

stained positive for Bcl-2, regardless of histologic grade. Similar Bax and Bcl-x protein expression was observed in both HGG and LGG. However 3/5 GBM showed significant p53 expression, possibly indicative of p53 mutation associated with protection from therapy-induced apoptosis in this subset. Analysis of relative apoptotic gene protein expression, and p53 mutation status in larger numbers of pediatric HGG and LGG is warranted.

#662 Tissue factor expression in a transgenic mouse model of sickle cell disease

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In view of the excessive hemostatic activation, fibrin formation, and thrombosis known to occur in sickle cell disease, we investigated the role of tissue factor (TF) in this disorder. TF, a transmembrane glycoprotein, is the major cellular initiator of blood clotting. We utilized transgenic mice producing hemoglobin SAD(2 human (2SAD) and normal litter mate controls for our experiments. Histologic studies of SAD mice have revealed organ damage and areas of thrombosis similar to that seen in human sickle cell disease. *In situ* hybridization, using a 33P labeled mouse TF riboprobe, was performed on several mouse organs to assess the level and sites of synthesis of TF mRNA. Immunohistochemical staining of serial sections elucidated TF protein production. Experimental and control mice were investigated in steady state. When compared with control mice, TF mRNA expression was increased in kidney tubules of SAD mice but decreased in pulmonary bronchioles. Some SAD mice showed increased mRNA production in alveolar septae. TF protein patterns mimicked mRNA in the kidney but were equivocal in the lung. There was no evidence for the induction of endothelial or monocytic TF in the kidney, lung or brain. Mice in a hypoxic environment were studied in order to explore whether acute induction of intracellular hemoglobin polymerization would affect TF expression in surrounding tissues. There were no apparent differences in the degree of altered expression in the organs of acutely deoxygenated SAD animals when compared with steady state SAD mice. Taken together, these results suggest that increased TF production may be related to hemostatic abnormalities that accompany chronic tissue damage in sickle cell disease. In addition, they may imply an alternative role for TF, particularly in cells of epithelial origin.

#663 Severe iron deficiency anemia (IDA) at the end of the 20th century

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Current literature suggests that the prevalence of iron-deficiency anemia among infants and children in the United

States is low due to improved nutritional status. A retrospective analysis was conducted in order to determine the prevalence and outcome of young children evaluated at a tertiary care referral center. Only patients with severe anemia defined as hemoglobin level of ≤ 7.5 gm/dl were included in this study. Between 1989 and 1993, seventy-four children met all the criteria for severe IDA. 33% were Caucasian, 33% Hispanic, 15% African-American, and 15% Oriental. Peak incidence was noted at 6-24 months of age, with half being diagnosed in 2nd year of life. In families of more than one child, the youngest was afflicted in 90% of the times. 48% of the population was on a federally-funded health coverage and 24% were not fully immunized. Nutritional causes were responsible for 88% of the cases, the majority being related to heavy cow's milk intake at an early phase during infancy. Almost half were diagnosed because of pallor and lethargy, whereas the rest were seen for a rather unrelated intercurrent vital illness, typically in the context of an emergency room set-up. Cardiovascular involvement consisted of presence of murmurs in 45% and chest x-ray findings of cardiomegaly in 38%. 3 out of 4 patients were admitted to the hospital, some to an intensive care unit, with an average cost of \$4300 per admission. The hemoglobin level was < 2 gm/dl in 2 pts, 2-3 in 5 pts, 3-4 in 16 pts and 4-5 in 13 pts. Transfusion of packed RBC's was required in 32% of all patients and 87% of those with hemoglobin level below 4 gm/dl. 50% were lost to follow up and 10% were still anemic at the time of their last visit. In summary, iron-deficiency anemia of nutritional origin remains a significant public health problem, affecting all ethnic backgrounds and socioeconomic classes. The magnitude of the anemia is such that inpatient admissions and need for blood products are so frequent. The ultimate recovery of these patients is severely hampered by the lack of compliance.

#664 The assessment of platelet function in thrombocytopenia using the Platelet Function Analyzer (PFA-100®)

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Assessment of platelet function in thrombocytopenia is difficult. It is usually assumed that at a specific platelet count (i.e. 50 or $20 \times 10^9/l$) the risk of bleeding increases such that therapy is warranted. The bleeding time is an unreliable test of platelet function in thrombocytopenia. The PFA-100 has been developed to measure platelet function in citrated whole blood *in vitro*. Anticoagulated blood samples are aspirated under high shear flow conditions through an aperture in a membrane coated with collagen and either epinephrine (Col/Epi) or adenosine 5-diphosphate (Col/ADP). The time taken to form a platelet plug that occludes the aperture (the closure time; CT) is a measure of overall platelet function. Currently only an aperture of $150 \mu m$ is available. With this