† 1093 Transmission of Epstein-Barr Virus (EBV) by Transfusion of Blood. GR FLEISHER, Children's Hosp of Philadelphia, PA

EBV has been sporadically described as a cause of infectious mononucleosis (IM) following transfusion of blood (TOB) but systematic studies to establish the risk of EBV infection (inf), both silent and overt, from TOB have not been performed. We undertook a pilot study to ascertain whether children undergoing open heart surgery (OHS) requiring TOB developed EBV inf. 44 children, 3 mos-15 yrs (median 5 yrs), were enrolled and tested for EBV-specific antibodies at entry and 1,4,12,26, and 52-78 wks after surgery. 29(66%)/44 were seroneg; 3/29 (10%) died and 5(17%) have been lost to follow up. These seroneg children received 1-5 TOB (mean 3.65 units); 89% of the 106 units were seropos and each seroneg child was exposed to at least 1 seropos unit. Of the 21 seroneg (all followed >6 mos), 17(81%) remained susceptible and 4(19%) seroconverted, including a 15 y/o who developed IM and 3 children 6-18 mos old with asymptomatic inf. Two asymptomatic inf probably occurred 2-6 mos after surgery and the other >6 mos postoperatively. We conclude that children undergoing OHS are at risk of acquiring EBV from TOB as they are likely (a) to be susceptible and (b) to receive seropos blood (containing EBV-infected lymphocytes). Additionally, the detection of EBV inf in 4 children following OHS suggests a need for larger, controlled studies to determine whether the source of such postoperative infections is TOB.

† 1094 THE EFFECT OF BETAMETHASONE ON THE CHEMOTACTIC RESPONSE OF NEONATAL NEUTROPHILS. Michael M. Fuenfer, Charles J. Ingardia, John R. Raye, Charlotte F. Block, Peter J. Krause, Univ. of Conn. Health Ctr. and Hartford Hosp., Dept. of Pediatrics, Farmington, CT.

Antenatal maternal steroid administration has been widely used to accelerate fetal lung maturation. There is evidence that this therapy may be associated with an increased risk of infection in the neonate. Inhibition of multiple aspects of neutrophil (PMN) function by glucocorticoids has been widely documented in adults and children. Because the host defense system of the neonate is less than fully competent, further compromise of existing PMN function may be of major importance. We performed an in vitro study to determine the effect of betamethasone on the random migration (chemokinesis) and directed migration (chemotaxis) on neonatal PMN. A separated cell micropore filter assay was used to study the effect of betamethasone on PMN's obtained from cord blood of healthy term neonates. The addition of therapeutic concentrations of betamethasone (1.0 µgm/100 ml) resulted in a significant inhibition in PMN chemokinesis and chemotaxis.

	CHEMOKINESIS		CHEMOTAXIS	
	Control	Betamethasone	Control	Betamethasone
Mean Migration (µm)	54.9±1.60	43.7±13.8	86.8±15.0	56.9±16.8
Inhibition (%)		20.2±8.7		29.4±13.5
n = 15		p <0.001		p <0.001

Betamethasone inhibition of PMN motility, if present in vivo may lead to a clinically significant susceptability to perinatal bacterial infection.

1095 COXSACKIEVIRUSES GROUP B ANTIBODIES IN THE VENTRICULAR CEREBROSPINAL FLUID OF INFANTS WITH SEVERE ANATOMICAL DEFECTS IN THE CENTRAL NERVOUS SYSTEM. Charles J. Gauntt, Richard J. Gudvangen, Yves W. Brans and Arthur E. Marlin. The Univ of TX Health Science Ctr at San Antonio, Depts of Pediatrics and Microbiology, San Antonio, TX.

Coxsackieviruses group B (CVB) are ubiquitous viruses which rarely may be involved in congenital diseases and are known to cause central nervous system infections. We set out to determine whether the CVB might be associated with severe congenital anatomical defects in the central nervous system (CNS), mainly congenital hydrocephalus, in infants. Ventricular cerebrospinal fluids from 4 of 28 newborn infants presenting with severe problems of the CNS contained neutralizing antibody to at least one serotype of the CVB. Two of the 4 infants with anti-CVB antibody in the ventricular fluid did not have a detectable level of the same antibody(ies) in their serum. Hydranencephaly was diagnosed in 2 of these same 4 infants. The ventricular fluid of one of the infants had IgM neutralizing antibody directed against coxsackievirus B6. Of 11 mother/infant pairs which had neutralizing antibody to CVB in both sera, almost half had antibodies directed against more than one serotype. Neutralizing antibodies to all 6 serotypes except coxsackievirus B5 were found. Isolation of a virus from the ventricular cerebrospinal fluids was unsuccessful. These data suggest the possibility of an association between congenital infections with the CVB and severe CNS defects.

●1096 ISOLATION OF THE ETIOLOGIC AGENT OF CAT SCRATCH DISEASE (CSD). Michael A. Gerber, Ann K. Sedgwick, Mark Ballow, Richard C. Tilton, Departments of Pediatrics and Laboratory Medicine, Univ of Conn, Farmington

Attempts were made to culture the etiologic agent of CSD using lymph node specimens from patients with clinical evidence of CSD and the presence of typical organisms on Warthin-Starry stains of lymph node sections. One lymph node grew 2 identical colonies on a glucose-peptone-yeast-soil extract agar plate which had been incubated at room temperature for 10 days. Gram stains of this isolate revealed gram-positive to gram-variable pleomorphic rods similar to the forms seen in the Warthin-Starry stains of lymph node sections. Transmission electron micrographs (EM) of the isolate revealed all of the morphologic forms identified by light microscopy as well as all of the morphologic forms seen on EM of lymph node sections from 2 patients with CSD. The EM of the isolate demonstrated a cell wall structure consistent with a gram-positive organism, while the EM of the lymph node sections demonstrated organisms lacking a cell wall. This apparent loss of the cell wall in vivo may explain earlier descriptions of this organism as gram-negative or gram-variable on tissue Gram stains. This isolate morphologically and biochemically resembles an organism first isolated approximately 50 years ago from cases of the Parinaud's syndrome form of CSD. Preliminary studies have demonstrated the ability of this isolate to produce granulomatous lesions in mice and a cell-mediated immune response in guinea pigs. Work is in progress to further define the characteristics and pathogenicity of this organism.

1097 THE EFFECTIVENESS OF TWICE DAILY PENICILLIN V (PENV) IN THE TREATMENT OF GROUP A BETA-HEMOLYTIC STREPTOCOCCAL (GABHS) PHARYNGITIS. Michael A. Gerber, Linda J. Spadaccini, Edward L. Kaplan. Departments of Pediatrics, Univ of Conn, Farmington and Univ of Minn, Minneapolis

Most children with GABHS pharyngitis are treated with oral penicillin given either 3 or 4 times a day. In order to determine if a twice daily regimen would be as effective, 99 children with acute pharyngitis and a positive throat culture for GABHS were randomized to receive either 250 mg of penV t.i.d. or 250 mg of penV b.i.d. for 10 days. Compliance was checked by analyzing urine specimens for antimicrobial activity. Two weeks after completing therapy, patients returned for a follow-up throat culture. Acute and convalescent streptococcal serology were obtained on all patients. There was no difference between the two treatment groups with respect to age, sex, race, duration of illness prior to therapy, clinical findings, compliance, or percentage of children with an antibody rise. Nine of the 50 (18%) patients who received the t.i.d. regimen and 14 of the 49 (29%) patients who received the b.i.d. regimen had the same strain of GABHS (as determined by M- and T-typing) isolated from their follow-up as from their initial throat culture and were considered penicillin treatment failures ($p > 0.2$). One of the 9 (22%) treatment failures in the t.i.d. group and 5 of the 14 (36%) treatment failures in the b.i.d. group were symptomatic at the time of their follow-up visits. Oral penV given twice a day appears as effective in the treatment of GABHS pharyngitis as penV given three times a day and is more convenient especially for children attending school.

† 1098 DETERMINANTS OF IMMUNITY TO VARICELLA. A. Gershon, S.P.Steinberg, & NIAID Varicella Vaccine Collab. Study Group. New York Univ. Med. Ctr., NY, & NIAID.

There have been 18 breakthrough cases of mild varicella in 240 luekemic recipients of live attenuated OKA varicella vaccine in studies over the past 4 years. To determine why most vaccinees have been protected from illness after exposure but some have not, we analyzed immune responses to varicella-zoster virus (VZV) in: 1)6 normals, years after natural infection, 2)41 vaccinees before immunization, 3)23 vaccinees protected from varicella after household exposure, & 4)18 vaccinees who developed varicella. VZV antibody was measured by fluorescent antibody to membrane antigen (FAMA) & cellular immunity (CMI) by lymphocyte stimulation to VZV antigen, expressed as a stimulation index (SI).

Results:

	(1)	(2)	(3)		(4) mild varicella n=18	
	normal varicella immune n=6	pre-vaccine n=41	protected n=23 post-vaccine	protected n=23 near exposure	post-vaccine	near exposure
FAMA Geometric Mean Titer	16	<2	10.2	8.2	3.2	2.8
Mean VZ SI	20±14	2.5±.05	32±7	17±4	20±9	11±4

These data indicate that in general, the higher the VZ antibody titer the better the protection against varicella. Vaccinees with a breakthrough illness, however, have partial immunity that appears to protect them from severe disease.