● 1015 SERUM AND NASOPHARYNGEAL SECRETORY ANTIBODY AND CELLULAR IMMUNE RESPONSE TO VARICELLA ZOSTER VIRUS (VZV) AFTER NATURALLY ACQUIRED OR VACCINE INDUCED INFECTION. Sarah Bogger-Goren, Koichi Baba, Michiaki Takahashi, and Pearay L. Ogra, State Univ. of N.Y. at Buffalo, Res. Inst. of Microbial Diseases, Osaka, Japan, and Children's Hospital of Buffalo, N.Y.

Employing the techniques of lymphocyte transformation, delayed cutaneous reactivity to VZV, and fluorescent antibody staining to membrane antigen (FAMA), the cell mediated immunity (CMI), serum IgG, IgA, and IgM, and nasopharyngeal IgA antibody response to VZV was determined in 45 patients with naturally acquired VZV infection, and in 9 and 11 normal subjects immunized with Oka strain of live attenuated VZV vaccine administered via intranasal (I/N) or subcutaneous (S/C) routes respectively. Most subjects manifested VZV specific CMI response after natural infection or immunization by various routes. Natural infection resulted in VZV antibody response in serum IgM, IgG and IgA, and nasopharyngeal IgA response in 100% of subjects. I/N or S/C immunization induced serum IgG antibody response which was remarkably similar to the response observed after natural infection. Significantly, however, secretory IgA response to VZV was conspicuously undetectable after S/C or I/N immunization with the live vaccine. These observations provide further support for the efficacy of VZV vaccine to induce high degree of VZV specific immune response in the serum. However, the lack of secretory antibody response after mucosal or parenteral immunization with this vaccine may have potential implications in susceptibility to mucosal reinfection in vaccinated subjects.

1016 CHOLESTASIS IN THE TOXIC-SHOCK SYNDROME (TSS). Glenn R. Gourley, P. Joan Chesney, Jeffrey P. Davis, Gerard B. Odell. University of Wisconsin Medical School, Clinical Science Center, Department of Pediatrics, Madison, WI.

Serum liver function tests were performed in 22 females, fulfilling the criteria for the TSS. Total serum bilirubin at some point during hospitalization was > 1.0 mg/dl in 18/21 pts. Mean ($\bar{x}$) and SD during hospitalization were: 2.3±1.3 mg/dl (n=20) on day #1, 3.1±2.7 (n=14) on day #2, and 2.5±2.1 (n=12) on day #3, respectively, with a maximum (max) level of 11.3 mg/dl in one pt. In 8/16 pts tested, the conjugated bilirubin was > 0.4 mg/dl with a range (R) = 0.5-5.3 mg/dl; $\bar{x}$ = 1.8±1.6 mg/dl.

Other abnormalities of liver function on the first hospital day included SGOT > 41 U/L in 15/20 pts, max: 300 U/L, $\bar{x}$ = 103±99 U/L; SGPT > 40 IU/L in 8/10 pts, max: 267 IU/L, $\bar{x}$ = 92±83 IU/L, and GGT > 55 U/L in 7/9 pts, max: 231 U/L, $\bar{x}$ = 112.4±61.5 U/L. Serum albumin was < 3.7 g/dl in 16/19 pts, R = 2.3-4.4 g/dl, $\bar{x}$ = 3.2±0.6 g/dl. Alkaline phosphatase during hospitalization was > 101 U/L in 13/19 pts.

Serum bile salts (BS) were > 10 μMolar in 16/16 pts, R = 12.2 - 147.7, $\bar{x}$ = 37.8±37.4. These abnormal values for BS are particularly striking, as all pts were essentially fasting.

The 7 pts who required dopamine had significantly higher total serum bilirubin levels during the first two hospital days (t-test of $p < .005$ and $p < .05$, respectively). These findings are best explained by both hypoperfusion of the liver and a canalicular injury secondary to staphylococcal exotoxin. Cholestatic features appear to be a universal finding in TSS.

●1017 SULFA-TRIMETHOPRIM PROPHYLAXIS AND THE NATURAL HISTORY OF RECURRENT OTITIS MEDIA. Barry M. Gray, (Spon. by Hugh C. Dillon) University of Alabama in Birmingham, Department of Pediatrics, Birmingham.

In a double-blind placebo-controlled study of prevention of acute otitis media (OM) in 50 children, those taking sulfamethoxazole-trimethoprim (SXT) had significantly fewer episodes of OM than others not taking SXT during the year-long trial. Multiple regression models revealed, however, that the influence of SXT on the number of OM episodes children experienced was relatively minor. The most important factor, regardless of study group, was exposure to potential pathogens, in terms of acquisition or reacquisition (ACQ) of S. pneumoniae and H. influenzae, as determined by serial nasopharyngeal cultures. The 19 children with no OM had significantly less exposure (3 ACQ/pt/yr) than the 31 children with ≥ 1 OM (4.5 ACQ/pt/yr; $p < 0.001$). It was also noted that 19/23 episodes of pneumococcal OM were associated with recent acquisition, rather than prolonged carriage, of the infecting strain, entirely consistent with our previously reported observations in a prospective study of pneumococcal carriage and infection. Except for the small influence of age at first OM, there was no reliable way to predict in advance which children were at greatest risk for OM. The usefulness of SXT prophylaxis is limited by the ability to select patients who are most likely to benefit. Consideration of SXT and other modes of OM prevention should take into account the variation in OM risk in terms of exposure to possible pathogens.

1018 ANAEROBIC BLOOD CULTURE SURVEY IN TWO NEONATAL INTENSIVE CARE UNITS (NICU) Greene G, Marcheck N, Modanlou H, Pezzlo M, Henke R, Huxtable R, University of California Irvine, Department of Pediatrics

Only 8-15% of blood cultures (BC) from NICU patients suspected of sepsis yield pathogenic bacteria. Previous studies have suggested that anaerobic bacteria may cause BC negative neonatal sepsis. In this study 455 BC were drawn and processed anaerobically from patients in 2 NICUs with signs of sepsis. Five of the cultures were umbilical in origin. The rest were obtained from peripheral veins. Over a 3-month period all BC in one of the hospitals were processed in the same way to provide a comparison group. Any air was expressed prior to inoculating the blood into bottles with 50 cc pre-reduced anaerobically sterilized trypticase soy broth with sucrose and .025-.05% SPS with 10% CO_2 atmosphere. All subcultures were performed under a continuous flow of CO_2 onto pre-reduced media and incubated in Gaspak^R jars. This technique should recover all but very fastidious anaerobes. Aerobic pathogens were recovered from 37 (8.1%) of cultures. An additional 3.5% yielded aerobic contaminants. Anaerobes were recovered from only 3 (0.7%) cultures (1.C. perfringens, 1 Veillonella sp. 1 Bacteroides sp.). Similar results were obtained with 1714 adult BC (199 aerobic, 16 anaerobic recoveries). In this study the incidence of anaerobic bacteremia was no greater in NICU than adult patients. The techniques employed may miss very fastidious organisms, however, we are unable to confirm a significant role for anaerobic bacteria in the neonatal sepsis syndrome.

● 1019 ALVEOLAR MACROPHAGE FUNCTION IN EXPERIMENTAL RESPIRATORY VIRAL PNEUMONIA. Holcombe E. Grier and Wallace A. Clyde, Jr., Univ. of North Carolina, N.C. Memorial Hospital, Department of Pediatrics, Chapel Hill.

Aucte viral pneumonia predisposes both humans and experimental animals to secondary bacterial infection. One hypothesis is that defects exist in the phagocytic and killing function of alveolar macrophages (AM). To examine this hypothesis, AM function was evaluated during experimental viral pneumonia. Cotton rats (Sigmodon hispidus) inoculated with human parainfluenza type 3 virus (P3V) were sacrificed at selected points during infection and AM were collected by trans-tracheal saline lavage. To assess AM function, the cells were exposed in vitro to zymosan and their activity as indicated by light generation was measured. In P3V infected animals the total number of cells increased slightly by 72-96 hr. but there was a significant decrease in the chemiluminescent response (mean peak reduction, 55%). AM cultures inoculated with P3V did not become infected as determined by immunofluorescence; this suggests an indirect mechanism for the decreased chemiluminescence. AM metabolism may be suppressed since the luminescence of phagocytes is thought to be caused by extracellular release of oxygen radicals; alternately, the effect may be due to decreased phagocytosis of the zymosan. The findings support the premise that AM dysfunction plays a role in bacterial complications of P3V infections and perhaps of other respiratory viral diseases. (Supported by NHLBI SCOR Grant P50-HL19171.)

1020 THE ANTIGENIC DETERMINANTS OF VARICELLA-ZOSTER VIRUS. Charles Grose, Univ. Texas Hlth. Sci. Ctr., Dept. of Pediatrics, San Antonio, Texas.

Antigenicity and immunogenicity are important considerations in the laboratory evaluation of candidate varicella-zoster virus (VZV) vaccines. Therefore, high titered antisera were prepared in guinea pigs and rabbits against two VZV strains: VZV-32 (a laboratory strain) and VZV-Oka (a vaccine strain). Radiolabeled proteins and glycoproteins were precipitated from VZV-infected cells with the VZV immune sera, as well as human zoster sera, and analyzed by polyacrylamide gel electrophoresis. Three major glycopeptides of approximate mol. wt. 62,000, 98,000, and 118,000 were identified; two of the three glycoproteins have been found in the membranes of VZV-infected cells and in culture medium overlying VZV-infected cells. At least seven nonglycosylated antigens, which ranged in mol. wt. from ∿30,000 to 150,000, also were present in the precipitates. The prominent high mol. wt. antigen probably corresponds to the major capsid polypeptide found in herpesviruses. In summary, at least 10 polypeptides were consistently precipitated by VZV antisera obtained from hyperimmunized animals. Since both strains elicited the same spectra of VZV antibodies, they could not be distinguished from one another on the basis of their electrophoretic profiles.