11 SELECTED ASPECTS OF ROTAVIRUS DIARRHOEA (RVD) IN PATIENTS <3 YEAR-OLD IN 2 COMMUNITIES IN SOUTHERN ISRAEL (THE NEGEV).

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Two ethnic groups inhabit the Negev region of Israel, Beduins and Jews. They differ in their birth-rate, life style and nutritional and growth patterns. We report an epidemiological study of acute RVD among <3 yr olds in 2 small urban communities a) Bedouin with 700 births/yr b) Jewish with 500 births/yr. 296 Bedouins (212 with diarrhoea & 84 controls) and 215 Jews (135 with diarrhoea & 80 controls) were enrolled. 60% with diarrhoea and all controls were studied as outpatients. Median age was 10m in both groups. RVD was detected in 64/444 (14%) with diarrhoea against 3/163 (2%) of controls ($p<0.001$). RVD was more common than C jejuni (9%), Shigella (4%), Salmonella (3%), E.P.E.C. (8%) G. lamblia (8%) and Cryptosporidium (5%). No differences in relative frequency of diarrhoea were found between hospitalized and non-hospitalized, Jews and Bedouins or well and mal-nourished patients. The percentage of RVD was highest during winter (30%) ($p<0.01$). We estimated that 2% of the Bedouins, but only 0.2% of the Jews with RVD during their first year of life were hospitalized. Vomiting was more frequent among patients with RVD (43/57)-75%) than among patients with other causes of diarrhoea (194/360-54%) ($p<0.005$). No differences were observed in other clinical variables or stool appearances between patients with or without RVD. RVD is a leading cause of morbidity of young children in our community. Efforts should be concentrated on appropriate immunization.

12 LONG TERM PROTECTION AGAINST SEVERE ROTAVIRUS DIARRHOEA BY A SINGLE DOSE OF BOVINE ROTAVIRUS VACCINE STRAIN RIT 4237 GIVEN IN THE NEONATAL PERIOD.

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In a randomized double-blind placebo-controlled trial of the RIT 4237 bovine rotavirus vaccine 741 babies were given a single oral dose of vaccine or placebo at 5 dys of age; one third of the group was given a second dose of vaccine or placebo at 7 mths of age. The children remained in follow-up for a mean of 2.3 years. There was a total of 502 diarrhoeal episodes in the group during the follow-up; of these 121 (24.1%) were attributable to rotavirus. At follow-up 17.5% of children had experienced an episode of rotavirus diarrhoea; no child had more than one detectable episode with rotavirus. Vaccine protection was analyzed using a severity score for acute diarrhoea. Vaccine-induced protection against severe episodes (score >9) was 79% and aginst mild to moderately severe episodes (score >4) it was 35%. The mean severity score was 6.5 in the vacinees and 10.6 in the placebo group. Protection was slightly better in the vacinees who responded serologically (mean score 5.9) than in those who did not; however non-responders were partially protected. A booster dose of the same vaccine did not improve protection. The prevalent rotavirus serotypes during the follow-up were type 1 (67 cases) and type 4 (14 cases); No difference in protection against these serotypes was observed. A single dose of a bovine rotavirus vaccine to the newborn induces protection against severe rotavirus infection.

13 MENINGITIS DURING THE FIRST YEAR OF LIFE - A TWO YEAR STUDY

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During the period September 1985 - August 1987, 653 consultant paediatricians in the UK and Eire cooperated in a prospective study by providing clinical information on cases of meningitis in children under one year of age. Additional information was collected from microbiologists, the CDSC and OPCS. 2498 cases of meningitis were reported; M/F ratio 1.3/1. 484 occurred during the neonatal period of which 360 were bacteriologically proven - 1/3250 live births. Group B streptococci (GBS) (25%) and E. coli (17%) were the commonest isolates. H. influenzae, Str. pneumoniae and N. meningitidis accounted for 13% of cases and L. monocytogenes for 5%. In 48% of neonates treatment was based on chloramphenicol, in 24% on gentamicin and in 14% on cefotaxime. The overall mortality among the newborn was 20% (ranging from 30% with enteric G -ve rods, 5% with listeria to 0% with viruses). Culture negative cases of meningitis had a 3% mortality. Among babies older than 28 days Str. pneumoniae (12%), H. influenzae (36%) and N. meningitidis (34%) accounted for 82% of cases and E. coli or GBS for 6%. Mortality among babies over one month of age was 5%. There was a geographical variation in incidence. This is the largest comprehensive study in the British Isles. Information on the long term morbiditty associated with infantile meningitis is now being collected.

14 INCIDENCE AND ETIOLOGY OF NEONATAL SEPTICAEMIA AND MENINGITIS IN WEST SWEDEN 1975 - 1986

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In a retrospective study all neonates, born to mothers living in Goteborg and five surrounding communities, with culture-verified septicaemia or menigitis between 1975 and 1986 were identified. After exclusion of patients from whom bacteria considered to be contaminants (e.g. Staph. epidermidis and -streptococci), were isolated, 238 patients remained. During the twelve year period 83,186 live births were registered. Thus the incidence was 2.9/1,000. The incidence did not change during the period studied. The most frequent isolates were group-B streptococci (69), Staph aureus (56), E coli (34), Klebs pneumoniae (29) and enterococci (20). Twelve other organisms accounted for 1-7 cases each. There were no major changes within the distribution of the various organisms during the time period studied. From 37 of the 238 patients the pathogen was isolated from CSF. Thirteen of the meningitis case were caused by group-B streptococci. 33 patients died (14%). Most of them were preterm. Besides these data information on risk factors, age at start of symptoms and clinical symptoms will be presented.

15 INCIDENCE OF HAEMOPHILUS INFLUENZAE MENINGITIS IN SWITZERLAND (ZURICH) AND THE POTENTIAL EFFECT OF A PRP-D IMMUNIZATION PROGRAMME

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More than 95% of invasive haemophilus infections are due to capsulated H. influenzae type b. This organism is one of the most frequent cause of bacterial meningitis during childhood. Reported incidence of H influenzae meningitis in North and West Europe range from 11 to 31 per 100,000 in the age group 0-5 years. In a ten year retrospective study (1975 to 1985) we found the incidence of H influenzae meningitis during childhood in the Kanton of Zurich (total population 1.1 Mill) to be 30 per 100,000 in the age group 0-5 years and 11 per 100,000 in the 0-15 year group. The case fatality rate was 4.2% and neurological sequelae were observed in 20% of the patients. The peak incidences were observed at 12 to 18 months and at 24 to 30 months, whereas for epiglottitis peak incidence was at 30 to 36 months. 10% of meningitis cases were less than 6 months old and 12% were between 5 and 15 yrs old. The age range for epiglotitis was from 0.5 to 10.8 yrs. This infection also had a case fatality rate of 4.5% . On the basis of these findings there are 250 invasive H. influenzae infections in children annually in Switzerland (total population of 6.5 Mill.). 8 children may die due to the infections and another 20-30 children will suffer permanent sequelae, such as hearing impairment, and other neurological sequelae. A vaccine, such as the PRP-D conjugated polysaccharide vaccine used in Finland, could prevent 200 severe infections, 6 to 8 deaths and around 20 cases of permanent neurological sequelae annually.

16 ASEPTIC MENINGITIS FOLLOWING VACCINATION AGAINST MEASLES AND MUMPS - TRIALS OF ETIOLOGICAL DIAGNOSIS AND CLINICAL MANIFESTATIONS CAUSED BY ATTENUATED MUMPS VIRUS.

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Aseptic meningitis as a complication of vaccination against mumps is infrequent and poorly documented. This retrospective study (1979-86) investigated the possible etiologic relationship between vaccination and aseptic meningitis in 115 hospitalised children taken ill within 30 days of vaccination with the Leningrad 3 strain of mumps virus and the Edmonston-Zagreb strain of measles virus. The etiologic viral diagnosis was based on serological tests and the isolation of virus from appropriate cell cultures which distinguished between attenuated and virulent mumps virus. The incidence of mumps vaccine-associated meningitis was 1 per 1000 of the patients vaccinated. In 92.4 % (102/110) of children, the incubation period was 11 to 25 days; 28.5% (32/112) had associated swelling of the salivary glands. Clustering of cases, seasonal occurence and age of the patients highly suggested a causal relationship with the vaccination. 16/110 cases (14.5%) had positive CSF culture (attenuated mumps virus - 6 cases, virulent mumps virus - 7 cases, ECHO6 - 2 cases, and ECHO9 - 1 case). In 4/6 patients with attenuated virus the incubation period ranged from 17 to 20 days (mean 18.2 days). Clinical findings did not differ from natural mumps meningitis. The course was uncomplicated and at discharge the patients had no sequelae. The attenuated mumps virus should be recognized as one of the causative agents of aseptic meningitis.