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BIRTHWEIGHT AND CHILD MORTALITY IN HIGHLANDS POPULATIONS OF JUJUY PROVINCE (ARGENTINA)

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Introduction: Chronic hypoxia in high altitude environments reduces fetal growth and birthweight and increases child mortality.

Objective: To analyze the relationship between geographic altitude and birthweight, prematurity, and child mortality of Jujenean populations distributed over an altitudinal gradient (500 to 3500 m.a.s.l.)

Subjects and methods: Data proceeded from Statistical Reports on Live Newborns (LN) and fetal deaths (DF) between 1998 and 2003, which were grouped according to the four Jujenean geographical regions (Puna 3500 m.a.s.l., Quebrada 2500 m.a.s.l., Valle 1500 m.a.s.l., Ramal 500 m.a.s.l.). Rates of very low birthweight at birth (VLBW), low birthweight (LBW), insufficient birthweight (IB) (2500-2999 g), normal birthweight (NB) (> 3000 gr) were determined and the residual distribution (RD) was estimated using the Wilcox Statistical Program (http://eb.niehs.nihgov/bwt) (only in LN). A Pearson correlation for these variables and Infant Mortality (IM), Neonatal Mortality (NM), Post-neonatal Mortality (PM) and geographic altitude was done.

Results: Puna and Quebrada show the lowest percentages of VLBW (P= 0.59% and Q= 0.81%), of NB (P= 63.4% and Q= 68.8%) and RD (P= 1.4% and Q= 1.9%). The lowlands (Valle y Ramal) show the lowest values of LBW (V= 5.13% and R= 4.53%), of IB (V= 16.7 and R= 15.9%) and the higher ones of RD (V= 4% and R= 3%). Both in LN as in DF, geographic altitude correlated negatively to VLBW, NB, and RD, while it showed positive correlation to LBW, IM, NM, and PM. All correlations were statistically significant.

Conclusions: In agreement with the literature, data on the complex interactions between IM and intra-uterine growth in high altitude human populations suggest that, on account of an evolutionary adaptation mechanism, gestations at high altitudes tend to restrict intra-uterine growth, and that this reduction is unable to overcome the effect of natural selection due to hypoxia and social and sanitary factors linked to high altitude.

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THE POINTING GESTURE IN 12 MONTH OLD INFANTS BORN PRE-TERM

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Background: In the developmental perspective, pre linguistic behaviors (smiling, crying) comes before the verbal competence of the child. The absence of them may indicate language delay. The pointing gesture, men cerebral evolution point, appears around the tenth month of life and can be understood as the child first word: pointing to a desired object, the child intentionally shares his needs with an adult. Prematurity and low birth weight have been associated with language delay.

Objective: Identify the presence of pointing gestures in12 month old ex-pre-terms.

Subjects and Methods: 36 children born less than 37 weeks, attended at the "Programa Multidisciplinar de Acompanhamento de Prematuros", Neonatal Discipline at Universidade Federal de Sao Paulo, 20 (55,6%) were male and their medium average birth weight were 1550,2 g (± 376,6) and 16 (44,4%) were female, with a medium average birth weight of 1387,5 (± 445,4) with no differences between groups (p = .243). Children were evaluated with the Bayley Scales of Infant Development (Bayley, 1993) and from the Mental scale it was studied their performance on the behavior "Use gestures to make wants known". Data were described and statistically treated with the SPSS (11.0) Program.

Results: Boys and girls did not vary much regarding their Mental development scores (p=.349). The medium score of Motor development was 12 points higher to boys (p=.038). 26 children had their neurological evaluation results in their file, being 46,16 % (12) with evaluation considered not normal. Only nine (25 %) of the children presented the gestures of pointing to indicate their needs, being five of them female. From them, seven presented scores on the normal variation (85 to 115) in Mental scale and six in Motor scale, and only four children presented normal scores in both scales. Ten children (38,46 %) with normal evaluation by the neurologist also didn′t present the referred behavior .

Conclusion: The pointing gesture, behavior of high complexity, occured in the minority of investigated population. It' is suggested the professionals attention in their work with pre-terms, related to the absence or lackness of pre-linguistic signals, which can be a language delay indicator.

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ACCELEROMETER-BASED ACTIVITY MONITORS AS A MEASURE OF PRESCHOLER'S PHYSICAL ACTIVITY

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Objetive: To evaluate prescholer's physical activity attending the daycare centers (JUNJI, INTEGRA and MINEDUC) using accelerometer-based activity monitors Actiwatch Minimitter 64.

Subjects and Methods: Forty eight 4-5 year old children were selected (28 boys and 20 girls), from four different days care centers in East Santiago City. Physical activity pattern was measured by Actiwatch Minimitter 64 sensor worn on the hip. The activities were categorized by minimum (MI), sedentary (S), light (L) and moderate (MO) levels of physical activity as preview studies. The results are expressed as percentage of minutes in a day in every levels of physical activity.

Results: Threshold counts for the Actiwatch Minimitter 64 hip were (MI), (S), (L) y (MO) < 351, 351-800, 801-2300 y > 2300 respectively. The group shows activities 62± 10, 22±6, 14±6 y 2±2 for (MI), (S), (L) y (MO) respectively. If we compare physical activity at home and daycare centers we observed differences only at MO (p<0.05). No differences between girls and boys were observed but at MO (p< 0.005). If we categorized by nutritional status (normal and obese) physical activity L y MO are the same but there are differences in S (P< 0.05 respectively).

Conclusion: we certify these monitors Actiwatch Minimitter 64 as useful devices for the assessment of physical activity in preschooler's classifying it as minimum (MI), sedentary(S), light(L) and moderate(MO) levels of physical activity.

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CLINICAL CHARACTERISTICS OF HOSPITALIZED CHILDREN WITH FEBRILE SEIZURE. CHILD HEALTH INSTITUTE.

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A retrospective study of 254 hospitalized children with febrile seizure was carried out between January 1998 to December 2002. The mean age of the children was 1.5 years (18 months) the peak age incident was between 0.6 and 1.75 years (7 to 21 months).

The male female ratio was 1.16:1. The mean temperature was 39.15 °C with a minimum of 38 °C and a maximal temperature of 41°C. There was a history of birthweight less than 2500 gr in 16 patients (6.3%), positive family history of epilepsy in 14.6% and family febrile convulsions in 10.2%. Simple febrile seizure was seen in 42.1% and complex seizure in 57.9%.

Upper respiratory tract infection was the commonest triggering factor diagnosed in 37.4% followed by gastroenterocolitis in 33.5%. Lumbar puncture was done in 55.9%, electroencephalogram in 22.4%, Neuroimaing studies like Computerized Axial Tomography in 7.1% and Nuclear Magnetic Resonance in 0.8%. The most anticonvulsivant drug used during febrile seizure was intravenous diazepam in 40.6%. A 48 % of patients received long term treatment being the most used valproic acid, phenytoin and phenobarbital. The Odds ratio(OR) for complex febrile seizure compared to simple febrile seizure was significative with birthweight less than 2500 gr (OR 0.31 CI 0.10, 0.91) and anterior seizure episode (OR 2.11 CI 1.15, 3.87)

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RELATION OF SURVIVAL AND TIME OF CARE OF NURSE IN CRITICALLY ILL CHILDREN

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Objective: To assess the condition at admission, survival, and prognosis of patients at the Intensive Care Unit of the IESN.

Design: Longitudinal prospective study. Setting: Pediatric intensive care unit in an institute specialized in children. Patients: 819 patients between 3 and 17.9 years old consecutively admitted during a 42 month-period. Material and Methods: At admission: demographic data, vital and clinical signs; laboratory analysis; major diagnostic categories and related morbidities; and primary clinical specialty; main procedures; PRISM, TISS-28; Predicted Rate of Mortality and the Time of Nurse's Care (TNC). Construction of survival table and curves for 30 days in relation to time of nurse's care required by the patients. Efficiency was determined by Pollack's criteria of mortality risk >1% and / or at least the administration of one ICU-dependent therapy.

Results: Mean age was 109.4 + 1.7 months, length of stay 9.2 + 18.7 days, and overall mortality rate 16.2% (n=133). 60% required mechanical ventilation. General Survival for 30 days was 43%. Main factors associated to mortality: PRISM ($p < 0.001$), TNC ($p < 0.007$), mechanical ventilation ($p < 0.001$), gender (p=0.016), primary clinical specialty (p=0.033), and major diagnostic category (p=0.035). The survival curve for time of nurse's care showed: survival was greater in patients who required less than 266 minutes (4.4 hours) of nurse's care and mortality was greater in patients requiring more than 349 minutes (5.8 hours) of care. 688 (84%) admissions were efficient. Mean values: PRISM = 10.77 + 6.85, TNC = 279.98 + 104.5 minutes, and TISS-28 = 26.42 + 9.83.

Conclusions: General survival after a follow-up of 30 days was less than 50%. Survival curves related to time of nurse's care showed that patients that required less time for nurse's care had a greater probability of survival; patients who required greater care had a greater probability of mortality. Main factors associated with mortality were high PRISM score and greater need for nursery care. The efficiency at our unit met the standard set forth in the American and the European study.

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IMPEDANCE PNEUMOGRAPHY (IP): A USEFUL METHOD IN THE DIFFERENTIAL DIAGNOSIS OF THE APNEAS IN THE NEWBORN (NB)

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Introduction: The apneas in the NB occur as an initial sign of a variety of different pathologies. The IP processes the information resulting from the chest wall movements, the oronasal flow, the heart rate (HR) and the O2 saturation by means of a multi-channel recorder. This tool helps identify the different types of apneas: central apneas (CA), obstructive apneas (OA), and mixed apneas (MA) – and their implications on HR and saturation. Objective: To present the conclusions resulting from a study in which a cohort of NB was monitored by IP.

Methods: The IP was used to evaluate NB with ALTE, severe episodes of apnea and/or bradycardia and/or desaturation without respiratory ventilation or CPAP. We define CA as the absence of air flow and chest wall movements; OA as the absence of air flow when the chest wall movements are uninterrupted; MA as the combination of the former. We considered bradycardia as HR? 80 beats/minute for ? than 5sec., and desaturation as a register ? 85% for ? than 5sec. Periodic breathing (PB) is defined as a breathing pause that lasts just a few seconds and it is combined with regular breathing.The study was performed during spontaneous sleep, because sleep deprivation increases OA and sympathic tone.

Results: During a period of 40 months, 41 IP were performed to 38 NB with 800 gr. to 4,350 gr. birth weight. The average time of the IP was 10,3 hrs. OA was diagnosed in 15 premature babies and 11 full-term infants (FTI). The etiology of the OA in the premature babies was associated with a potential collapse of the upper airway (UA) , except the infants diagnosed with laryngospasm due to Gastroesophageal Reflux (GER) and a patient diagnosed with microretrognatia. The FTI with OA presented: GER (n:2). Microretrognatia (n:3), increase in the soft parts of the cavum (1), upper airway infection (n:4), laryngomalasia (n:2) and bilateral vocal cord paralysis (n:1). PB with desaturation was diagnosed in 5 premature babies. CA was observed (? of P90) in 5 premature babies, in 2 FTI with Arnold-Chiari Malformation and in 1 FTI with congenital hypoventilation.

Conclusions: The premature babies who were studied presented in most of the cases OA.The etiology of the OA was diagnosed in every FTI.The IP allowed us to clearly identify each type of apnea, as well as understand the physiopathology of the events, resulting in a more rational performance of ancillary studies.