793 PERSISTENCE OF MIDDLE EAR EFFUSION AFTER OTITIS MEDIA.

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To evaluate the outcome of otitis media(OM), we followed 93 children with OM and middle ear effusion(MEE) identified by tympanocentesis. Bacterial pathogens were isolated from the MEE in 63 children: S.pneumoniae(33), H.influenzae(22), S. pyogenes(1), N.meningitidis(1), N.catarrhalis(3), or mixed pathogens(3). Thirty-five were treated with ampicillin(AMP), 58 with trimethoprim-sulfamethoxazole(TMP-SMZ) and all with pseudoephedrine.

Middle ear effusion persisting for 4 weeks or longer after presentation(PMEE) occurred in 37.5% of the 93 patients. PMEE was found in 49% of 57 children 2-24 months old and 19% of 36 children 25-144 months old($p<.01$). 28.5% of 63 children with bacterial pathogens in initial MEE cultures and 56.5% of 30 with negative cultures had PMEE($p<.01$). This relationship was seen in all age groups. No association was observed between PMEE and history of prior middle ear infection, sex, or choice of antimicrobial agent.

3 of 35 AMP and 2 of 58 TMP-SMZ treated patients had persistence of the infecting organism in MEE documented 6-28 days after onset. A new infection occurred during follow-up in 2 AMP and 3 TMP-SMZ treated children. There was no difference in incidence of PMEE between children with bacterial pathogens in MEE(5 of 10) and those with sterile MEE (15 of 29) at follow-up.

Identification of children at risk for persistent effusion is important if morbidity of chronic middle ear disease is to be reduced. Children ≤ 24 months old and those with sterile MEE appear to have a significant incidence of PMEE.

794 EARLY DIAGNOSIS OF NEONATAL INFECTION WITH A SCORING SYSTEM.

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A need exists for a rapid method of identifying neonatal sepsis. Of 444 babies admitted to our ICN, 140 were clinically suspected of having sepsis. A two phase evaluation score was used. A "rapid" score was obtained (within 1 hour) with WBC and Diff., mini-ESR, and latex determinations of haptoglobin (Hp), C-reactive protein and IgM. A "complete" score (within 24 hours) added α_1 -acid glycoprotein, Hp by hemoglobin binding capacity, and IgM by electrophoresis. Table I shows the scoring:

	WBC/Diff.	Hp	IgM	CRP	α_1-AGP	ESR
0	No Abnormality	≥25mg%	≤30mg%	neg	≤30mg%	0-5
1	1 Abnormality	≤25mg%	≥30mg%	-	≥30mg%	6-10
2	2 Abnormalities	≤50mg%	≥50mg%	pos	≥50mg%	≥10

In Table II, none, clin+ and cult+ represent no apparent infection, infection strongly suspected clinically and blood culture positive, respectively.

"Rapid"	None	Clin+	Cult+	"Complete"	None	Clin+	Cult+
0-2	102	14	-	0-3	103	9	-
3-4	2	10	6	4-6	1	15	5
5-8	-	1	5	7-12	-	1	6

All cases with documented infection had elevated scores. There were 16 other elevated scores which would have indicated a need for antibiotic treatment, while 102 babies may not have required antibiotics. This rapid assessment was superior to using any one test alone.

795 HAEMOPHILUS INFLUENZAE, THE PREDOMINANT CAUSE OF BACTERIAL PNEUMONIA IN HAWAII.

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Streptococcus pneumoniae is considered the most common cause of bacterial pneumonia in childhood. However, in the last 5 years in our hospital Haemophilus influenzae was the most common etiology. Cases were not considered to be of bacterial etiology unless there was a positive culture from blood or body tissue such as pleural fluid or CSF. Throat, sputum, or peroral tracheal aspirate cultures were not included. Haemophilus influenzae was identified in 13/23 patients with bacterial pneumonias followed by S. pneumoniae (4/23), Staphylococcus aureus (2/23), and other bacteria (4/23). The mean age of patients with H. influenzae was 1.7 years with a sex ratio of 10 boys to 3 girls. Lobar pneumonia was most common, and 7/13 had more than one lobe involved. Haemophilus influenzae pneumonia was clinically indistinguishable from other bacterial or viral infections. Two patients had effusions, and one had an interstitial pneumonitis. The diagnosis in 10/13 cases was made by positive blood cultures. Five of 13 patients received antibiotics prior to diagnosis. Whether the incidence of H. influenzae pneumonia has increased or whether aggressive and fastidious culturing has just identified more cases is not clear. Haemophilus influenzae should not be considered an uncommon cause of pneumonia in infants and young children, and empiric therapy should cover this organism.

796 ANTIBODY TO VARICELLA ZOSTER (VZ) VIRUS IN PRETERM INFANTS.

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Serum specimens from 72 preterm nontransfused infants were examined for antibody to VZ virus. Infants were divided by birthweight into 3 groups: I (<1500 gm-14), II(1500-2000 gm-20), & III (2000-2500 gm-38). Infants were also divided by gestational age, determined by LMP and physical exam, into 3 groups: A (<30 weeks), B (30-34 weeks), & C(>34 weeks). There were 56 AGA and 16 SGA newborns. VZ antibody was measured by the fluorescent antibody to membrane antigen (FAMA) technique.

Of 72 preterm infants, 7 (9.7%) had no detectable antibody to VZ virus, with FAMA titers of <1:2. There was no apparent difference in titers between groups.

Thus, most preterm infants have detectable antibody to VZ virus, presumably due to transplacentally acquired maternal antibody. Similar results have previously been found in term infants. Antibody to VZ virus in preterm infants correlates with timing of transfer of gamma globulin from mother to fetus.

797 FETAL EFFECTS OF CONGENITAL CYTOMEGALOVIRUS INFECTION (C-CMV).

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Ninety-seven newborns with C-CMV observed in our unit over the past 10 years were examined for evidence of fetal maldevelopment. Birth dates were evenly distributed with respect to season. Seventy-nine were asymptomatic at birth of whom 54 were diagnosed because of elevated levels of IgM in cord blood and the remainder identified in a prospective study. Eighteen manifested disease at birth and 6 of this group expired in the neonatal period. Males predominated in the symptomatic group (13/18) whereas an equal sex ratio (43/39) was noted in those with subclinical infection (SI). Mean birth weight (3076 grams) as well as rates of gestational prematurity (GP) (4.1%) and intrauterine growth retardation (12.1%) for those with SI were almost identical to the control population. Similarly, the mean weight/length^3 and length/head circumference ratios were not different from expected values. In contrast, among the ill neonates the mean birth weight was 2081 grams and only 2 of 18 were full term and normally grown. Of the remainder, 12 were term infants with intrauterine growth retardation and 4 manifested GP of whom 3 were normally grown and 1 was growth retarded. The patterns of growth failure varied with a tendency toward equal decrements in weight, length and head circumference for symptomatic patients. Structural anomalies occurred in the brain, genitalia, integument and limbs of 5, 7, 1 and 3 patients, respectively, for a total of 15 infants so afflicted.

798 GENTAMICIN-RESISTANT STAPHYLOCOCCUS AUREUS INFECTIONS

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Widespread usage of antimicrobial agents has resulted in the selection of resistant strains of Staphylococcus aureus. Until recently, infections due to Staphylococcus aureus resistant to gentamicin have been rare. However, several reports of such resistant organisms have appeared in the past year.

Recently six patients, on four separate wards of the Childrens Hospital of Los Angeles, developed significant clinical infections with Staphylococcus aureus resistant to gentamicin. While all six patients had received previously one or more courses of combination antibiotic therapy, including gentamicin, none of the patients had received topical gentamicin.

Three infants developed cellulitis around gastrostomy sites; one patient developed a draining abscess at the nephrostomy site; one patient developed a wound infection at the margin of an amputated limb; and one patient developed multiple draining skin abscesses with concomitant septicemia. Three distinct antibiotic sensitivity patterns were demonstrated suggesting that at least three strains of Staphylococcus aureus were responsible for these infections.

Widespread usage of gentamicin has apparently contributed to the selection of virulent, gentamicin-resistant Staphylococcus aureus strains associated with significant infections.