●1171 COMBINED MEASLES-MUMPS-RUBELLA-VARICELLA (MMRV) VACCINE IN CHILDREN. Jean Taylor-Wiedeman, Valerio M. Novelli, Philip A. Brunell, Karen Earle, and John Connolly. Department of Pediatrics, U.T. Health Science Center, San Antonio,Texas

Availability of an effective measles mumps and rubella vaccine containing varicella vaccine (MMRV) would facilitate the immunization of children against varicella decreasing the chance of contracting the disease in adult life. The seroconversion rate and clinical reactions are being evaluated in 15 month old children who have been given MMRV. An enzyme-linked immunosorbent assay (ELISA) was used to assess antibody responses to the four viral antigens and to select susceptible participants. Clinical data was collected from parent questionaires recorded for a period of 4 weeks after vaccination. Thusfar, seroconversion was observed in 24/24 children (100%) for both measles and mumps; 23/24 (95.8%) seroconverted for both rubella and varicella. Adverse reactions included fever in 6 patients (25%), occurring between day 5-10 post vaccination; rash in 4 patients (20%) between day 4-12, mainly maculo-papular without vesicles; and irritability in another 3 patients (12.5%) between days 2-8. One child had a local reaction (wheal), immediately following vaccination and lasting a few hours. Examination of this initial group of MMRV recipients indicated that combination of 4 live attenuated viral antigens does not compromise immunogenicity or increase reactions when compared to monovalent varicella vaccine or combined MMR vaccine. A combined MMRV vaccine may prove to be a signficant addition to childhood vaccination programs.

1172 IDIOPATHIC RECURRENT PERICARDITIS:TREATMENT WITH CHRONIC ADMINISTRATION OF IMMUNOSUPPRESSIVE AGENTS AND ASPIRIN. Basil Thanopoulos, Konstantin Frimas and Nicholas Beratis. University of Patras, Medical School, Dept. Pediatrics, Greece.

Idiopathic recurrent pericarditis(IRP) is characterized by resistant to therapy recurrences.We have studied the effect of chronic treatment with azathioprine and aspirin (A) on 6 patients(pt) 10-15 yr old,with severe (more than 3 relapses per yr) IRP. Antibody studies showed recent infection with Coxsakie B4 in 2 pt. No collagen disorder was found.All pt developed pericardial pain, cardiomegaly, EEG and echocardiographic abnormalities of pericarditis 1 to 3 mo after discontinuation of a 3 to 8 wk treatment with corticosteroids or A (5 pt) and A or indomethacin (1 pt). In two pt reduction of the dose of prednisone below 5 mg x 2/day resulted in recurrence of pericarditis. Administration of azathioprine (1-2 mg/kg/day)(2 pt) or A (starting dose 100 mg/kg/24hr, maintenance 70-80 mg/kg/24hr) for at least 6 mo (4 pt) resulted in disappearance of relapses till today (observation 1-6 yr). The findings indicate that: (1) the recurrences of IRP can be prevented by chronic administration of A; (2) azathioprine may be useful as an alternate drug for pt who may fail on A; (3) corticosteroids suppress the symptoms but even if chronically administerd do not prevent recurrences; and (4) the relapses of IRP result from an autoimmune mechanism, rather than from recurrences of viral infections.

1173 POTENTIAL INFLUENCE OF FOCAL INFECTION CONDITIONS ON THE PATHOGENESIS OF TOXIC SHOCK SYNDROME. James K. Todd, Amalia Franco-Buff, David W. Lawellin. Departments of Pediatrics and Microbiology/Immunology, University of Colorado School of Medicine, and C.H. Kempe Center for Investigative Pediatrics, Departments of Pediatrics and Pathology, The Children's Hospital; Denver, CO.

Epidemiologically, patients with toxic shock syndrome (TSS) often have focal infections (abscess, menstrual), the conditions of which may play a role in inducing particular S. aureus strains to cause disease. Individuals colonized (e.g. nasopharynx) with these same strains may develop immunity without developing disease. Three children with TSS and definite non-menstrual focal infections (abscess, empyema, septic arthritis) were studied. Samples from their foci demonstrated: pH 6.75-6.82, pCO_2 46-51 torr, pO_2 63-123 torr, Toxic Shock Toxin-I (TSST-I) 4-53 ng/ml, protease activity .10-.24 units, and grew S. aureus. The isolated S. aureus strains each had a typical TSS phenotype (protease+, TSST-I+) which was optimally expressed in vitro (extracellular protein excretion, TSST-I production, protease activity) when grown under conditions similar to those documented in vivo (4-8% CO_2, pH 7.0, 21% O_2). Increased glucose levels and decreased pCO_2 resulted in decreased production of TSS markers without any change in quantitative organism growth. Anaerobic conditions, often assumed to be present in abscesses but not found in our patients, are also known to decrease TSST-I production in vitro. The unique in vivo focal conditions found in our TSS patients have in vitro correlates which may play an important role in the expression of organism phenotype and pathogenesis of TSS.

1174 HOST DETERMINANTS OF TOXIC SHOCK SYNDROME AND SCALDED SKIN SYNDROME IN CHILDREN AND ADOLESCENTS. James K. Todd, Barbara H. Todd. C.H. Kempe Center for Investigative Pediatrics, Depts. of Pediatrics and Pathology, The Children's Hospital, and Depts. of Pediatrics and Microbiology/Immunology, University of Colorado School of Medicine, Denver, Colorado.

Staphylococcal scalded skin syndrome (SSSS) and toxic shock syndrome (TSS) appear to be toxin mediated diseases caused by different strains of S. aureus. We reviewed all cases of TSS (defined by the collaborative strict case definition) and SSSS (acute fever, painful erythroderma, positive Nikolsky sign) at The Children's Hospital of Denver for the years 1979-84. Of the 16 TSS cases, 13 (81%) were female compared to a balanced distribution of 5 (50%) of 10 hospitalized SSSS cases (p=0.22). The mean age was significantly greater (p=0.0007) for TSS compared to SSSS females (13.8±5.8 vs 2.4±2.5 years) but not males (7.1± 0.8 vs 3.6±4.2 years). The likelihood of a potential focus of sequestered infection (vagina, abscess) was significantly greater (p=0.0003) in the TSS group. All 10 postmenarchal females with TSS were menstruating, grew S. aureus from vaginal cultures, and were using tampons at the time of clinical onset. Of the remaining 6 TSS patients (3 female), 4 had distinct loci of infection (bacteremia, cervical abscess, wound abscess, cervical adenitis) compared to only 1 (bacteremia) of 10 SSSS patients (p=0.07). These clinical differences suggest that S. aureus strains capable of causing TSS may require different host potentiating conditions than SSSS strains (focal infection vs nasopharyngeal colonization) to cause disease.

1175 ENHANCED SURVIVAL OF INFANT RATS WITH OVERWHELMING HAEMOPHILUS INFLUENZAE TYPE B (Hib) SEPSIS BY POLYMYXIN B (PB) - ENDOTOXIN (ETX) INTERACTION. Juan N. Waltersplel, Sheldon L. Kaplan, Edward O. Mason, Baylor Col.Med., Texas Childrens Hosp. Dept Pediatrics, Houston, Texas

5-6 day old Sprague-Dawley rats were infected ip with 10^5-10^6 cfu of Hib strain Eagan. Ampicillin (Amp) (0.5 mg/kg x 3 q3hrs) given 3 hrs after infection was curative in all animals, but failed to have any effect upon survival if initiated 12 hrs later, even at a 500 mg/kg dose (47 and 45 animals, 19 controls). At this 12 hour stage an ineffective antimicrobial dose of PB (.0125mg/kg x 3 q3hrs) alone (n=33) or in combination with 500 mg/kg Amp (n=27) achieved a significant increase in survival at 17 hrs ($p<.008$) and 20 hrs ($p<.006$) and in combination at 36 hrs ($p<.009$) after infection. Bacterial quantitation by plate dilution and ETX activity in whole blood by a chromogenic limulus lysate assay were performed simultaneously at 30 and 300 minutes after initiation of treatment and in controls. Amp significantly reduced bacterial counts in survivors at both times ($p<.025$ and $p<.004$)compared to controls or PB treated animals but increased the activity of free endotoxin at 30 minutes ($p<.004$) compared to untreated controls. At all times Amp treated animals had greater ETX activity/cfu ($p<.006$ and $p<.005$) when compared to surviving control or PB treated animals (50 animals). In vitro ETX release from Hib grown in broth was increased after addition of 100 µg/ml of Amp compared to 8 µg/ml PB or controls. These experiments indicate that Polymyxin B may modify the action or release of endotoxin in this model.

1176 RISK FACTORS FOR CANDIDEMIA IN THE NEONATAL INTENSIVE CARE UNIT (NICU): A CASE-CONTROL STUDY. Debra E. Weese-Mayer, Diane Wheeler Fondriest, Robert T. Brouillette, and Stanford T. Shulman. Northwestern University, Children's Memorial Hosp., Department of Pediatrics, Chicago, IL.

Systemic candidiasis, especially candidemia, is an increasing problem among high-risk neonates. Although possible predisposing factors have been suggested, no case-control study has evaluated potential risk factors. By retrospective chart review we identified 19 infants admitted to the NICU between 1976 and 1983 (0.9% of all admissions) who had documented candidemia prior to 4 months of age. 17 of 19 patients could be matched to a control infant selected on the basis of birthweight and date of NICU admission. We compared the duration of exposure to antibiotics, hyperalimentation and central venous and arterial catheters in cases to controls. We found that median duration in days (d) of exposure to several risk factors was significantly longer in patients compared to controls by Wilcoxon signed-rank test: all antibiotics 38 vs 14 d, $p<.0004$; aminoglycoside therapy 17 vs 7 d, $p<.0004$; nafcillin or vancomycin therapy 5 vs 0 d, $p<.0014$; hyperalimentation 19 vs 0 d, $p<.0018$; intralipid 13 vs 0 d, $p<.008$; endotracheal tube or tracheostomy 19 vs 1 d, $p<.01$; central venous catheters 10 vs 0 d, $.05<p<.10$; and umbilical artery catheters 12 vs 5 d, $.05<p<.10$. We conclude that in neonates development of candidemia is associated with (and possibly caused by) prolonged exposure to antibiotics, hyperalimentation, intralipid, and tracheal intubation. To the greatest extent possible consistent with good clinical care, exposure to these risk factors should be minimized.