and G. Astaldi. Pediatric Clinic, University Medical School, Pavia, Italy, and Blood Research Foundation Center, Tortona, Italy. Haematologia 3:395–399, 1969.

*Escherichia coli* L-asparaginase added to PHA cultures of human peripheral blood lymphocytes inhibited lymphocyte blastogenesis. This inhibiting effect was related to the dose of L-asparaginase, but was not proportional to it. Also, the individual reactivity of the lymphocyte donor interfered with the extent of the inhibition. Again, the addition of L-asparaginase to the culture at different times from its onset showed that blastogenesis was stopped approximately at the point reached when asparaginase was added. It now remains to be answered whether *E. coli* L-asparaginase inhibits PHA lymphocyte blastogenesis by depletion of amino acids necessary to cellular growth, or by a toxic effect.—S.R.H.


The effects of PHA and of a previously noninvestigated heparinoid were compared in vivo and in vitro. (1) In vivo the heparinoid was found to have an effect similar to that of PHA; it induced leukocytosis and accelerated hematological regeneration in the radiation-damaged animal. Leukocytosis developing after heparinoid
administration was mainly due to a rise in the lymphocyte count. However, (2) the heparinoid failed to induce blast transformation in leukocyte cultures in vitro and exerted no mitogenic effect.—S.R.H.

**Influence of Passive Immunization on Primary and Secondary Response.** J. Hai1asa. Department of Microbiology, Pomeranian School of Medicine, Szczecin, Poland. Arch. Immun. Ther. Exp. 17:8–17, 1969.

The influence of homologous antibodies administered together with antigen on the primary and secondary immunologic response was studied. Sheep erythrocytes were injected into rabbits and 1 hr later 75 or 195 rabbit antibodies directed against sheep erythrocytes were given. In the controls only antigen was injected. Presence of antibody-producing cells (PFC) in the blood and titers of antibodies were examined daily. In the primary response, PFC and antibody production were found to be markedly delayed in the experimental group as compared with the controls. Antibodies of the 7S class were found to inhibit significantly antibody production. However, the secondary response to the same antigen had similar intensity and appeared at the same time in the experimental group and in the controls. Administration of antigen and antibody to previously passively immunized rabbits was followed by the appearance of very high numbers of PFC in the blood. The mechanism of this last phenomenon remains unclear.—M.K.


The effect on the colony count formed after bone marrow transplantation of some in vitro mitogenic agents (endotoxin, PHA, trypsin) was studied. Spleen colony counts increased in the recipients treated with mitogens after transplantation; however, the qualitative distribution of the colonies did not change. Some correlation could be demonstrated between the endotoxin dose and the colonies formed. It may be assumed that all agents irritating the cell membrane in vitro stimulate mitoses of the colony-forming cells also in vivo.—S.R.H.


The mechanism of erythrophagocytosis following a massive transfusion of heterologous erythrocytes has been studied. The serum of Wistar rats receiving dog erythrocytes was examined for cytophilic and opsonizing antibodies for several days following transfusion. In the first 3 days, when the erythrophagocytosis was most distinct, only opsonizing antibodies could be demonstrated in the serum. Cytophilic antibodies appeared later. It is assumed that erythrophagocytosis after the transfusion of heterologous erythrocytes is stimulated by opsonizing, probably natural antibodies, while the cytophilic antibodies play no essential role in the early posttransfusion period.—S.R.H.


Two erythrocyte populations were found in a 72-yr-old woman without any symptoms and signs of leukemia. Some 15% of erythrocytes contained a normal B antigen corresponding to this genetic group, while the second erythrocyte population contained a slightly modified B antigen resembling Bm or Bo. The proportions of these two populations and serologic properties of erythrocytes were stable during 11 months of observation. The chromosomal studies failed to disclose any abnormality. The observed serological anomaly of erythrocytes resembled the modifications described in leukemia and was probably due to somatic mutation.—M.K.
ABSTRACTS

LW FACTOR. A. S. Wiener, J. Moor-Jankowski, and G. J. Brancato. Department of Forensic Medicine, New York University School of Medicine, Serological Laboratory of the Office of the Chief Medical Examiner of New York City, and the Lutheran Medical Center, Brooklyn, N.Y. Haematologia 3:385-393, 1969.

By injecting guinea pigs with rhesus monkey red cells, antisera can be produced containing a spectrum of antibodies which, by absorption with appropriate red cells, can be fractionated in numerous components. In this paper the following antibody fractions are described: (1) antibodies reacting with the red cells of all rhesus monkeys; (2) antibodies not only reacting with the red cells of all rhesus monkeys but also cross-reacting with the red cells of all human beings; (3) antibodies not only reacting with the red cells of all rhesus monkeys but also cross-reacting with the red cells of all human newborn babies, but not of adults; (4) antibodies not only reacting with the red cells of rhesus monkeys but also cross-reacting with the red cells of Rh-positive human beings, but not Rh-negative cells; and (5) antibodies not only reacting with the red cells of LW-positive human beings, but not the rare LW-negative cells. Guinea pigs infected with baboon red cells produce antisera having properties very similar to those of antisera resulting from immunization with rhesus monkey blood, but injection of human blood into guinea pigs does not appear readily to elicit the production of Rh antibodies. Guinea pigs differ from rabbits in that the antisera they produce after injections of rhesus monkey blood or baboon blood do not appear to contain antibodies cross-reacting with human agglutinogen M. The incidence of the LW factor in human beings is 99% while the incidence of the Rh, or rhesus, factor is about 85% among Caucasians. Factors LW and Rh therefore appear to be unrelated.—S.R.H.

MISCELLANEOUS


Experiments have been undertaken to study whether the uptake of radioactive substances into cultures of normal human subjects could be related to latent and diffuse mycoplasma infection. Whole blood or washed erythrocytes were incubated in PPLO "Difco" broth, with or without antibiotics, in the presence of 6-3H or 2-14C thymidine, G-3H or 2-14C uridine, 14C Na formate, 2-3H glycine or G-14C 1-lysine. At intervals of several hours or days the centrifuged sediments of the blood cultures were examined for radioactivity in the fractions extractable with warm HC1O4 before and after elimination of the acid-soluble fraction, the purines, the nucleic acids, or the protein fraction. In addition, chromatographic fractionation of extracts and autoradiographic examination of smears of incubated erythrocytes were carried out. The findings were qualitatively similar, but quantitatively different. Uptake of thymidine and uridine into the acid-soluble fraction and into the nucleic acids, uptake from formate and glycine into the purine bases and into the nucleic acids, and uptake of lysine into the protein fraction were observed. Radioactive or nonradioactive thymidine and uridine, within certain concentration limits, stimulated the uptake of the same nucleosides and of formate. The completed uptake of a certain amount of thymidine radioactivity appeared to exert an inhibitory action on the subsequent uptake. Further, uptake was stimulated under good conditions of oxygenation. In agreement with previous findings it has been concluded that the results may be attributed to a turnover of nucleic acid related to a diffuse and silent infection by mycoplasma or L-forms of schizomycetes and to the multiplication of these microorganisms in the blood cultures.—S.R.H.

A NEW METHOD OF PREPARING NITROGEN SAMPLES FROM HAEM FOR MASS SPECTROMETRIC ISOTOPE ANALYSIS. I. Cönnies, H. Medzihradszky, and I. Berndt. Hungarian Research Institute for Mining, Institute for Organic Chemistry of Eötvös
ABSTRACTS


The life span of a selected population of red cells formed in the bone marrow after thermal injury was studied by means of the $^{15}$N stable isotope tracer technique. The adequacy of this method depends on the suitable preparation of nitrogen samples from heme for isotope analysis. A new procedure was worked out for this purpose utilizing oxidation by cupric oxide in high vacuum at a temperature of about 600°C. Being much less time-consuming and at the same time reasonably accurate, the procedure is superior to the methods hitherto used.—S.R.H.