858 PLATELET FUNCTION IN PREMATURE INFANTS WITH INTRAVENTRICULAR HEMORRHAGE, James T. Courtney, Harold W. Kolni, Jody R. Gross, (Spon. by Reba M. Hill). Baylor College of Medicine, Department of Pediatrics, Houston.

Platelet dysfunction in the pathogenesis of intraventricular hemorrhage (IVH) is controversial. Platelet function testing using platelet rich plasma (PRP) was performed on 56 premature infants (26-32 weeks gestational age, mean birth weight 1156 gm) using aggregometry and a viscoelastic method. The Sonoclot® measures viscoelastic changes in plasma after recalcification; PRP has a characteristic Sonoclot® curve consisting of a lag time, primary wave, shoulder, secondary wave and downward tertiary wave. The secondary and tertiary waves reflect platelet incorporation into the clot and clot retraction. Normal adult PRP Sonoclot® values for the lag time, slopes and shoulder to peak (S-P) interval have been reported.

Of the infants studied, 22 (39%) had some degree of IVH by ultrasonography. Platelet function as maximal aggregation of PRP (5μM ADP) in these infants did not differ significantly from that of 34 infants without IVH ($\bar{x}$±SEM): IVH=52.8%±4.7 vs no IVH=52.0%±3.8 on day one and IVH=42.7%±4.7 vs no IVH=48.5%±3.4 on day three. Sonoclot® values on day one were ($\bar{x}$±SEM):

		Time Intervals(min)		Slopes (cm/min)	
Group	n	Lag	S-P	1° Wave	2° Wave
IVH	22	5.0±0.5	2.2±0.5	6.1±1.0	5.8±0.7
No IVH	34	5.9±0.6	2.2±0.2	5.3±0.7	5.6±1.1

The groups did not significantly differ in any Sonoclot parameter and all of the mean values in both groups were similar to reported normal adult values.

859 MEMBRANE LIPID FLUIDITY AND FILTERABILITY OF HUMAN RBC'S FROM ADULTS & NEWBORNS. L. M. Crespo, E. M. Bifano, and J. C. Freedman. Depts. of Pharm., Peds., Physiology, SUNY, Upstate Med. Ctr., Syracuse, NY.Spon.M.Williams

Red Blood Cells (RBC's) of human newborns have a number of different characteristics from those of adults. In order to increase understanding of these differences, membrane lipid fluidity (MLF) as indicated by the fluorescence polarization of diphenylhexatriene (DPH) and filterability(F) as a gross measure of cell deformability were compared in the presence and absence of calcium. DPH fluorescence polarization in fresh intact cells from adults was 0.282±.011(S.D.n=14), significantly less than 0.327±0.010(S.D.,n=7) in newborns. While quantitative estimates from DPH fluorescence polarization are subject to uncertainties, the results suggest decreased fluidity in the hydrophobic core of red cell membranes of newborns. This is consistent with the greater proportion of saturated fatty acids in RBC membranes from newborns.

Treating RBC's from adults with 1μM Ca ionophore A23187 at 5 mM$CaCl_2$, decreases F by 49±12%(S.D.,n=4). In contrast MLF of RBC's is unchanged with 1μM A23187 and 5 mM$CaCl_2$. RBC's from newborns exhibit decreased F at 0 mM and 5 mMCa in comparison with RBC's from adults. Experiments with Ca demonstrate conditions under which F and MLF are independent and uncorrelated parameters. When Ca induces echinocytosis and decreases F it does so without causing bulk changes in the hydrophobic core of the membrane. Ca must exert its effects either on the polar lipid headgroups or on the cytoskeletal proteins.

860 FANCONI SYNDROME (FS) ASSOCIATED WITH CYCLOSPORIN-A ADMINISTRATION IN BONE MARROW TRANSPORT. Shermine Dabbagh, Russell W. Chesney, Aaron L. Friedman, Paul M. Sondel, Michael E. Trigg. University of Wisconsin Hospitals, Department of Pediatrics, Madison, Wisconsin.

Although hypertension and azotemia are recognized complications of cyclosporin-A (C) in renal and bone marrow transplants, generalized proximal tubulopathy, or the FS, is not a recognized consequence. An 8-year-old bone marrow transplant recipient receiving C at 3 mg/kg/24 hr developed glucosuria on day #7 and hypertension and azotemia (serum creatinine 2.3 mg/dl; creatinine clearance 60.9 ml/min/1.73 M^2) on day #14.

Serum	Na	K	HCO_3	Cl	Ca	PO_4	Uric Acid	Mg
	133	4.7	15.7	108	8.3	1.8	1.2	1.4
	mEq/L	mEq/L	mM/L	mEq/L	mg/dl	mg/dl	mg/dl	mg/dl

Urine	Glucose	Ca/Cr	%TRP	$TmPO_4/GFR$	FE UA	FE Mg
24-hr	0.44 g/24 h	0.225	41%	1.1	25%	30.6%
(nl)	<0.15	0.12	>85%	5.6	7-12%	<5%

The patient also had generalized aminoaciduria and required replacement therapy with Mg (38 mg/kg/24 hr), PO_4 (368 mg/kg), Ca (30 mg/kg), HCO_3 (1.5-2 mEq/kg), Na (3-4 mEq/kg) and K (3-4 mEq/kg) to correct serum chemistry abnormalities. After discontinuing C for 75 days, the azotemia and hypertension have reversed, but evidence for FS persists. Although FS may have resulted from acute renal failure associated with C therapy, the persistence of this generalized tubulopathy after reversal of azotemia makes acute renal failure-induced FS less likely.

861 QUANTITY OF CIRCULATING STEM CELLS IS PROPORTIONAL TO THE HEMATOPOIETIC ACTIVITY OF THE HOST. Abbas Emami, Susumu Inoue, Dept. of Pediatrics, Wayne State University Schl. of Medicine, Detroit, MI.

To test the hypothesis that the quantity of blood stem cells (CFU-C, BFU-E) reflects the total hematopoietic activity of the host, we assayed blood CFU-C and BFU-E in 5 groups of subjects: 1) normal children (ages 3 months-7 yrs.); 2) normal adults; 3) children with HbSS disease (ages 8-20 yrs.); 4) cord blood; and 5) children with severe aplastic anemia (AA) at diagnosis. 10^6 mononuclear cells separated from heparinized blood were cultured in methylcellulose with either fibroblast conditioned medium (source of CSA) or with 2 units of sheep erythropoietin. Results below are expressed as the number of day 12-15 colonies/ml of blood ± S.E.. (Figure in parenthesis indicates number of specimens cultured).

	normal children	normal adults
CFU-C	32.8 ± 8.7 (11)	11.6 ± 3.5 (6)
BFU-E	33.5 ± 6.5 (11)	51.3 ± 3.4 (3)

	HbSS	cord blood	AA
CFU-C	768 ± 256 (12)	1,979 ± 497 (5)	0 (6)
BFU-E	831 ± 294 (7)	not done	0.2 ± 0.2 (5)

The cord blood and blood from HbSS patients showed significantly increased number of both types of stem cells vs. normal children or adults ($p < 0.001$), while blood from AA patients failed to grow any colonies. The differences in the number of CFU-C and BFU-E between normal children and adults were not significant ($p > 0.1$ and $p > 0.2$ respectively). We conclude that the quantity of circulating stem cells is proportional to the overall hematopoietic activity of the host.

862 PROLONGED PERSISTENCE OF LEUKEMIA CELLS AFTER INTENSIVE CHEMOTHERAPY FOLLOWED BY COMPLETE REMISSION WITHOUT FURTHER INTERVENTION. James H. Feusner, [1]George Brecher and Barbara Beach. (Spon. by Bertram Lubin). Children's Hospital Med Ctr, Oakland, CA; [1]Donner Laboratory, Univ. Calif., Berkeley, CA.

The presence of substantial numbers of leukemic cells following completion of induction therapy for acute nonlymphocytic leukemia ordinarily indicates persistence of leukemia and is followed by complete relapse. We report 2 cases in which leukemic cells were present for 1-2 weeks after completion of induction therapy, yet complete remission was documented 7-12 days later without further induction treatment. They were treated with standard doses of Daunorubicin (Dnm) & Cytosine Arabinoside (Ara-C).

Pt	Age	Sex	Dx	Cytogen	DIC	Induction Therapy
1	11 yrs	M	APL	15-17 t	+	Dnm, Ara C x 2
2	21 mos	F	APL	15-17 t	-	Dnm, Ara C x 3

Several explanations are possible. The majority of leukemic cells may have been irreparably damaged by chemotherapy but were still able to go through several divisions, a type of bone marrow damage seen in experimental whole body irradiation. It is also possible that the therapy reduced the tumor load and the body managed to rid itself of a now manageable load of leukemic cells by some mechanism in response to the leukemia. The mode of action of this response could involve promotion of differentiation which has been shown both in established and fresh APL cell lines. We hope that investigations of cases such as ours can determine which of these mechanisms may pertain, since the implications for therapy would vary considerably.

† **863** INHIBITION OF TUMOR GROWTH BY DIETARY RESTRICTION OF SODIUM. Burton P. Fine, Thomas N. Denny, Nancy J. Lestrange and Thomas R. Walters, UMDNJ-New Jersey Medical School, Newark, N.J. (Spon. by O. Robert Levine)

Previous animal studies have shown that generalized malnutrition results in the inhibition of tumor growth. We have developed an animal model in which restriction of dietary sodium in growing animals results in retardation of normal protoplasmic growth. This study evaluates the growth of a solid tumor during dietary sodium restriction. Thirty 6 wk. BDF mice were injected subcutaneously with approximately 10^7 viable B_{16} melanoma cells as determined by trypan blue exclusion technique. A salt deficient diet (less than 3μeq Na/gm) was provided ad-libitum. The drinking solution for the control group was half normal saline and for the experimental group the solution was distilled water. The animals were sacrificed 24 days after the injection of the melanoma cells. Tumor size was determined by triplicate measurements of the X and Y axes of the tumor mass. The means of the X and Y were calculated and tumor mass determined by $\frac{Lx(W)^2}{2} \div 1000$.

	Control	Experimental	
Measurable tumors	12/15, p=.018	7/14, p=0.61	
Final tumor size (gms)			
X±SE	1.55±0.53	0.51±0.17	p<.05
Food intake (gms)	305±2.9	315±15.2	n.s.

The tumor growth tended to be exponential in the control group and linear in the experimental group. In this experimental model, restriction of dietary sodium decreased the initiation of tumor takes and inhibited the growth of the tumor.