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DETERMINANT FACTORS OF THE NUTRITIONAL STATUS OF PARAGUAYAN CHILDHOOD. INTEGRATED HOME SURVEY - IHS 2000/ 01

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Introduction: Pediatric malnutrition is an actual and increasing problem in Paraguay. Objective: Evaluate the factors which determine the nutritional status of Paraguayan childhood by departments, in the period 2000 - 2001. Material and Methods: Descriptive, cross-sectional, analytical study. The database of the Integrated Home Survey - IHS 2000 / 01 from the General Direction of Surveys, Statistics and Census - DGEEC was used. Estimations were performed at national and departmental level (excepting Alto Paraguay and Boquerón). Cohort: 4543 children (boys and girls) < 5 years of age. Anthropometric measurements were carried out (NCHS curves) and associate variables were determined by multiple regression and logistics analysis. Results: The prevalence of global, acute and chronic malnutrition was 4.6%, 0.8% and 13.7%, respectively. The prevalence of obesity was 6.1%. The departments with greater malnutrition were Concepción, San Pedro, Caazapá, Itapúa, Amambay and Canindeyú. Logistic regression analyses for determinant factors of the nutritional status by departments were highly significant for birth weight, maternal level of education (scholarship), duration of nursing, access to drinkable water, and access to health services ($p < 0.01$). Birth weight was a significantly protective variable for risk of malnutrition in weight and height in almost all departments ($p < 0.01$). The determinants factors for height compromise were low birth weight, low maternal level of education, poverty, and no access to drinkable water and health services ($p < 0.01$). Conclusions: There are problems of pediatric malnutrition and childhood obesity. Adequate birth weight was a significant variable to reduce the risk of pediatric malnutrition. Some departments could decrease the prevalence of chronic malnutrition with a wider access to basic health services.

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VALIDITY OF EQUATIONS TO ESTIMATE BODY FAT IN TEENAGER TOP MODELS

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Introduction: Slaughter's equation is normally used for body composition assessment in children and adolescents. However, such equation - as well as others - needs to be cross-validated in specific groups as the one of top models, presenting particular physical characteristics. Objective: To test the validity of two anthropometric equations for body density estimation, Lewis et al. (1978) and Slaughter et al. (1988), in a group of professional teenager top models. Methods: 11 top models (17.09 ± 1.92 yrs old) were evaluated, using hydrostatic weighing (HW) as "gold standard". The densities obtained by the equations were converted in body fat percentage (BF), using the formula proposed by Siri (1961). Skinfold thickness was obtained by Sanny® skinfold caliper, following the standardizations proposed by Costa (2001). The criteria adopted to determine the validity of the equations were those proposed by Lohman (1992): Pearson's correlation coefficient ($r > 0.80$, Standard Error of Estimate (SEE) < 3.5 % of body fat, and not significant difference in paired t-test. Results:

	Mean BF	SD	R	SEE	Student's t-test (p)
HW	16.50	3.54			
Slaughter	19.05	2.94	0.76	3.57	0.004*
Lewis	16.19	3.64	0.86	2.24	0.614..

Conclusion: The analysis of the results demonstrates that only the equation proposed by Lewis et al. to evaluate female young athletes fulfilled all the validity criteria in the studied group. We can therefore conclude that this can be a good option to assess body composition in teenager top models with similar characteristics.

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RISK VARIABLE CLUSTERING IN THE METABOLIC SYNDROME IN CHILDHOOD OBESITY

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Obesity, dyslipidemia, hypertension, insulin resistance, and type 2 diabetes or impaired glucose tolerance (IGT) especially in constellation, are known as metabolic syndrome. They are potent risk factors for coronary disease in adults. Objective: To estimate the prevalence of clustering of the metabolic syndrome in obese children and adolescents using the definition proposed by the World Health Organization (WHO, 1998). Materials and methods: 182 overweight children and adolescents (99 females, 83 males; age range 11.1 ± 2.1 yr) were selected among the children who consulted for obesity without clinical manifestations of other diseases. The metabolic syndrome was defined as presence of overweight or obesity and type 2 diabetes or IGT or insulin resistance normal glucose tolerance with at least one of the following risk factors: hypertension or dyslipidemia. Children with BMI > the 85 th percentile for age and sex reported on the BMI tables of Rolland Cachera were defined as overweight. All of the children were given an oral glucose tolerance test and venous blood samples were obtained to measure plasma glucose and insulin levels. Triglyceride concentrations were assessed at fasting samples. Blood pressure was measured at rest Systolic or diastolic hypertension was defined as a value greater than 95 th Plo of the tables of Task Force. Insulin resistance was assessed at baseline by using the homeostasis model assessment and considered abnormal a value greater than more than the mean and one SD of normal control. Type 2 diabetes and impaired glucose tolerance was defined according to the ADA guidelines. Results: A total of 46.1% of the patients had metabolic syndrome. The associations of obesity and the individuals conditions founded was Insulin resistance: 65.3%, hypertension: 58.2 % hypertriglyceridemia 21.8% and with impaired glucose tolerance 8.8%. The patients with metabolic syndrome were significantly more obese than the group without the syndrome BMI 32.9 ± 5.9 vs 29.9 ± 5.3 ($p < 0.0005$). Conclusions: The clustering of cardiovascular risk factors called metabolic syndrome based on the WHO definition is seen in 46,1 % the obese children and adolescents. It confers an increased risk of cardiovascular morbidity and its identifications may thus be important in the risk assessment and treatment of childhood obesity.

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NUTRITIONAL CONDITION OF PATIENTS WITH SHORT BOWEL SYNDROME IN THE POST PARENTERAL NUTRITION PERIOD

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AIM: To evaluate the anthropometric, iron, B12 Vitamin and folate nutritional condition in patients with short bowel syndrome (SBS) after suspending parenteral nutrition (PN) for no less than 2 years. **PATIENTS AND METHODS:** We studied 10 pediatric patients with SBS. Anthropometric parameters evaluated: weight, height, brachial perimeter, and width of subscapular, suprailiac, bicipital and tricipital cutaneous folds with Lange caliper. Waterlow's classification of nutritional condition was used according to weight/height (W/H) and height/age (H/A) fitting percentages, using NCHS reference tables. Values, volume and concentration of hemoglobin were assessed, as well as those of ferritin, transferrin, ferremia and percent saturation of transferrin, folic acid, and B12 vitamin. A nutritional survey was also performed. **RESULTS:** The age range of the patients was 3.3 - 12.9 yrs. The mean of residual bowel was 46.3 cm (range:20-70), jejunum: 30.4 (10-60), ileum 17.9 cm (0-60). The average time of PN dependence was 378.5 days (range:70 - 900). W/H was normal in 8 patients, with a Score I deficit in 2 patients and a low percent of fatty and lean body mass in 1 patient. H/A was abnormally low in 5 patients: 3 Score 1, and 2 Score II. Height was already affected during the PN period The percent of adipose mass was low in 5 patients. Three patients presented anemia, two of which also developed macrocytosis. Such alteration in MCV was also found in two cases where anemia was absent. The levels of B12 vitamin (1 patient) and serum folates (4 patients) were low. The nutritional survey showed that the average daily intake of B12 vitamin and folic acid was adequate, while 50% of patients could not adapt to the intake of iron. Caloric and protein intakes were 110 (range: 67-238) and 326 (r:122-684), respectively. **CONCLUSION:** Malabsorption of macro and micronutrients can manifest subtly and late. Height in 50% of patients was affected since they were receiving PN. Despite the protein intake fitting percent was well above 100% in all patients, they would apparently not be able to develop a compensatory growth capacity in the post-PN period. Both nutritional control and long-term clinical-biological follow-up should be very strict in SBS patients after PN retrieval.

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LATE ONSET SEPSIS (LOS) IN INFANTS < 1500 G BORN IN THE NEOCOSUR NEONATAL NETWORK UNITS

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Introduction: Survival of very low birth weight (VLBW) infants has increased in the continent, being late onset sepsis (LOS) a frequent event. It has a major effect on neonatal morbidity (increased BPD, increased length of stay, neurologic sequelae, NEC) and mortality. There are multiple reports in the literature on the incidence and complications of LOS. However, few reveal the situation in Neonatal Intensive Care Units in Latin America. Objective: The present report analyzes the incidence of LOS in VLBW infants born in the period 01/2000 - 06/2002 within the NEOCOSUR Neonatal Network. It also considers the epidemiology of responsible microorganisms and the impact of LOS on outcome and mortality in this group of patients. Methods: The Network's database (1359 neonates) was analyzed. It is permanently updated online, and it includes all VLBW infants born within the 18 participating units. This report includes data from the 1222 VLBW infants who survived for more than 72 hrs. Results: 390 neonates (32 %) had at least one LOS episode. The number of LOS episodes was inversely correlated with birth weight. The mean of days to the first LOS episode was 14.2 (median = 12; mode = 7). For most infants the first episode of LOS was diagnosed between days 7 and 15. From all microorganisms isolated, 63 % were Gram +, 25 % were Gram -, and 12 % were Candida sp. These data are consistent with those reported by other Neonatal Research Networks (Israeli Neonatal Research Network and NICHD Neonatal Research Network in the USA). Overall, 15 % of VLBW neonates had LOS caused by S. Aureus. In some cases the same patient in one unit had multiple LOS episodes with the same bacteria over a prolonged period, thus pointing to the existence of a healthy carrier. Mortality was associated with LOS in 40 to 53 % of VLBW infants who died. Conclusions: LOS is a frequent event within the NEOCOSUR Neonatal Network and is strongly associated with the cause of death and increased morbidity of many of the babies. Controlling the incidence of LOS in the participating NEOCOSUR Units may lead to increased survival and a better quality of life for VLBW infants born within the system.

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BEHAVIORAL PATTERNS IN ADOLESCENTS WITH TATTOOS

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OBJECTIVES: a) To determine the prevalence of adolescents with tattoos visiting our Unit; b) To look for behavioral patterns in this population; c) To determine the prevalence of regret attitudes because of the tattoo. **METHODS:** Case-control study. An anonymous survey was given to adolescents with and without tattoos (control group), matched by age and gender. The following areas were assessed: age, gender, parent occupation, school attendance, drugs use, sexual activity, presence of close tattooed people (friends, family), and beliefs about tattoos and health. Number of tattoos, location, complications, aseptic technique, regret feelings, and discrimination because of the tattoo were assessed in tattooed adolescents. Statistics: categorical variables were assessed by the chi square test; Odds ratios and 95% CI were estimated. Numerical variables were assessed by the Student's t- or the Wilcoxon test. A logistic regression model was developed for significant variables. **RESULTS:** From a total of 852 adolescents, 54 had tattoos (6.3% prevalence; 95% CI 4.6%-8%). Surveys were given to the 54 tattooed adolescents and to 108 adolescents without tattoos. Significant associations were found in the tattooed group with: delayed school grade ($p < 0.001$, OR 5.5), tobacco use ($p < 0.001$, OR 7.08), number of alcohol intoxications over the last year ($p < 0.001$), sexual activity ($p < 0.001$, OR 4.3), number of sexual partners ($p < 0.03$), tattoos in people who cohabit with them ($p < 0.03$, OR 3.8), intention of having a tattoo ($p < 0.001$, OR 11.45). On the multivariate analysis, the variables associated with having a tattoo were: delayed school grade, tobacco use, sexual activity and beliefs of reversibility. In the tattooed group, 98.1% assured an aseptic technique was used. No adolescent was regretful for having being tattooed. 11.5% felt discriminated at least once because of the tattoo. **CONCLUSIONS:** There was association between tattooed adolescents and some behavioral patterns: delayed school grade, tobacco use, sexual activity, and beliefs of reversibility.