ERYTHROCYTES


These authors investigated several patients heterozygous for Hb Hasharon. The associated clinical syndrome was characterized by a mild compensated hemolytic state. Hb Hasharon was present only in relatively small quantities (16-19%) in the heterozygote. It was found to be more thermolabile than Hb A. Studies of the synthesis of this hemoglobin by bone marrow cells in vitro showed that it was synthesized at a slower rate than Hb A. The authors concluded that this Hb is present in low concentrations in the peripheral blood because: (1) it is slowly denatured in vitro, and (2) there is a decreased rate of synthesis in the erythroblasts.—T. F. N.


The authors describe a Japanese family in which eight members were found to be heterozygous for a previously undescribed hemoglobinopathy, Hb Hiroshima. The associated clinical symptomatology was limited to a very mild erythrocytosis. The abnormal Hb moved more rapidly than Hb A on agar gel electrophoresis at pH 8.6. Oxygen equilibria of red cells from heterozygous carriers, as well as the separated Hb, was shifted to the left with a P_50 of 2.5 mm. (vs. 9.2 mm. for Hb A). Both the Bohr effect and heme-heme interaction appeared to be reduced in the mutant Hb. Evidently the substitution of β^143 (H21) profoundly alters the allosteric properties of the Hb molecule.—T. F. N.
F-Thalassemia. G. Stamatoyannopoulos, Ph. Fessas and Th. Papayannopoulos.

The authors describe a total of 68 patients heterozygous for high F-β thalassemia (F-thalassemia) and 21 heterozygous for both high F and high Aγ-β thalassemia. Individuals heterozygous for F-thalassemia exhibited hematological findings typical of thalassemia trait, elevated levels of Hb F (mean 10.9%), and normal Hb Aγ levels. Individuals heterozygous for both F-thalassemia and Aγ-thalassemia were more heterogenous in their clinical symptomatology; most individuals showed normal growth and development, minor bone changes, moderate splenomegaly and no transfusion requirements. Occasionally, however, some patients presented with clinical symptomatology comparable to the average case of homozygous Aγ-thalassemia. The authors suggest that the milder clinical course of most individuals heterozygous for both Aγ- and F-thalassemia is due to the fact that more γ chains can be synthesized in F-thalassemia leading, in turn, to a greater degree of “effective” erythropoiesis. The authors consider various current hypotheses of the pathogenesis of the thalassemia syndromes and conclude that none satisfactorily explains the findings in F-thalassemia. The F-thalassemia gene appears to lead to the complete suppression of β and δ chain production with a consistent (and genetically determined) increase in γ chain synthesis. Abstractor’s Comment: This is a definitive article on the clinical and genetic aspects of the F-thalassemia gene.—T. F. N.


Red cells from patients with Hb H disease and β-thalassemia major were separated into “young” and “old” cell layers by differential centrifugation. In β-thalassemia, the “young” cells contain inclusion bodies (precipitated alpha chains), whereas in Hb H disease it is the older cells which contain the intracellular precipitates (β chains). Comparison of the number of inclusion-containing cells and glycolysis, glutathione content, hexose monophosphate shunt activity and potassium flux led the authors to conclude that inclusion formation (hemoglobin precipitation) is related to increased erythrocyte cation permeability. The increase in potassium flux does not appear to be correlated with the level of intracellular GSH. The authors are of the opinion, however, that the premature removal of inclusion-containing erythrocytes in thalassemia is related to the mechanical properties of the inclusions rather than secondary to any changes in cation permeability.—T. F. N.


Hb Sabine is yet another hemoglobin variant found associated with a severe hemolytic anemia in a 16-year-old girl of Scotch–English–German descent. This unstable hemoglobin had an electrophoretic mobility slightly slower than that of Hb S. The molecular defect was shown to reside in the F helix of the beta chain; the substitution of a proline for a leucine at this point disrupting the helix, reducing the affinity of the beta chain for heme, and rendering the beta chain more susceptible to denaturation. Abstractor’s comment: It is interesting to note that this patient was previously described by Mills et al. (Blood 32:15, 1968) as a disorder of red cell metabolism. The low ATP levels were most probably secondary to disruption of membrane structure by intracellular hemoglobin precipitates.—T. F. N.

Hemoglobin Babinga or α2 δ2 136Glu–Asp
A minor hemoglobin $A_2$ was detected in five members of three Negro families and exhibited a mobility on starch gel electrophoresis at pH 8.1 only slightly greater than that of Hb A. Peptide analysis revealed a substitution of aspartic acid for glycine at position no. 136 (H 14) of the delta chain. Substitutions at this position have previously been reported in the beta chain (Hb Hope) and the gamma chain. They appear to be asymptomatic with respect to Hb stability or function. This minor hemoglobin variant was originally described in the Babinga Pygmies of the Central African Republic by De Jung and Bernini (Nature 219:1360, 1968).—T. F. N.

**Hemoglobin Function in Stored Blood.**


The oxygen dissociation of blood stored in various preservatives was studied over a period of several weeks. A marked increase in oxygen affinity was noted within the first week in blood stored in either standard ACD solution or ACD solution to which adenine had been added. This increase in 2,3 DPG also fell much less rapidly. The authors conclude that erythrocyte 2,3 DPG is important in the oxygen dissociation of blood. They point out that this may be of some therapeutic significance when massive transfusions of stored blood must be administered.—T. F. N.


The authors describe nine additional cases of congenital nonspherocytic hemolytic anemia associated with the presence of an unstable hemoglobin. The significant characteristics were: (1) anemia of varying degree, (2) pigmenturia, (3) a thermolabile hemoglobin fraction and (4) the presence of inclusion bodies in the erythrocytes following splenectomy. The primary urinary pigment in these patients was found to be a water-soluble, dialyzable, ammonium sulfate-precipitable substance with a molecular weight of about 1300 composed possibly of polypyrroles or polypyrrole-polypeptide complexes. Mesobilifuscin formed only a small proportion of the total urinary pigment. Splenectomy was found to be of distinct benefit in three of the four patients in which it was carried out.—T. F. N.


Another previously unrecognized unstable hemoglobin variant was identified in the hemolysate from a German–Jewish woman who presented with a partially compensated hemolytic anemia. The abnormal hemoglobin accounted for 30 per cent of the hemoglobin. On vertical starch gel at pH 8.6 (TEB buffer), it had a mobility similar to that of Hb S. Fingerprint analysis of Hb R-B revealed a substitution of arginine for the normally occurring glycine at residue 24 of the beta chain (B6). This substitution of a polar for a nonpolar residue in the interior of the molecule might be expected to alter the relationship of the peptide chain to the attached heme. Such changes in heme–globin relationships have been found to lead to loss of hemoglobin stability. This represents the 12th such hemoglobin described.—T. F. N.

The author reviews the hemoglobin variants associated with familial polycythemia. Five variants are described and the amino acid substitution in four lies at the $\alpha_2$ contact; in the fifth the amino acid substitution indirectly influences the $\alpha_2$ contact. The author stresses the importance of this area in normal heme-heme interaction—T. F. N.

**EFFECTS OF PLASMA FROM PREGNANT WOMEN ON IRON ABSORPTION BY THE RAT. S. V. Apte and E. B. Brown. From Department of Internal Medicine, Washington University School of Medicine, St. Louis, Mo. Gastroenterology 57:126-133, 1969.**

Plasma and ultrafiltrates of plasma from iron deficient and from pregnant subjects were put into the intestinal lumen of rats. The absorption of radioiron was then measured. Iron absorption was shown to be enhanced when compared to the effect of normal plasma. This effect is not merely due to adsorption by mucosal cells, but actually involves penetration of the mucosa and entry of iron into the blood. The active agent appears to be a fairly small but stable organic compound; it may work by protecting iron and avoiding formation of insoluble iron complexes.—R. O. W.

**THE CHELATION OF IRON DURING INTESTINAL ABSORPTION. A. Jacobs, M. D. Kaye, and D. Trevett. From Departments of Pathology and Medicine, Welsh National School of Medicine, Cardiff Royal Infirmary, Cardiff, Wales. J. Lab. Clin. Med. 74:212-217, 1969.**

Desferrioxamine was given intravenously to normal and anemic patients who had received orally administered $^{59}$Fe; radioactivity was measured in the urine. Increased excretion of iron was found in all subjects who had received desferrioxamine; it was highest in iron-deficient subjects, and higher in anemic than in normal individuals. Iron appears to be available for chelation during the early phases of intestinal absorption. Iron appears to be transported in at least three forms: as ferritin, bound to transferrin and as chelatable iron.—R. O. W.

**QUANTITATIVE EVALUATION OF THE INTENSITY OF ERYTHROPOIESIS BASED ON RADIOISOTOPE METHODS AND MATHEMATICAL METHODS. L. Konopka, K. Rechowicz and S. Pawelski. From the Department of Internal Medicine, Institute of Hematology. Warsaw, Poland. Pol. Tyg. Lek. 24:843-846, 1969.**

In 45 cases of various types of anemia, and in healthy subjects, comparative assessment of hemoglobin production was attempted using graphic and mathematical analysis of the $^{59}$Fe disappearance curve in the plasma. It was shown that the 24-hour synthesis of hemoglobin calculated by the method of Huff et al. was in all cases much higher that that determined by the mathematical method of Pollycove and Mortimer. This fact is due to hemolysis occurring in the bone marrow observed in iron deficiency anemia, hemolytic anemia and in Addison-Biermer’s disease, and also to passage of considerable amounts of iron from the plasma to storage spaces (aplastic anemia). These phenomena can be demonstrated using the method of Pollycove and Mortimer, which is more objective and permits to gain an insight into certain pathogenetic mechanisms of various types of anemia.—M. K.

**ANEMIA IN CHILDREN. J. Janele. From the Hematological Department, University Hospital Praha-Vinohrady, Czechoslovakia. Česk. Pediat. 23:985-992, 1968.**

Analysis of 189 cases of anemia in children up to the age of 15, and comparison with 401 cases in adults from approximately the same territory revealed that the risk of anemia was rather great in childhood, affecting mostly infants up to the age of two years. Preventive care and the considerable attention paid to infants generally did not allow the development of severe forms. The cause of the increased risk lay mostly in the deficient iron balance so that sideropenic anemia prevailed over the other types. Older children suffered mostly from congenital hereditary forms and from toxic and infectious anemia, which occurred more frequently than in adults.—L. D.

**NICOTINIC ACID AMINE (NIACINAMIDE AS ADDITIVE IN BLOOD PRESERVING SOLUTIONS. J. Fiala, J. Urbancová and V. Šebestík. From the Institute of Hematology and Blood Transfusion, Prague,**
Results of in vitro tests failed to confirm that the addition of nicotinic acid amide to the glucose-citrate solution used for blood preservation exerted any favorable effect on the preservation of erythrocytes stored for 35 days. A favorable effect was noted only with regard to platelet counts in stored blood throughout the entire storage period following the addition of niacinamide. Post-transfusion survival of erythrocytes preserved in this way and stored for 21 days did not exceed significantly the usual survival values if the ordinary ACD solution used—L. D.

LEUKOCYTES


There was increased evidence of abnormal palmar creases in children with acute leukemia compared to normal controls. The abnormalities were similar to those found in Down’s Syndrome. The dermatoglyphic defects may mark a genetically determined predisposition to leukemia or may be the result of a prenatal leukemogenic teratogen.—A. L. B.


Lymphoid cells were separated from the peripheral blood of patients with Hodgkin’s disease. In untreated patients there was an increase, up to four per cent, of large lymphoid cells which were actively synthesizing DNA. There was an increased proportion, 10-20 per cent, of medium-sized hyperbasophilic lymphoid cells with sufficient endoplasmic reticulum on electron microscopy to be included in the plasma cell series. Occasional mature plasma cells were seen. The presence of large lymphoid cells was related to the activity but not the stage of the disease. Similar changes were found after immunization procedures in viral and bacterial infections, and in certain autoimmune diseases. The findings suggest the presence of an immunological response in Hodgkin’s disease and the possible nature of the antigen—is infective, tumor specific or other—is discussed.—A. L. B.


The paper studies the content and the individual functions of the acid fluoropolysaccharides in leucocytes from 20 healthy men, 15 suffering from chronic granulocytic leukemia, 10 from chronic lymphocytic leukemia and 20 from erythemia. The content of acid fluoropolysaccharides in leucocytes appeared to be increased in erythemia, greatly increased in chronic granulocytic leukemia and greatly lowered in chronic lymphocytic leukemia. Methods of the study are also described.—J. K.

Initial biopsies of cervical, supraclavicular and axillary lymph nodes from 185 adults with lymphoma who did not have the anatomic distribution of Burkitt's lymphoma were reviewed. All patients were seen at Mayo Clinic between 1952 and 1964. A "starry sky" appearance (marked histiocytic phagocytosis) was present in 18 per cent of the 85 immature (lymphoblastic) lymphomas, but was absent in the 100 mature (lymphocytic lymphomas, while moderate phagocytosis was noted in 19 per cent of the former and only nine per cent of the latter. In the group with lymphoblastic lymphoma, no patients exhibiting marked phagocytosis survived five years; 12 per cent of the patients who had moderate phagocytosis survived five years as did 31 per cent of the patients who had no evident phagocytic activity in their tumors. The presence and degree of histiocytic phagocytosis are ancillary clues to prognosis in adult patients with lymphoblastic lymphoma.—J. E. U.


A review of 21 patients with primary reticulum cell sarcoma of bone is presented. Sixteen patients were treated by irradiation; 10 survived without disease and of these six for five or more years. Five patients were treated by radical surgery; three survived without disease and two died with distant metastases. The combined five-year cure rate, using radiation therapy and radical surgery, is 50 per cent. Either radiation therapy or radical surgery can control the local disease. Since this tumor is known to possess moderate tendency to develop distant metastases and considerable radiosensitivity and radiocurability, the initial treatment of choice should be aggressive radiation therapy; radical surgery should be reserved as a back-up procedure to control persistent local disease. As a primary method of treatment, amputation is seldom advised.—J. E. U.


A tumor of the thymus gland characterized by a polymorphic infiltrate similar or identical to Hodgkin's disease has often been diagnosed as granulomatous thymoma. This report describes three such cases. Both the clinical course and the morphologic changes suggest that these patients have nodular sclerosing Hodgkin's disease in which diagnostic Reed–Sternberg cells are present but extremely sparse. The chance of extrathoracic involvement is extremely high in comparison with all other types of thymomas. For prognostic and therapeutic purposes, these cases should be designated as "Hodgkin's disease of the thymus" and not "granulomatous" thymoma.—J. E. U.


A battery of laboratory tests was applied in the study of a family with chronic lymphocytic leukemia in three sibs, the progeny of a consanguineous mating. Two survivors with leukemia and a sib showed impaired in vitro lymphocyte transformation in response to phytohemagglutinin and selective deficiency of serum immunoglobulin levels. Two other sibs showed only selective immunoglobulin deficiency. The array of findings suggests that a genetically controlled immune mechanism is involved in familial clusters of chronic lymphocytic leukemia.—J. E. U.

CHRONIC LYMPHOCYTIC LEUKEMIA VERSUS CHRONIC LYMPHOSARCOMA CELL LEUKEMIA: ANALYSIS OF 496 CASES. L. R. Zacharski, and J. W. Linman. From the Mayo Clinic and Mayo Foundation, Sections of Clinical Pathology and Medicine,
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and the Mayo Graduate School of Medicine (University of Minnesota), Rochester, Minn. Amer. J. Med. 47:75–81, 1969.

Review of 496 cases of chronic lymphocytic and chronic lymphosarcoma cell leukemia disclosed a number of minor differences in clinical and laboratory manifestations, but with few exceptions they lacked statistical significance. However, highly significant differences were found in survival and incidence. A high incidence of significant chromosomal anomaly was observed. Although no complete responses were seen, two thirds of the patients with chronic lymphocytic leukemia, lymphosarcoma and Hodgkin’s disease, and one third of reticulum-cell sarcoma patients obtained objective benefit. Good responses were noted in 44 per cent of patients with chronic lymphocytic leukemia, 42 per cent of those with lymphosarcoma, 28 per cent with Hodgkin’s disease and 18 per cent of reticulum-cell sarcoma patients. The responses included definite tumor shrinkage in all disease categories. Responsiveness was well


A technique of short-term in vitro culture without added phytohemagglutinin has been applied to the cytogenetic study of lymph nodes involved by malignant lymphoma. Chromosome studies have been performed on lymph node tissue from six cases of follicular lymphoma, four cases of lymphosarcoma, five cases of Hodgkin’s disease, five cases of reticulum cell sarcoma and three cases of chronic lymphocytic leukemia. A high incidence of significant chromosomal anomaly was observed. Although no two cases were identical, patterns of cytogenetic change were discernible. The more anaplastic tumors tended to possess near-tetraploid chromosome numbers. Anomalies involving the chromosomes of the groups 17, 18 and 21, 22 occurred with unexpected frequency. An abnormal group 17, 18 chromosome with deleted short arms was seen in one case of follicular lymphoma and two cases of Hodgkin’s disease. In one case of reticulum cell sarcoma the tumor cells showed chromosomal anomalies closely resembling those seen in normal cells infected with SV40 virus.—J. E. U.


Cases of malignant disease of the small bowel or mesenteric lymph nodes, presenting over a ten-year period, were reexamined with a view to determining by what criteria neoplasia might be suspected in cases of malabsorption in adults. Of 15 cases of abdominal lymphoma, 13 had unequivocal evidence of malabsorption (with changes in villus architecture in all but one of these 13). The degree of villus change could not be correlated with the degree of malabsorption, with the extent or cell type of tumour involvement, nor with the duration of symptoms before neoplasia was diagnosed. Features which should arouse suspicion appear to be pain, profound weight loss and anorexia. The onset of a coeliac syndrome in middle age clearly indicates the need to search diligently for a lymphoma. This may require exploratory laparotomy and a careful followup for several years when no certain pathogenesis is provided by the initial investigation.—J. E. U.


Corticosteroids were administered to 137 patients with lymphoma or chronic lymphocytic leukemia, for a total of 188 courses. Although no complete responses were seen, two thirds of the patients with chronic lymphocytic leukemia, lymphosarcoma and Hodgkin’s disease, and one third of reticulum-cell sarcoma patients obtained objective benefit. Good responses were noted in 44 per cent of patients with chronic lymphocytic leukemia, 42 per cent of those with lymphosarcoma, 28 per cent with Hodgkin’s disease and 18 per cent of reticulum-cell sarcoma patients. The responses included definite tumor shrinkage in all disease categories. Responsiveness was well
maintained during successive treatments. Corticosteroid therapy was particularly useful in the presence of hematologic depression that precluded the use of other chemotherapeutic agents. Brevity of unmaintained remissions (median three months) and a significant rise in the incidence of fungal infections found at autopsy were definite disadvantages.—J. E. U.

CHRONIC RETICULO-LYMPHOCYTIC LEUKEMIA: RECLASSIFICATION OF "LEUKEMIC RETICULO-ENDOTHELIOYSIS" THROUGH FUNCTIONAL CHARACTERIZATION OF THE CIRCULATING MONONUCLEAR CELLS. A. D. Rubin, S. D. Douglas, L. N. Chessin, P. R. Glade and W. Dameshek. From the Departments of Medicine (Hematology) of the Mount Sinai Hospital and School of Medicine, New York, N.Y.; the Department of Medicine, University of California, San Francisco, Calif.; and the Clinical Investigations Branch of the National Institute of Arthritis and Infectious Diseases, Bethesda, Md. Amer. J. Med. 47:149-162, 1969.

The authors have investigated cytologic, functional and ultrastructural features of the abnormal mononuclear cells in so-called "leukemic reticuloendotheliosis." They found that these cells exhibited structural and physiologic profiles characteristic of the lymphocytic cell series. Ultrastructurally, nuclear and cytoplasmic properties were consistent with lymphocytic classification; fibrillar structures were also observed. The "leukemic reticuloendotheliosis" cells failed to adhere to fiber columns and did not phagocytize bacteria. Polyclonal immunoglobulin synthesis was demonstrated in these cells by multiphase zone electrophoresis and on polyacrylamide gels. Furthermore, a biphasic response to PHA was demonstrated in the abnormal cell population. This consisted of a normal reacting population and a late reacting population, and was similar to that described in splenic lymphocytic lymphosarcoma. From these observations, the authors suggest that this entity be designated "chronic reticulo-lymphocytic leukemia." Abstractor's Comment: This cell classification, which appears thoroughly justified from the data presented, illustrates the use of broad perspectives of morphologic and physiologic relationships in resolution of cell-type quandaries.—P. F.


The authors found a weak, but statistically valid, positive linear correlation between the intensity of solar activity expressed in mean monthly numbers of Wolff, and the incidence of leukemia expressed by a monthly index of frequency of first hospitalizations of leukemia cases in relation to 100,000 inhabitants. The strength of this correlation increases slightly when the 12-month values of the effects of solar activity are taken into account.—M. K.

RESULTS OF TREATMENT AND SURVIVAL TIME IN CHRONIC GRANULOCYTIC LEUKEMIA. J. Pawlowski. From the Second Department of Internal Medicine, School of Medicine, Łódź, Poland. Przegl. Lek. 25:305-309, 1969.

Sixty patients (31 women and 29 men) with chronic granulocytic leukemia were observed. The average survival from the time of diagnosis was 38.8 months. The survival was longer in women (41.5 months) than in men (36.1 months). Significant differences in average survival time depending on blood group were noted: A,Rh+ (15 patients) 33.3 months; B,Rh+ (17 cases) 43.6 months; O,Rh+ (17 cases) 40.4 months. The survival did not correlate with the early increase of the leukocyte count and the degree of the anemia. On the other hand, patients with enlarged lymph nodes and pronounced splenomegaly showed significantly lower survival time than the average for the whole group. Repeated courses of Myleran are, in the author's opinion, the most successful therapeutic procedure, giving better results than the continuous intake.—M. K.

In six cases of anemia associated with osteomyelosclerosis the kinetics of $^{59}$Fe and the erythrokinetics of $^{51}$Cr were investigated. Anemia was due mainly to increased hemolysis and ineffective erythropoiesis. Measurements of surface $^{59}$Fe radioactivity over the liver and spleen showed that erythropoiesis occurred in all cases in the spleen, and in three cases foci of erythropoiesis were found in the liver too. Low activities in surface measurements over the sacrum confirmed the morphological evidence of hypoplasia or aplasia of the bone marrow.—M. K.

HEMOSTASIS


Human chorion cells were homogenized and separated by differential centrifugation into nuclear, mitochondrial, microsomal and soluble fractions. The homogenate and cell fractions produced zones of lysis on bovine plasminogen-containing fibrin plates in the presence of streptokinase. No lysis was produced in the absence of streptokinase or on plasminogen-free plates. The greatest activity was produced by the microsomal fraction. The authors interpret their results as indicating the presence of tissue proactivator, but not activator in chorion cells.—A. L. B.


Digital compression of the stomach at laparotomy resulted in plasminlike activity in peripheral venous blood and progressive shortening of euglobulin lysis times. Plasminlike activity was also found in gastric venous blood and was relatively high in subjects with gastric ulcers. Evidence was obtained that the fibrinolytic activity was due to plasmin and not to peptic or tryptic activity, but details of this evidence are to be reported separately. The results suggest that the stomach may be a source of fibrinolytic activity and that this may be related to peptic ulceration and gastric bleeding.—A. L. B.


The method of platelet labeling and the determination of their life span and site of destruction is described. These examinations have contributed to the elucidation of the pathomechanism of thrombocytopenia. The importance of this examination in the judgment of splenectomy was shown in eight patients. Determination of the platelet life span and localization of the site of destruction provide more accurate information on the individual cases of thrombocytopenia.—S. R. H.

IMMUNOHEMATOLOGY


In mice, treatment with lethal doses of the cytotoxic drug dimethyl-myleran produced bone-marrow aplasia but insufficient immunosuppression to allow successful allogeneic bone-marrow transplantation. Treatment with antilymphocytic serum (ALS), however, provided a desired degree of immunosuppression sufficient to secure tolerance towards the graft. With ALS and cytotoxic drugs used in concert, the immunosuppressive and cytotoxic components were dissociated and more readily controlled. Red-cell chimerism could be induced by the combination of ALS with nonlethal doses of the cytotoxic agent. The authors also mention the therapeutic possibility of using ALS, presumably with marrow transplant, to counteract the fatal effects of lethal doses of cytotoxic agents in cancer chemotherapy.—A. L. B.

Sera from patients with acute hepatitis gave precipitin lines in a two-dimensional immunodiffusion system against sera from certain multitransfused patients. The latter were thought to contain an antibody against an antigen—the hepatitis antigen—which may be related to the hepatitis virus. The antigen was detected in 80 per cent of patients with infective or serum hepatitis during the first 12 days of illness and generally disappeared within a month. The antigen was also found in eight of 1726 apparently healthy blood donors. Three of six surviving recipients developed clinical hepatitis. None of 30 recipients of 238 units of negative donor blood developed hepatitis. The authors discuss the relationship of hepatitis antigen to Australia and St antigens reported by other workers, and consider that differences in incidence may be of considerable epidemiological and pathological importance. Detection of hepatitis antigen in potential blood donors could also be of considerable importance.—A. L. B.


In some patients with cancer, extracts of autologous tumor can provoke lymphocyte transformation in the in vitro system. The author quantitated the degree of stimulation of lymphocytes by measuring tritiated thymidine uptake. Of 56 patients studied, seven patients showed significant increase in thymidine incorporation over the control values when their lymphocytes were incubated with autologous tumor extracts. In one instance, a patient whose lymphocytes exhibited a response to autologous tumor had spontaneous regression of her melanoma. The author suggests that the in vitro technique reflects lymphocyte hypersensitivity to autologous tumor, and might have prognostic significance.—P. F.


Treatment of C3H mice with complete Freund adjuvant or azocasein results in diminished response of splenic lymphocytes to PHA in vitro. The data suggest that azocasein, which has mitogenic properties, activates potentially PHA responsive (thymic dependent) cells in vivo. The authors suggest that the pathogenesis of amyloidosis, which occurs with abnormal frequency in immunologically deficient hosts, might be dependent upon deficiency of thymic cell function.—P. F.


The presence of antibodies against red cells was examined in patients in whom a cardiopulmonary bypass was used. In the first group, 237 patients were examined a long time after the bypass operation. Anti-red-cell antibodies were found in 2.37 per cent (five patients). The second group of 50 patients was examined immediately after the operation. The antibodies were found in three (6 per cent). The entire group of 287 patients had anti-red cell antibodies in 2.8 per cent, which is considered a higher incidence of sensitization than after the usual transfusion.—L. D.
ABSTRACTS

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