1123 Efficacy and pharmacokinetics of intravenous rifampin for central venous cannula (CVC) infections. Jeffrey R. Koup, Judy Williams-Warren, Allan Weber and Arnold L. Smith*. Dept. of Pediatrics, Children's Orthopedic Hospital, Univ. of Washington, Seattle 98105.

Twenty patients with Gram-positive CVC infections were treated with intravenous vancomycin and rifampin: pharmacokinetics were determined serially in 12, aged 3 mos. to 12 yrs. Plasma clearance (Clp) did not correlate with age, but did correlate with V_D and peak conc. With increasing duration of therapy Clp increased 58% (3.24 to 5.12 l/hr/m^2) and $T_{\frac{1}{2}}$ decreased 27% (2.48 to 1.81 hrs), although interpatient Clp ranged from 1.49 to 8.58 l/hr/m^2. The peak conc. correlated with Clp. The reciprocal of the predicted dose corrected conc. at the average mean residence time (MRT) (3.14 hrs) correlated (r=0.918) with measured Clp. Measured rifampin conc. at the MRT predicted Clp. The CVC was removed from 3 patients before the 14 day treatment concluded; 15 patients were free of CVC infection 30 days after concluding therapy. Persistence of infection occurred in 1, superinfection in 1. We conclude that vancomycin and rifampin is efficacious therapy for CVC infections. Increasing Clp of rifampin necessitates periodic dosage adjustment, but Clp can be predicted from the measured rifampin conc. at the MRT.

1124 Bioavailability of rifampin in children receiving H. influenzae chemoprophylaxis. Jeffrey R. Koup, Judy Williams-Warren, Allan Weber and Arnold L. Smith*. Dept. of Pediatrics, Children's Orthopedic Hospital, Univ. of Washington, Seattle 98105.

The absolute bioavailability of oral rifampin (R) was determined in 20 infants with H. influenzae meningitis. We found that the MIC of R, 25-desacetylrifampin (25-dR) and 5-N-formylrifampin (nf-R), and rifampin quinone (Rq) were 0.1 µg/ml for R and 25-dR, 0.05 µg/ml for nf-R and 0.5 µg/ml for Rq for 20 CSF isolates of type b H. influenzae (Hib). R was administered IV (1 day) and po at 300 mg/m^2/d for 3 subsequent days. Appropriate contacts were prescribed with R. Throat cultures were obtained 2-4 wks after cessation of therapy. Serum conc. of R, 25-dR and nf-R were determined by HPLC. Peak R conc. after IV and po doses corrected to a 300 mg/m^2 dose were different (27.4 vs 10.5 mcg/ml respectively, $p<0.0001$). The peak conc. after po dose occurred at 2.0±9 hrs. The ratio of the 25-dR AUC to the R AUC were similar for IV and po routes of administration (0.21 vs 0.22). nf-R conc. were lower than 25-dR and were detectable in < 1/2 the patients. Pharmacokinetic analysis of the R serum conc. indicated that 50±22% (range 28-1.21%) of the po dose was absorbed. Follow-up cultures revealed Hib carriage in 1/17: this child's sib did not receive R. Three patients were lost to follow-up. We conclude that R and its metabolites are active against H. influenzae: eradication of Hib appears to result from the cumulative bioactivity of R and metabolites.

1125 NON-UTILITY OF HYPERALIMENTATION SURVEILLANCE CULTURES. Keith Krasinski, Evelyn Beagan, and Robert S. Holzman. Spon. by Anne A. Gershon. New York University School of Medicine-Bellevue Hospital Center, Department of Pediatrics, New York.

Post-infusion hyperalimentation surveillance cultures (HC) are commonly obtained in many hospitals and have been routinely performed in our Special Care Unit (neonatal intensive care). We reviewed the microbiology records for the 1 year period from October 1983 through September 1984, to identify infants who were receiving hyperalimentation, and who had blood cultures (BC) for suspected sepsis. Thirty four patients who had been hyperalimented in that period had 101 BC. The incidence of positive BC was 15%. Two patients each had 2 organisms isolated from one BC. S. epidermidis (6/17) was the most common isolate. The same 34 patients had 1213 HC, 84 (0.7%) of which were positive: 3 for 2 organisms and 1 for 3 organisms. The most common organisms isolated were S. epidermidis 40/89, yeast 10/89 and enterococcus 8/89. The ability of routine HC to predict a subsequent episode of sepsis (positive BC) was studied. Two of 15 episodes of positive BC occurred subsequent to the isolation of the same organism from HC: sensitivity 0.13, specificity 0.94, predictive value of a positive HC 0.03, predictive value of a negative HC 0.98. The ability of concurrent (±24 hrs) HC to predict a positive BC was also studied. Five of 15 positive BC were accompanied by a positive HC: sensitivity 0.33, specificity 0.84, predictive value of a positive HC 0.26, predictive value of a negative HC 0.88. The annual cost of routine HC was $55,529. HC's are not effective predictors of positive BC and their routine use could substantially misdirect antimicrobial therapy. Concurrent HC and BC may be useful in establishing the pathogenesis of an infection.

1126 METHICILLIN RESISTANT S. AUREUS INFECTIONS IN PEDIATRICS. Keith Krasinski, Robert S. Holzman, and Samuel Schaefler. Spon. by Anne A. Gershon. New York University School of Medicine and NYC Dept. of Health, New York.

Methicillin resistant S. aureus (MRSA) is endemic on adult services in our hospital; however, prior to 1983 MRSA was rarely recovered from pediatric patients. In the 1 year period from October 1983 through September 1984, 13 MRSA isolates were recovered from 12 pediatric inpatients. There were 12 episodes of infection. One isolate was of indeterminate significance. Eleven infections were nosocomial and one was apparently community acquired. Ten of the nosocomial infections were related to surgery. There were 6 wound infections, 2 CSF shunt infections, 1 intra-abdominal abscess, and 1 infected Broviac catheter. Two patients had MRSA bacteremia and one had hematogenously disseminated staphylococcal disease although blood cultures were negative. Five distinct phage types of MRSA were identified. There was one isolate each of phage type 77,84; 83A,85,81; and 29,52,52A,79,80,6,47,53,54,83A,85,81. Two of 10 isolates were not susceptible to international or NYC experimental phages. Eight of 10 isolates, not typable by international phages were lysed by NYC experimental phage 88 and were from patients cared for on a single pediatric ward housing both medical and surgical patients. CDC isolation precautions were instituted for each patient in whom MRSA was identified. There was no evidence of spread between medical and surgical patients suggesting that this endemic hospital strain was sporadically imported from surgical services. A point prevalence survey on all patients on that ward failed to identify any other colonized pediatric patients. The absence of intra-ward spread suports the efficacy of CDC precautions in preventing patient to patient transmission of MRSA.

1127 INTERFERON (IFN) PRODUCTION BY MONOCYTE/MACROPHAGES IN RESPONSE TO RESPIRATORY SYNCYTIAL VIRUS (RSV) AND PARAINFLUENZA TYPE 3 (PI3). L. Krilov, E. Godfrey and K. McIntosh. Divs. of Inf. Dis., Schneider Children's Hosp. of LIJ-HMC, New Hyde Park, NY and Children's Hosp., Boston, MA.

We have previously reported on RSV and PI3 growth in adherent human peripheral blood mononuclear leukocytes (M's). (Ped Res 18(4),279A,1984) With both viruses younger M's (dl post-harvest) are poorer producers of new virus than older M's (d4&7) by ≥ 10 fold. In these experiments we investigated IFN production by M's in response to stimulation with these agents. M's were infected on dl,2,4&7 after harvest at a MOI of 0.5-0.6 and washed after 2 hrs of viral adsorption and every 24 hrs. The supernatants were monitored for: antigen production by ELISA; infectious progeny on HEP-2 monolayers; and IFN activity in a VSV plaque-reduction assay. IFN was not detected in 2hr specimens and was maximal at 24hrs after viral exposure. With PI3 IFN production inversely correlated with new virus production. The dl M's produced the highest IFN titers (800 IU) and the least virus (2x10^{4}PFU/ml) while the d4 and d7 M's produced lower amounts of IFN (100 and 0 IU) and higher viral titers (3.2-3.4x10^{5}PFU/ml). With RSV infection the dl,2&4 M's produced minimal IFN (≤25IU); the d7 M's produced 400 IU. The significance of this IFN production in the d7 M's is uncertain but did not correlate with virus or antigen production, which are lowest on dl and highest on d7. Mock infected cells produced no detectable IFN. The observed IFN activity was successfully blocked with anti-IFN antibody. These findings correlate with the clinical findings that RSV is a poor inducer of IFN while PI can induce IFN production in nasal secretions.

1128 BILIRUBINEMIA: AN EARLY SIGN IN VENTRICULOPERITONEAL (VP) SHUNT INFECTION. Sidney S. Kripke, Suresh Ramnath. (Spon. by M. G. Robinson), Medical College of Ohio, The Toledo Hospital, Dept. of Ped., Toledo, Ohio.

Two very-low-birthweight infants with hyaline membrane disease sustained grade 3 intraventricular hemorrhage during first week leading later to hydrocephalus and VP shunt placement. Although bilirubinemia from red blood cell breakdown cleared by 3 weeks of age jaundice recurred in both infants prior to proven S. epidermidis (S.epi) shunt infection. Other tests to determine etiology of obstructive jaundice were negative. Bilirubinemia may be an early sign in VP shunt infection.

DAY	EVENT	BILIRUBIN T/D mg%
1-7	625 gm. female	9.0/0.4
17		4.4/0.3
43	VP Shunt	
92	Shunt revised	
99	Jaundice recurs	5.7/3.3
121		6.6/3.2
154	Fever, bulging fontanel; S.epi: shunt & ventricle	9.8/4.9
155-174	Vancomycin IV	
162	Shunt removed	5.0/2.5
169	New shunt	

DAY	EVENT	BILIRUBIN T/D mg%
1-7	770 gm. female	9.0/0.6
12		3.0/
27	Jaundice recurs	8.0/3.7
60	VP Shunt	7.5/3.7
83		9.0/4.4
91	Apnea episodes S.epi: shunt & ventricle	11.1/5.3
91-120	Vancomycin IV	
104	Shunt removed	6.9/3.5
119	New shunt	4.7/2.2
148		1.6/