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(SELECTED ABSTRACTS)

President: José Tantalean (Perú)

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CHANGES IN IRON NUTRITIONAL STATUS DURING THE FIRST 6 MONTHS OF LIFE IN INFANTS BORN TO IRON SUPPLEMENTED MOTHERS

Zavaleta N, Huasasquiche C, Callalli J, Garcia T, Caulfield L. Instituto de Investigación Nutricional. Lima. Perú.

Aim: To assess iron nutrition during the first 6 months of life of infants born to iron supplemented mothers during pregnancy.

Subjects and Methods: In a supplementation trial of iron plus or without zinc we followed up a group of 219 infants, during the first 6 months of life, born to iron supplemented mothers. Changes in hemoglobin (Hb) and, serum ferritin (SF) are presented. Inclusion criteria were birth at term with adequate weight for gestational age, healthy and exclusively breastfed. Mothers received during pregnancy iron supplement (Group A=103) or Iron + zinc (Group B=116).

Results: No differences in health and nutrition status or SES indicators by group of supplementation were demonstrated. Mean Hb concentration at birth was 180.6 g/L in group A and 177.8 g/L in group B. At 3 months of age, mean Hb was 102.0 g/L and, 103.8 g/L and, at 6 months of age was 105.2 g/L and, 105.8 g/L, respectively (NS). Median SF at birth was 152.0 ug/L (group A) and 177.4 ug/L (group B), at 3 months 166.0 ug/L and 134.6 ug/L (NS) and, at 6 months this was 49.3 ug/L and, 43.3 ug/L. Hb at 3 months correlated with SF at birth ($p=0.018$). At 3 months there was no difference in SF by group of supplementation, SF correlated with SF at birth; values were higher in girls than boys ($p<0.01$). At 6 months of age, Hb correlated with Hb at 3 month ($p=0.03$) and with maternal education (controlling for Hb at 3 months) $p=0.002$. At 6 months of age 75% infants were exclusively breastfed, all had weight and height adequate for age and 62% had Hb < 110 g/L. Hemoglobin percentiles by age and sex are presented and related variables and anemia control strategies in infancy are discussed.

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DIAGNOSTIC USEFULNESS OF FECAL LEUKOCYTES IN CHILDREN WITH ACUTE DIARRHEA

Carreazo NY, Silva DM, Huicho L, Asmat K, de la Cruz P, Bada C. Hospital Emergencias Pediátricas. Lima Perú.

Aim: To assess the diagnostic usefulness of fecal leukocytes for diagnosis of inflammatory diarrhea in children attending a pediatric emergency hospital.

Methods: We reviewed retrospectively the clinical records of children aged 0 through 18 years old who had attended the Hospital de Emergencias Pediátricas, Lima, Peru, from January through September 2002. All those cases in which fecal leukocytes and microbiological assessments had been requested were eligible. We categorized the counts of fecal leukocytes in the following categories:

Results and discussion: Overall, 699 fecal samples were examined to quantitate fecal leukocytes; of these, 522 also underwent stool cultures. Cultures were positive in 223 patients (43%) and 299 resulted negative. A latex agglutination test for rotavirus was performed in 225 samples, and 87 were positive (38.6%). In general, the diagnostic usefulness of fecal leukocyte counts was low, except for the extremes of the spectrum (less than 5 leukocytes/hpf and more than 100 leukocytes/hpf). In the first case, sensitivity was 93%, LR+ was 1.3 and LR- was 0.25. This means that a positive result for the lowest counts has a very low probability of being due to an inflammatory enteropathogen; however, specificity was low (27%) and therefore a positive result cannot rule out the probability of an inflammatory diarrhea. When the count exceeded more than 100/hpf its sensitivity and specificity were rather low (62% and 72%, respectively), and the LR+ was 2.24, meaning that the probability of an inflammatory enteropathogen as the causative agent is doubled in cases with a positive result compared to those children with counts below 5 white blood cells per hpf.

Key words: fecal leukocytes, diagnosis, inflammatory diarrhea

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DETERMINATION OF ROTAVIRUS' SEROTYPES IN CHILDREN YOUNGER THAN 36 MONTHS OF AGE WITH ACUTE GASTROENTERITIS AND DESHYDRATION IN THE CONCEPCION - TALCAHUANO AREA, CHILE

Venegas G, Nuñez E, Alvarez A, Mamani N, O'Ryan M. Departamento de Pediatría Facultad de Medicina Universidad de Concepción. Departamento de Microbiología Universidad de Chile. Concepción, Chile.

Introduction: Rotavirus' (RV) infection is a global health problem. Recent studies estimates that 101 million cases of rotavirus gastroenteritis occur each year, 25 million require ambulatory consults, 2 million need hospitalization and 440.000 deaths result in children less than 5 years of age. This illness has a heterogeneous worldwide distribution, with high mortality rates in underdeveloped countries. G1P8 is the major circulating serotype, but new serotypes are emerging constantly.

Aims: To determine the circulating RV serotypes during a specific period in a geographic area, previous to a Phase III test of a human oral vaccine (Rotarix ®).

Material and Methods: This is an observational, descriptive, prospective, longitudinal study with informed consent and accepted by the Ethical Committee of the National Health Service. Detection centers were set up where participating members provided coverage for the project 24 hours a day in both private and public hospitals in the cities of Concepción and Talcahuano between February and June 2003. Infants who presented with acute gastroenteritis and dehydration (AGAD) who required WHO's B or C treatments were included. An ELISA test was used to detect RV antigen in fecal samples. A polymerase chain reaction was used to typify G1 to G4 serotypes in the RV positive samples.

Results: Out of 231 consultations for AGAD, samples for ELISA were obtained in 206s. There were 121 positives for RV. G4 was the most frequent serotype isolated (76.8%). The highest number of RV positive samples occurred between the months of February and March.

Conclusions: the most frequent serotype isolated (76.8%) was G4; this represents a change in the incidence of RV serotypes, because in 1996 and in 2000 G1 was isolated in 84 % and 58% of cases, respectively. This is important in the evaluation of the Phase III immunization studies with G1P8 human stock in this geographic area.

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RECOVERY OF BONE COMPONENT IN RPC RATS TREATED WITH GH. A DISCRIMINANT ANALYSIS STUDY.

Quintero F, Guimarey L, Orden B, Fucini C, Oyhenart E. Centro de Investigaciones en Genética Básica y Aplicada (CIGEBA). Comisión de Investigaciones Científicas de la Provincia de Buenos Aires. (CICBA). Consejo Nacional de Investigaciones Científicas y Técnicas (CONICET). Facultad de Odontología, UNLP. La Plata. Argentina.

Aims: To identify which dimensions of the skeleton are associated with growth recovery in intrauterine growth retarded rats treated with GH.

Material and Methods. Wistar rats were divided into Control (C), Sham-operated (Sh), IUGR and IUGR+GH. IUGR was induced by partial ligation of uterine vessels on day 14th of pregnancy. GH was administered from 21 to 60 days of age (Genotropin® 3.0 mg/kg/dia). Sh animals were injected with diluent only. All the animals received stock diet *ad libitum*. At 84 days of age frontal and lateral radiographs were taken from each animal. Length, width and height of neurocranium (LN, AN, HN) and splanchnocranium (LE, AE, HE), and length and width of the femur (LF, AF); humerus (LH, AH) and tibiae (LT, AT), column length (LC) and upper, middle and lower pelvic width (API, APM, Aps) were measured on the radiographs. Data were processed by the Kolmogorov Smirnov tests and discriminant analysis. The latter builds functions which are linear combinations of the original variables, maximizing the between-groups variance and minimizing the within-groups variance.

Results: Data were normally distributed. The discriminant analysis showed significant values for the Wilks coefficients and F values. The first function (66% of variation) was defined by APS, APM and LT, which were negatively correlated. The second function explained about 18% of the total variation and was defined by APS (negative correlation) and LT (positive correlation). In the bi-dimensional space created by both functions, LT discriminated between sexes and APS among treatments. This analysis separated IUGR from those treated with GH, who became closer to Sham.

Conclusions: The growth hormone treatment in IUGR rats seems effective for body growth recovery. Tibial length is the most important variable for discriminating between sexes, while the upper pelvic width is the best variable for discriminating between the groups treated with GH.