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ENERGY EXPENDITURE DURING NUTRITIONAL RECOVERY OF SEVERELY MALNOURISHED INFANTS WITH ASSOCIATED INFECTIONS: AL.Cardoso, PAP.Saraiva, FR.Carrazza, Pediatric Research Center, Instituto da Criança and Instituto de Ortopedia e Traumatología, Hospital das Clínicas, University of São Paulo Medical School, São Paulo, Brazil.

The resting energy expenditure (REE) and the respiratory quotient (R) were measured in 8 malnourished infants admitted for diarrheal dehydration and associated common infections. Mean body weight deficit for age was more than 35%. Ages ranged from 3 to 12 months. They were studied by indirect calorimetry with a closed system on admission (Adm) and after recovery (Rec) which lasted a mean of 37 days. VO2 and VCO2 were analyzed by gas chromatography. Physical activity was evaluated by the Scopes and Ahmed score. Paired data show that REE per kg of body weight by age was similar on Adm = 70.4 ± 17,4 kcal/kg and at Rec = 79.4 ± 14.7 kcal/kg. When REE was calculated using body weight by length, significant differences were observed between Adm = 44.5 ± 7.3 kcal/kg and Rec = 55.3 ± 9.5 kcal/kg ($p < 0.05$). Increased physical activity was associated to a similar (20%) and significant increase ($p < 0.05$) in energy expenditure on Adm and after Rec. R on Adm= 0.76 ± 0.09 was significantly lower than after Rec = 0.83 ±0.16 ($p < 0.05$). Decreased weight/height - REE on Adm may be due to reduced body mass. We conclude that R is an appropiate parameter to monitor metabolic activity of malnourished patients during nutritional recovery.

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FREE FECAL TOXIN AND SEROCONVERSION IN HOUSEHOLD CONTACTS OF CHILDREN WITH THE HEMOLITIC UREMIC SYNDROME (HUS). E. López, S. Grinstein, M. Woloj, E. Rubeglio, S. Devoto, F. Mendilaharzu, L. Pickering, T. Cleary and M. Diaz. Hosp. Niños, Buenos Aires, Argentina y Univ of Texas.

A prospective study in 87 household contacts of 51 children with HUS was performed, with the aim of determining evidence of infection with Shiga-like toxin producing bacteria. Gastrointestinal tract symptoms were present in only 1/87 contacts. DNA hybridization studies of fecal E.coli isolates from 80 of these 87 contacts were positive in 6. Free fecal cytotoxin was detected in 25/64 (39%) of the household members. In 58 out of the 77 (75%) serum samples available in the household contacts, serum neutralizing titers of 1:4 to one or both toxins, was detected. Seroconversion was found in 10/24 (42%). These data show that household contacts of children with hemolytic uremic syndrome are commonly positive to Shiga-like toxin produced by E.coli. Seroconversion to these toxins occurs frequently in family members of children with hemolytic uremic syndrome.

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TOLERANCE, ACCEPTABILTY, AND NUTRITIONAL QUALITY OF HIGH PROTEIN RICE FLOUR INFANT FORMULAS (HPRF). J.Riumalló, V.Gattás, G.Barrera and A.Cordano. Inst. of Nutrition and Food Technology, Santiago, Chile and Mead Johnson Nutritional, Evansville, IN.

Nine males infants in their final stage of recovery from marasmic malnutrition, growing at a normal rate and otherwise asymptomatic were studied. They were fed ad libitum and randomly assigned for three consecutive 8 day periods to either a commercially available soy infant formula (D) or to Formula (C) with HPRF + casein hydrolisate + Lys, Thr, and Tryp, or Formula (B) with HPRF + Lys and Thr. Five days in each period were used for adaptation to the formula and the following three days for metabolic balance studies. The three formulas promoted similar weight increments (37-47 gr/day and 7.3 - 7.7 gr/kg/day). Nitrogen balance and nitrogen retention were also similar for the HPRF's and the soy formula and the same was true for fat and energy absorption. HPRF based formulas are as good as commercially available soy infant formulas in promoting adequate weight gain, nitrogen retention, and fat and energy absorption in infants.

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ADRENOCORTICAL FUNCTION IN ADEQUATE AND SMALL FOR GESTATIONAL AGE PREMATURE NEONATES DURING THE FIRST TWO WEEKS OF LIFE. D.Nizzo, M. Warman, E. Chaler, M. Maceiras, A. Sola, M. Rivarola, A. Belgorosky. Serv. de Endocrinología y Neonatología. Hosp. "Prof. Dr. J. Garrahan", Buenos Aires, Argentina.

Definitive and fetal adrenocortical functions were studied in 8 preterm (PT) adequate for gestational age (AGA), in 10 PT small for gestational age (SGA) neonates during the first 14 days of postnatal life and in 8 fullterm (FT)AGA newborns during the first 7 days of postnatal life. Peripheral vein serum cortisol and 17α - hydroxyprogesterone (17-OH-P) were used as parameters of the function of the definitive zone while serum dehydroepiandrosterone sulfate (DS) as indicator of fetal zone function of the adrenal cortex. Cord vein blood (CVB) serum 17-OH-P was used as a marker of the function of the fetoplacental unit. There was a significant negative correlation between 1-day-old and 5-day-old serum 17-OH-P, cortisol or DS and gestational age in the 27 subjects studied. A significant negative correlation was found between serum 17-OH-P and days of postnatal life in the 3 groups of neonates, and between serum cortisol and days of postnatal life in PT AGA neonates but not in PT SGA newborns. During the first week of life, mean+SD serum cortisol was 267 ± 143 and 273 ± 136 nmol/l in PT AGA and PT SGA neonates respectively ($p < 0.05$ and $p < 0.02$), significantly higher than in FT newborns (118 ± 81). Serum 17-OH-P was higher ($p < 0.05$) in PT AGA neonates only (8.77 ± 6.6 vs 3.60 ± 2.81 nmol/lt in FT). Serum 17-OH-P was lower in cord vein blood of PT, as well as in maternal blood during delivery, compared to that of FT (67 ± 86 vs 341 ± 182 nmol/l, $p < 0.01$). Increased levels of cortisol and 17-OH-P in PT newborns suggest that the stimulus of the extra uterine adaptation in prematurity results in adequate response of the definitive zone of the adrenal cortex. This increased serum 17-OH-P present in PT neonates should be considered in the differential diagnosis of 21-hydroxylase deficiency.

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IRON STATUS IN FULL-TERM NEWBORN SMALL FOR GESTIONAL AGE. M.Olivares, S.Llaguno, E.Hertrampf, V.Marin, P.Mena, M.Milard. INTA, Universidad de Chile, Santiago, Chile.

Iron nutrition was measured in 27 full-term newborn small for gestational age (SGA) during the first 4 months of age. Twenty seven preterm infants appropriate for gestational age (AGA) served as controls. Anthropometric and laboratory evaluations were performed at birth and monthly until 4 mo of age. A subgroup of infants (SGA n = 11; AGA n = 20) were supplemented with 3 mg/kg of iron (IBEROL®), from 2 to 4 mo of age. SGA infants presented a higher hemoglobin (Hb) concentration ($p < 0.05$) and an increased frequency of polycythemia at birth. AGA infants had a greater post-natal Hb drop ($p < 0.02$) at 2 months of age. At 4 mo of age there were no differences in Hb, serum ferritin (SF) and transferrin saturation between SGA and AGA infants. Iron supplementation resulted in higher Hb and SF levels at 4'mo of age ($p < 0.05$) and a lower prevalence of iron deficiency in both groups. We can conclude that full-term SGA and preterm AGA infants had no differences in iron nutriture status.

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INADVERTENT POSITIVE END EXPIRATORY PRESSURE (PPEPi) IN MECHANICALLY VENTILATED PEDIATRIC PATIENTS (ARM). J.Sasbon, G.Weller, R.Zima, J.Mendilaharzu. Unidad de Cuidados Intensivos Pediátricos, Hosp.de Pediatría S.A.M.I.C. "Prof. Juan P.Garrahan", Buenos Aires, Argentina.

During mechanical ventilation, PEEPi occurs when expiratory time is shorter than time required for complete exhalation of inspirated gas. PPEPi increases pleural and central vascular pressure and decreases cardiac output, compliance and pulmonary ventilation. Decreasing PEEPi by lengthening expiratory time and/or decreasing the respiratory frequency, increases compliance and cardiac output. The diference between PIP and PEEPi increases ventilation and decreases PCO_2. PEEPi in critically ill, intubated patients has not been emphasized. PEEPi was measured in 17 of these patients clamping the connection between the endotracheal tube and the respirator at the end of expiration: after 5 second airway pressure resulting from trapped gas was measured. PEEPi was detected in 13 patients (76%) (4 without lung injury) age X:28m. Expiratory time was then lengthened and/or respiratory frequency decreased. The results were:

	PEEPi	Resp.Frec.	Exp. Time	PCO_2
Pre	X:6,97cm	X:25,73/min	X:1,75s.	X:40,60mm
Post	X:4,52cm	X:20,91/min	X:2,19s.	X:42,98mm
	$p < 0.2$	$p < 0.05$	$p < 0.05$	Not significant

PEEPi is frequent in intubated pediatric patients; lengthening expiratory time and/or decreasing respiratory frequency decreases PEEPi without changes in PCO_2; knowledge about the magnitude of PEEPi allows to adjust PEEP to optimal levels and increases ventilation at a lower mean alveolar pressure; PEEPi is important during weaning from ventilator.