

THESES

NEONATAL SEIZURES: ANALYSIS OF CLINICAL AND NEUROPHYSIOLOGICAL CHARACTERISTICS AND ITS RELATIONSHIP WITH THE INCIDENCE OF EPILEPSY IN A COHORT OF NEWBORNS (ABSTRACT)*. DISSERTATION. PORTO ALEGRE, 2000.

LUIS FERNANDO GARCIAS DA SILVA**

Background: The technological advances in perinatal care have been promoting the survival of preterm and term newborns. Morbidity, however, remains high, determining serious neurological sequelae, including epilepsy.

Objectives: To study the incidence-density (ID) of epilepsy in a population of newborns inpatients with neonatal seizures. To describe possible aetiological factors related to neonatal seizures as well as neurophysiological abnormalities observed. To relate clinical and neurophysiological variables that could influence pos-natal epilepsy development.

Design: Retrospective and prospective cohort study.

Method: A hundred twenty seven newborns inpatients (preterm and term), at The Neonatal Intensive Care Unit of São Lucas Hospital, PUCRS - Brazil. The time period analyzed goes from January 1987 to December 1997. All of them with clinically defined seizures. Data of gestation, perinatal period and neonatal seizures were obtained retrospectively. Polygraphic recordings (PR) were analyzed by experts in neonatal EEG-tracings. Detailed questionnaires were prospectively collected for all infants with neonatal seizures, after informed consent.

Results: The ID of epilepsy in 12 and 36 follow-up months was 22% and 28.3% respectively. Metabolic disturbances and asphyxia were the most frequent aetiological factors observed. Polygraphic recordings were obtained in 110 newborns and considered normal in 14 (12.7%) and abnormal in 96 (87.3%). Ictal discharge patterns were observed in 10 PR, abnormal paroxysmal patterns with or without ictal correlations in 74 PR and background abnormalities or EEG dysmaturity in 47 PR. Anticonvulsants during the neonatal period and central nervous system (CNS) infection were associated to postnatal epilepsy. Inter-ictal normal neurological examination and normal PR as well, were related to good outcome in this study.

Conclusions: The ID of epilepsy in newborns with neonatal seizures was elevated. Metabolic disturbances and asphyxia were the most frequent aetiological factors. Normal inter-ictal neurological examinations as well as PR have shown good outcome. CNS infection and the need for anticonvulsants therapy during neonatal period led to negative follow-up in this cohort.

Key words: seizures, newborn, epilepsy, cohort study.

* Crises convulsivas neonatais: análise das características clínicas, neurofisiológicas e sua relação com a incidência de epilepsia em uma coorte de recém-nascidos. Dissertação de Mestrado, Pontifícia Universidade Católica do Rio Grande do Sul (Área: Neurociências). Orientadora: Magda Lahorgue Nunes

**Address: Serviço de Neurologia do Hospital São Lucas da PUCRS, Avenida Ipiranga 6690 sala 220, 90 610-000 Porto Alegre RS, Brasil.

AGE, BODY MASS INDEX AND WRIST INDEX AS RISK FACTORS FOR CARPAL TUNNEL SYNDROME AND RELATIONSHIP TO SEVERITY OF NERVE CONDUCTION ABNORMALITY (ABSTRACT)*. THESIS. SÃO JOSÉ DO RIO PRETO, 2000.

JOÃO ARIS KOUYOUMDJIAN**

Between September/98 and May/99, 210 symptomatic carpal tunnel syndrome (CTS) patients were studied. All had bilateral nerve conduction studies and none had been surgically treated. Peripheral neuropathy was excluded.

Three groups were defined according to the severity of nerve conduction changes: *mild* = median distal sensory latency, wrist-index finger, 14 cm (P2),

3.7 to 4.4 ms or sensory median/ulnar difference ³ 0.50 ms or median palm latency ³ 2.3 ms; *moderate* = P2 ³ 4.5 ms; *severe* = unrecordable sensory nerve action potential at P2. All latencies were measured to the negative peak. Only the right hand was considered for this study (200 hands), regardless the electrophysiological findings in the left hand. Another group of 320 subjects without any CTS symp-

tomatology or any known systemic disorders was used as control.

The mean age was 50.3 ± 10.8 years for the study group (87.6% female) and 47.3 ± 14.8 years old for the controls (89.1% female). Body mass index (BMI) was 28.4 ± 5.0 for the CTS group and 25.4 ± 4.7 for controls ($p < 0.001$). Right wrist index (WI) was 0.706 ± 0.041 for the CTS group and 0.689 ± 0.037 for controls ($p < 0.001$).

Logistic regression analysis for risk of having CTS showed an adjusted *odds ratio* of 1.11 (95% CI 1.07-1.16) per unit increase for BMI and 1.11 (95% CI 1.05-1.16) per 0.01 increase for WI. An ordinal poly-

chotomous logistic regression analysis of the relationship between these factors and the electrophysiological severity of CTS showed proportional *odds ratios* (mild to severe) of 1.20 (95% CI 1.00-1.30) for 5 years increase in age and 1.10 (95% CI, 1.00-1.20) for 0.01 increase in WI. Higher BMI did not increase the risk of severe CTS.

The conclusions were: 1. The variables WI and BMI were higher in CTS cases ($p < 0.001$). 2. More severe nerve conduction abnormalities were associated with higher age and WI but not with higher BMI.

KEY WORDS: carpal tunnel syndrome, median nerve, compressive neuropathy.

*Análise de fatores pessoais de risco para ocorrência e gravidade de síndrome do túnel do carpo (Resumo) Tese de Doutorado, Faculdade de Medicina de São José do Rio Preto, São Paulo (Área: Medicina e Ciências Correlatas). Orientadora: Dirce Maria Trevisan Zanetta.

**Address: Av. Bady Bassitt 3896, 15025-000 São José do Rio Preto SP, Brasil. E-mail: jaris@terra.com.br

DYSTROPHIN ANALYSES FOR IMMUNOCYTOCHEMISTRY METHOD: STUDY OF 517 CASES (ABSTRACT)*. THESIS. RIBEIRÃO PRETO, 1999.

ROSANA HERMINIA SCOLA**

In 1987, the product of the Duchenne muscular dystrophy (DMD) gene was discovered and given the name of "dystrophin". From then on, the diseases marked by a deficiency or an absence of dystrophin have been called dystrophinopathies. DMD and Becker's muscular dystrophy (DMB) are the most commonly found dystrophinopathies, but the dystrophin deficiency also is observed in the Turner syndrome, in women with chromosome translocations presenting a DMD phenotype, carriers of DMD with cardiopathy and proximal weakness, myocardopathy, certain forms of myalgias and cramps, as well in asymptomatic and high serum creatine kinase.

The purpose of this work was to study the specificity of immunolabelling of dystrophin through the immunocytochemistry method in dystrophinopathies and to determine the reliability of the test as compared to the other diagnostic methods, and to distinguish dystrophinopathies from other muscular diseases. A study was made of 517 cases, which had full clinical and laboratory diagnoses. These cases were grouped into several clinical and laboratory diagnoses prior to the performance of the dystrophin test. From these, the following were suggested: Dystrophinopathies, 227 cases; other muscular dystrophies, 150 cases; myotonic diseases, 16 cases; congenital myopathies, 33 cases; metabolic myopathies, 15 cases; inflammatory myopathies, 14 cases; neuromuscular junction diseases, 1 case; lower mo-

tor neuron diseases, 37 cases; polyneuropathies, 5 cases; central nervous system diseases, 7 cases and miscellaneous, 11 cases.

All the 517 cases were immunolabelled with an antibody for carboxy terminal of dystrophin and classified again, in accordance with their immunolabelling pattern after this, we add 19 cases to the dystrophinopathies group (Duchenne muscular dystrophy 153 cases, Becker muscular dystrophy 68, outliners, Duchenne muscular in female, symptomatic carriers of Duchenne muscular dystrophy 7, possible carriers of Duchenne muscular dystrophy 9). In addition to the already know diseases classified as dystrophinopathies, others also showed a change in the immunolabelling pattern by dystrophin, such as congenital muscular dystrophy, facioscapulohumeral muscular dystrophy, distal myopathies, alpha-sarcoglycan deficiency, myotonic dystrophy, juvenile and infantile spine atrophy and congenital hypotonia from as unknown cause.

In 71 cases, immunolabelling was performed with antibodies for rod domain, amino and carboxy terminal of dystrophin. It was observed those cases with clinical and laboratory dystrophinopathy diagnoses, such as DMB, had failed to diagnose the diseases through immunolabelling with the use of the antibody for the carboxy terminal. After the used the amino terminal and rod domain the diagnosis was possible in all the cases. A pattern, which was proper

to immunolabelling for congenital muscular dystrophy, was observed with use of the antibody for the carboxy terminal, which in most cases was also maintained when the other two antibodies were used.

In 48 cases of muscular dystrophies, a molecular assessment was conducted by using the polymerase chain reaction method (PCR), where it was also possible to detect the presence of deletions in the majority of the evaluated cases.

We arrived at the conclusion that dystrophin evaluation through the immunocytochemical method proved to be high sensitivity and specificity test in the group of the dystrophinopathies, being adequate for differentiating the cases which are suspected of being dystrophies of the limb girdle types. The greatest lack of agreement of dystrophin

through immunofluorescence with the diagnosis was in the cases of congenital muscular dystrophy. It was possible to identify a specific immunocytochemical standard for congenital muscular dystrophy. In dystrophinopathies, immunolabelling is better for the diagnosis when compared to the fresh frozen sections processed muscular biopsy through histochemistry. The use of the three antibodies for different sites of dystrophin enables the sensitivity and specificity of the test to be increased. In the cases of DMD and DMB, we found a high frequency of deletions of the dystrophin genes. The major deletion sites in DMD and DMB were located between exons 3-19 and 42-52.

KEY WORDS: dystrophies, dystrophin, immunocytochemistry, PCR.

*Análise da distrofina pelo método de imunocitoquímica: estudo de 517 casos (Resumo). Tese de Doutorado, Faculdade de Medicina de Ribeirão Preto (Área: Neurologia). Orientador: Lineu Cesar Werneck.

**Adress: Rua da Paz 195 / 112, 80060-160 Curitiba PR, Brasil.

THESES é seção de *Arquivos de Neuro-Psiquiatria* que divulga os resumos em inglês de teses defendidas e aprovadas. O assunto da tese deve estar relacionado a aspectos clínicos ou experimentais de interesse em neurologia, ciências a ela afins e psiquiatria.

Para publicação, o Autor deve encaminhar ao Editor: *abstract* da tese, acompanhado do *título em inglês* e em português; *key words*; *disquete* com a reprodução desses dados.

Adicionalmente, o Autor deve informar: a natureza da tese (Dissertação/Tese de Mestrado, Tese de Doutorado, Tese de Livre-Docência - como exemplos); nome da instituição na qual foi defendida e respectiva área de concentração; nome do Orientador, quando for o caso; endereço para correspondência.