the cats shows the effect of DPH on the clotting factors reversible with Vit. K, prenatal treatment of mothers on DPH with Vit. K may be indicated.

Antihemophilic globulin (AHG) response to exercise for the detection of hemophilia A carriers. KOON-HUNG LUKE, ALAN TAYLOR, JACK HIRSH, and ALVIN ZIPURSKY. *McMaster Univ. and St. Joseph's Hosp., Hamilton, Ont., Canada.*

Plasma antihemophilic globulin (AHG) activity normally increases after vigorous exercise. Eleven normal women and nine mothers of patients with hemophilia A were studied before and immediately after a 10 minute, standardized and strenuous exercise load. In the normal group pre-exercise AHG levels ranged from 48–112% with a mean of 88%; after exercise the mean value was 168% with a range of 100–400%. In the hemophilic carriers the mean pre-exercise level was 49% with a range of 27–79%; after exercise the mean value was 68% with a range of 50–100%.

In 10/11 controls post-exercise AHG levels exceeded 120% whereas in 8/9 carriers the post-exercise levels were less than 80%. Three carriers had AHG levels in the normal range, 66%, 69% and 79%; following exercise values found were 78%, 68% and 100% respectively. Three controls had similar pre-exercise levels of 78%, 78% and 48%; however, following exercise these rose to 128%, 128% and 180% respectively, values significantly greater than the carrier group.

These data suggest that the mothers of patients with hemophilia A have a limited AHG response to exercise, a finding which may be of value in the detection of the hemophilia A carrier state.

Paradoxic changes in chronic intravascular coagulation. H. A. COOPER, C. A. OWEN, JR., P. DIDISHEIM, and E. J. W. BOWIE (Intr. by Gunnar B. Stickler). *Mayo Clinic and Mayo Foundation, Rochester, Minn.*

Paradoxic changes in platelet and fibrinogen levels were found in chronic intravascular coagulation induced in dogs. After pre-experiment base-line values were obtained with saline alone, thromboplastin (acetone-dried dog-brain emulsion in saline, clarified by centrifugation) was given by continuous intravenous infusion at 2.5 ml/hr for 5 to 7 days. With undiluted thromboplastin, fibrinogen and platelet levels steadily fell and then stabilized at 50–100 mg/100 ml of plasma for fibrinogen and 5–10 $\times$ $10^3/mm^3$ for platelets. Fibrinogen decreased more rapidly than platelets. Infusion of a 10-fold dilution of thromboplastin paradoxically increased fibrinogen to 550–650 mg/100 ml but with contemporaneous decrease of platelets to 20–40 $\times$ $10^3/mm^3$. With 100-fold dilution of thromboplastin the fibrinogen also increased, to more than 500 mg/100 ml, while the platelets remained in the normal range. Whenever the thromboplastin infusion was stopped, platelets and fibrinogen levels increased, exceeding the preinfusion level and remaining high for 2 to 3 weeks. These data suggest that, in chronic intravascular coagulation in the dog, the liver is better able to compensate in the synthesis of fibrinogen than the marrow can in the synthesis of platelets. When intravascular coagulation is not too profound, fibrinogen or platelets may be normal or increased, as we have found in some patients who had evidence of intravascular coagulation without hypofibrinogenemia and thrombocytopenia.

Platelet transfusion as a diagnostic and therapeutic aid in the newborn. FRANCES M. GILL and ELIAS SCHWARTZ (Intr. by Robert L. Brent). *Jefferson Med. Coll., Cardeza Found., Philadelphia, Pa.*

Although platelet transfusions are commonly given to children and adults as treatment for bleeding due to thrombocytopenia, their use as a diagnostic tool in newborn infants is infrequent. We have infused platelets into 4 infants with marked thrombocytopenia at birth in an attempt to obtain information of diagnostic value and to prevent or treat bleeding. Platelets were obtained from a liter of whole blood by plasmapheresis of a single donor. The platelets were infused in a small volume of plasma and peripheral counts were monitored.

An infant with cytomegalic inclusion disease and one with absent radii had only rare marrow megakaryocytes. In both there was an excellent response to platelet transfusions with normal platelet survival. Two other infants with numerous megakaryocytes on bone marrow examination did not respond to random donor platelets. The mother of one child was subsequently found to have chronic idiopathic thrombocytopenia, presumably causing the observed random platelet destruction in her infant. In the other child maternal platelets produced an excellent response, while paternal platelets did not, indicating specific immune destruction.

Platelet transfusions are of value in differentiating peripheral destruction from decreased production in the newborn. In addition, platelet transfusions may be used safely at this age to treat and prevent life-threatening hemorrhage.

Thrombocytopenia in murine cytomegalovirus infection. JUNE E. OSBORN and NASROLLAH T. SHAHIDI. *Univ. of Wisconsin Med. Sch., Madison, Wis.*

The pathogenesis of cytomegalovirus-induced thrombocytopenia in neonatal cytomegalic inclusion disease is obscure, and the phenomenon has not previously been described in cytomegalovirus infections of other species. In these studies, 4-week-old female HA-ICR mice were infected i.p. with $10^{5.0}$ plaque-forming units of murine cytomegalovirus (MCMV) and their hemograms were serially determined over the succeeding 14 days. Mice infected similarly were sacrificed on appropriate days for histopathologic and fluorescent microscopic study of their spleens. Significant thrombocytopenia occurred uniformly on the 4th day of infection. This was correlated with distinctive histopathologic changes in megakaryocytes which included decrease in ratio of cytoplasm to nucleus, vacuolization of the nucleus, and appearance of markedly basophilic megakaryocytes suggesting increased turnover. Direct immunofluorescent staining for MCMV antigen, using hyperimmune anti-MCMV mouse serum, revealed positive megakaryocytic intranuclear fluorescence on days 4 and 5 of infection. These pathologic alterations gradually reverted to normal between days 7 and 14, concomitant with a return to normal control levels of circulating platelets. MCMV-induced megakaryocyte destruction is suggested as a useful model for exploration of the pathogenesis of human virus-induced thrombocytopenia.

Age lability of normal and variant methemoglobin reductase. STEPHEN A. FEIG, DAVID G. NATHAN, and HAROLD A. ZARKOWSKY. *Children's Hosp. Med. Ctr. and Harvard Med. Sch., Boston, Mass.*