104 - PRACTICALITY AND EFFECTIVENESS OF THE PHYSICAL EXAMINATION PROTOCOL FOR NEONATAL NEUROMOTOR SCANNING.

MS. MARIA DO CÉU PEREIRA GONÇALVES
DOUTORANDA PELA UFRJ
FUNDAÇÃO MUNICIPAL DA SAÚDE/ESTÁCIO DE SÁ /PETRÓPOLIS, RIO DE JANEIRO, BRASIL
neuroceu@hotmail.com

INTRODUCTION

It is considered that cellular specialization occurs most favorably during the neuroplastic maturation period, which starts with fertilization and should end at around two years of age. After this period the mechanism lasts for many years. However, when dealing with motor rehabilitation of premature newborns that carry neuromotor dysfunctions, the neuroplastic maturation only becomes possible with adequate stimuli and learning facilitation of new motor programming. Furthermore, the neuroplastic maturation is achieved through motor interventions, performed before the CNS can experiment and automate pathological motor patterns. (GONÇALVES CÉU & SILVA, 2001, 2002; GONÇALVES CÉU, 2002; GONÇALVES CÉU, SILVA and PORTO, 2008). Thus, this intervention depends directly upon early diagnosis of such dysfunctions.

Many authors had established the principle of neuromotor development through neuronal plasticity (ANNUNCIATO, 1995; BUSSAD, 1995; BANICH, 1997; KANDEL AND SCHWARPZ, 1985; KANDEL, SCHWARPZ AND JESSELL, 1997; LUNDY-EKMAN 2000; LEITE & TERRA-BUSTAMANTE, 2000; AMONG OTHERS). According to the authors, neuroplasticity is a tendency that the central nervous system (CNS) has to adjust to external influences during growth development. Furthermore, it corresponds to the CNS's ability to reestablish or reorganize dysfunctional units, caused by pathological or experimental conditions. A proper interpretation of the term neuroplasticity should include the concepts of motor learning and memory. These represent required internal changes that occur in response to practice and experience, which promotes simultaneously the neurological maturation (SCHIMIDT, 1982).

Hence a complete motor rehabilitation is possible in high risk premature newborn cases, provided that early diagnosis of neuromotor dysfunction has taken place (GONÇALVES CÉU, 1999; GONÇALVES CÉU & SILVA 2001, 2002). For the purpose of developing a practical and effective diagnostic tool, there emerged the Neonatal Neuromotor Evaluation Protocol, for early detection of neuromotor dysfunctions in high risk premature newborns. According to GIROLAMI and CAMPBELL (1994); WAJNSZTEIJN (2003), around 25% to 30% of high risk premature newborns develop neuromotor dysfunctions. In fact this is a very expressive number, considering that nowadays 10 to 15% of conceptions are premature (MINISTÉRIO DA SAÚDE, 2006). Statistics such as these increase the pressure over pediatric health care units including NICUs.

To emphasize the relevance of the proposed theme, there are many well established evaluation protocols based on scientific literature, designed for early neuromotor dysfunction diagnosis. However, those protocols tend to be very extensive; hence their application is time-consuming, probably because of a long list of items to be checked. In addition, the utilization of such protocols is difficult especially at public health care facilities, where there is an ever increasing demand for pediatrics health care services.

Beyond scientific literature I have observed during over 30 years of physical therapy clinical practice how motor behavior establishes itself facing neurological injuries. Thus, I have idealized an evaluation protocol as practical and objective as possible, including questions about global tonus alterations, which may be reflected on the muscle-skeletal system and on the primordial reflexes, as well as on archaic reactions and pathological reflex activities (HORTWITZ & AMIEL-TISON, 1982).

Among the existing well established protocols, the DUBOWITZ & DUBOWITZ (1999) protocol stands out from others, in my opinion. It proposes a neurobehavioral evaluation, which in fact, is capable of drawing out a high risk newborn's profile. Nevertheless, this protocol requires quite a long time to be applied. It commends that the individual must be evaluated precisely at his or her best moment of the day, to ensure that the results present his or her highest possible competencies. To do so, sometimes it is necessary to repeat certain parts of the examinations in two or three separate occasions on the same day.

It is well known how public authority handles the critical health situation that the general population faces nowadays. Reality is cruel because of a greater demand than the existing number of health professionals. Actually, the demand conditions for health services are worthy of third world countries, and it grows startlingly. As for the technological conditions or health professional capability, we are at first world level. In as much as, the Dubowitz protocol is an inadequate tool to be utilized on our routine evaluations together with physical therapy interventions. Therefore the search for a more practical, objective and effective evaluation tool has given rise to the Neonatal Neuromotor Scanning Protocol, which was elaborated from the Neurological Scale of Signs of DUBOWITZ et al, (1970). The last was designed to determine the correct gestation period of premature newborns.

The Neonatal Neuromotor Scanning Protocol (GONÇALVES CÉU, 1998/2008) has shown to be a competent, trustworthy, practical, objective and effective tool for its purpose. After several trials it could be affirmed that it is a great instrument for detecting neuromotor dysfunctions, thus, it could serve on the evaluation of early diagnosis. The objective of this study was to verify the pros and cons of the Neonatal Neuromotor Scanning Protocol, as compared to the Neonatal Neurobehavioral Exam, for early diagnosis of high risk newborn neuromotor dysfunctions.

METHODS

The sample was composed of 30 (thirty) premature newborns in need of special care, hospitalized at the NICU of the Alcides Carneiro Hospital, located in the county of Petrópolis, Rio de Janeiro. Initially, data was collected randomly by sorting two names of mothers out from the total samples' names. Only those individuals considered clinically stable at intermediary NICU care and at group accommodation, for weight gain or under medication participated in this study.

Evaluation Instruments

Two evaluation protocols were used in this study: The Neonatal Neurobehavioral Exam (DUBOWITZ, 1999) and the Neonatal Neuromotor Scanning Protocol (GONÇALVES Céu, 1998/2008).

Evaluation Procedure

The Neonatal Neuromotor Scanning Protocol (GONÇALVES Céu, 1998/2008) was applied first, on the morning period respecting the criteria of one hour before twelve o'clock meals. The Neonatal Neurobehavioral Exam (DUBOWITZ, 1999) was applied in the afternoon period, respecting the criteria of one hour before eighteen o'clock meals. The exams were performed according to the individual's awareness state (KLAUS and KLAUS, 1989).

ıme:			DB: / /
ɜst. age:	40 weeks: / /	Correct age:	Exam: / /
ʻth weight:	Apgar / /	Max HR:	O_2 Period:

	RESULTS				*Phototherapy:	
ɜurological ɹns	0	1	2	3	4	OBS
ɜture						
ɱ Flexion ɜturn	180º	90-100º	180º	90º	< 90º	
arf Sign	Hand surpasses opposite shoulder	Hand touches opposite shoulder	Hand touches nipple	Hand at middle line	Hand at opposite nipple	
g Flexion ɜturn	180º	90-100º	180º	90-110º	< 90º	
pliteal Angle	180º	130º	110º	90º	< 90º	
kle - Ear	180º	150º	130º	110º	90º	
ot dorsiflexion	0º	20º	45º	75º	90º	
ɜad bending						
ntral spension						
ɜad elevation						

ɜflexes and reactions	ABSENT	PRESENT	INCOMPLETE	ALTERED	OBS:
ɜlmar Grasp Reflex					
ɹumb inclusion					
ɔro Reaction					
ɔsitive Support Reaction					
ɹtomatic Stepping					
ɨbyrinth Rectifying Reaction					
ɔg wheel signs					

Punctuation: ( ) < 15 = Hypotonic 15 - 29 = Normotonic* > or = 30 = Hypertonic

Diagnostic Conclusion: Examiner:

Statistical Analysis

To answer underlying questions of the present study, the data obtained from the examination protocols were submitted to descriptive statistical analysis. To make associations or comparisons between variables the data collected was submitted to Pearson's' qui-squared testing.

RESULTS

The deviation analysis Chi2 was previously defined to quantify resulting data from examinations, and it revealed statistical relevance between all variables used from this sample. The comparison index showed significance when the value $p < 0.05$ was adopted for all variables.

From thirty pre-term newborns studied (Tab. 1), One hundred per cent (100%) were able to complete the entire evaluation of the Neonatal Neuromotor Scanning Protocol (GONÇALVES CÉU, 1998/2008). During the examinations none of the infants showed any signs of stress, which could be identified and lead through the active-synchronous theory (Als). Nevertheless, only fifteen newborns (50% of the sample) were able to complete the DUBOWITZ (1999) protocol, and nine infants (30% of the sample) left the examinations incomplete because they showed signs of stress. In addition, six infants (20% of the sample) were considered over-aged for the DUBOWITZ exam, which is useful to evaluate until 42 weeks age of gestation (Fig.1).

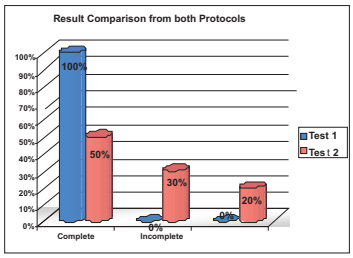

Fig. 1: Correlation of exam application with respect to its finalization. Test 1 represents results obtained with the application of the Neonatal Neuromotor Scanning Protocol (Gonçalves Céu, 1998/2008). Test 2 represents results obtained from the application of Neonatal Neurobehavioral Exam by Dubowitz (1999).

The six infants that didn't submit to the Neurobehavioral Exam because of their age were post-term born. During the

application of the Neonatal Neuromotor Scanning Protocol (GONÇALVES CÉU, 1998/2008), three of those infants showed signs of neurological dysfunction in all parts of the exam.

Table 1- Group characteristics during Protocol application

	Neonatal Neuromotor Scanning Protocol (Nº = 30) N (%)	Dubowitz' Neurobehavioral Exam (Nº = 30)N (%)
Concluded exam	30 (100)	15 (50)
Showed signs of stress during exam	0	9 (30)
Didn't perform the exam	0	6 (20)

As for the time spent during examinations, this study has demonstrated that the Neonatal Neuromotor Scanning Protocol (GONÇALVES CÉU, 1998/2008) took an average time of seven minutes to be applied per individual, while the Neonatal Neurobehavioral Exam (DUBOWITZ, 1999) took approximately 30 minutes.

DISCUSSION

Therefore the comparison between results from the application of these protocols with respect to time spent revealed that the Neonatal Neuromotor Scanning Protocol (GONÇALVES CÉU, 1998/2008) offers better time optimization as compared to the Neurobehavioral Exam (DUBOWITZ, 1999).

Here are described the pros and cons of the Neonatal Neuromotor Scanning Protocol. Its advantages are: average time spent per examinations (seven minutes); short item presentation (one page long) and easy to follow information due to images; better visualization of results which favors quick conclusions when it comes to postural tonus (Tab. 2).

Table 2- Presentation of advantages e disadvantages of Protocol's application

Variables	Neonatal Neuromotor Scanning Protocol	Dubowitz' Neurobehavioral Exam
Average time for protocol application	Seven minutes	30 minutes
Protocol Presentation	One page long with 18 items	Four page long with 34 items
Graphical Presentation	Easy to follow figures	Small figures with text word difficult to visualize
Important issues for the Detection of hyper tonicity	All included	Lacks the Scarf Sign maneuver
Advantages	Quick and easy application; 100% sample examined; Simple diagnostic conclusion based upon score addition. Does not lead to stress applicable; all at once.	It involves a more complex evaluation, Including both motor and behavioral Infant's aspects.
Disadvantages	There weren't identified on any aspects as far as examination and diagnostic conclusion.	Due to its greater complexity, it demands more time for its full application, so it takes longer to reach the conclusion Takes adequate time and environment conditions to be applied, which is not always possible considering an ever greater demand for SUS assistance.

Furthermore, the Neonatal Neuromotor Scanning Protocol has fewer items than Dubowitz' Neurobehavioral Exam. On the other hand, it is more objective since directly evaluates body regions where early tonus alterations tend to be manifested. The first protocol includes observations of wrist, elbow, shoulder, ankle, knee and hip range of motion (ROM). Whenever abnormalities of ROM are present, that could be an indication of altered tonus. In addition, it searches for automatic head and neck reactions, such as the Labyrinth Rectifying Reaction, and other primitive reflexes.

Moreover, it includes the examination of the Scarf Sign, which is of great relevance for early diagnosis of neurological abnormalities. This particular sign enables the identification of pectoral girdle spasticity, through the observation of an incomplete ROM or at positive joint hyper-extensibility. Both Dr. KONG and Mrs. QUITON (1980), who are considered pioneers on neonatal neurological research, concluded that spasticity installs itself following a cephalic-caudal orientation.

Throughout the flexion return examination it is possible to identify presence of Lead-pipe response (indication of upper motor neuron lesion). Also, the examination of passive ROM may indicate the presence of Cog-wheel sign (indication of upper motor neuron lesion). This protocol may be applied for a long period on the same subject, from birth up to three months of corrected gestation age. This study did not revealed any disadvantage on its application.

The advantages of the DUBOWITZ' Neurobehavioral Exam include a more complex evaluation of the newborns' neurobehavioral state, as well as a visual and hearing system examination, with the corresponding classification of the infants' Central Nervous System (CNS) maturation. The disadvantages include a greater time required for its application, thus its inadequacy face actual health care pediatrics demands. Since this protocol has the objective of identifying neuromotor dysfunctions it would be of upmost importance to include the observation of the Scarf Sign, for detecting shoulder girdle hypertonic signs.

Those conditions support the idea that the utilization of the Neonatal Neuromotor Scanning Protocol (GONÇALVES CÉU, 1998/2008) permits the examiner to intervene immediately once postural tonus alterations are present.

CONCLUSION

This study leads to the conclusion that the Neonatal Neuromotor Scanning Protocol (GONÇALVES CÉU, 1998/2008) presents greater advantages than the Neurobehavioral Exam from DUBOWITZ (1999). Also, it is concluded that the first protocol is a valuable tool for detecting neuromotor dysfunctions even on infants born after 42 weeks of gestation. Positive signs of neuromotor dysfunctions were observed on all items of the examination, including six post-term infants examined. The Infant Motor Scale of

Alberta (PIPER, 1992) was taken as a reference to support such conclusion.

The utilization of the Neonatal Neuromotor Scanning Protocol (GONÇALVES CÉU, 1998/2008) at clinical practice of the SUS (Public Health System) allows the examination of all high-risk newborns, as well as permits immediate diagnostic conclusion. Hence, the physical therapist may initiate early rehabilitation intervention with the objective of minimizing brain lesion effects.

REFERENCES

ALS H. A synactive model of neonatal behavioral organization: framework the assessment of neurobehavioral development in the premature infant and for support of infants and parents in the neonatal intensive care environment, Phys Occup Ther Pediatr. 1986; 6: 3-4.

ANNUNCIATO, NF. O processo plástico do sistema nervoso. Apostila. Curso plasticidade do Sistema Nervoso. Rio de Janeiro, 1995.

BANICH, MT. Neuropsychology: The Neural Bases of Mental Function. New York: Houghton Mifflin Company, 1997.

BUSSAD, VSR. Plasticidade e esteriotipia no desenvolvimento de padrões instintivos. Psicologia USP, São Paulo, 1995; 1(6): 195-230.

DUBOWITZ, L. DUBOWITZ, V. The Neurological Assessment of the Preterm and Full-term Newborn Infant. Philadelphia: Lippincott; 1999.

DUBOWITZ, L. Clinical Assessment of gestational age in the newborn infant, J Pediatrics. 1970; 77:1.

GONÇALVES, Céu MP., & SILVA, VF. A Influência da Intervenção Sensório-Motora Essencial no Desenvolvimento Motor em Bebês Prematuros Portadores de Disfunções Neuromotoras. XXIV Simpósio Internacional de Ciência do Esporte: Vida Ativa para o Novo Milênio. Revista Brasileira de Ciência e Movimento, Edição especial, São Paulo. 2001;171.

GONÇALVES, Céu MP., & SILVA, VF. Prática Sensório-Motriz Construtiva: Efeitos no Desenvolvimento de Prematuros com Disfunções Neuromotoras. Revista Fisioterapia Brasil. Rio de Janeiro. 2002; 3(5):319-326.

GONÇALVES, Céu PM. Dissertação: "A Importância da Intervenção Sensório-Motora Essencial Aplicada desde a U.T.I. Neonatal, na Recuperação Motriz de Bebês Prematuros, Portadores de Disfunções Neuromotoras Decorrentes da Síndrome Hipóxico-Isquêmica". Mestrado em Ciência da Motricidade Humana. Universidade Castelo Branco-RJ; 2002.

GONÇALVES, Céu MP; SILVA, V F & PORTO MACSC. Effects of Essential Sensory-Motor Intervention Program (ISME) in the Motor Rehabilitation of premature Newborns with Neuromotor Dysfunctions. FIEP BULLETIN. Special Edition-Article-I. 2008;78: 444-448.

GONÇALVES, Céu MP. Importância do Diagnóstico Precoce: Sinais precoces de lesão cerebral em RN. Revista da Sociedade Medica de Petrópolis, 1999; (IV)8:4-7.

GIROLAMI, G. & CAMPBELL, S. Efficacy of a Neuro-Developmental Treatment Program to Improve Motor Control in Infants Born Prematurely. Pedriatric Physical Therapy, 1994;6:175–184.

WAJNSZZTEIJN, R. Prevenção na UTI neonatal. XV Congresso de Neurologia e Psiquiatria Infantil–Diagnósticos Novas Terapêuticas E Novos Paradigmas. RJ: ABENEPI. 1999.

HORTWITZ, SJ & AMIEL-TISON, C. Problemas Neurológicos. In: Alto Risco em Neonatologia. 2ª ed. Rio de Janeiro: Interamericana; 1982.

KANDEL, ER & SCHWARPZ, JH. Principles of Neural Science, 2ª ed. New York: Elsevier/North Holland; 1985.

KANDEL, ER; SCHWARPZ, JH; JESSELL, TM. (1997). Fundamentos da Neurociência e do Comportamento. Rio de Janeiro, Ed. Prentice-Hall do Brasil.

KLAUS, M & KLAUS, PH. O Surpreendente Recém-nascido. P. Alegre, Art. Medica; 1989.

KONG, E. Diagnóstico e Tratamento Precoce dos Distúrbios do Movimento Causados por Lesões Centrais. Original o: Kinderarztliche Práxis, 1999; 4: 222-234 – Kirchheim - Verlag Mainz.

LUNDY – EKMAN, L. Fundamentos da Neurociência para a Reabilitação. Rio de Janeiro, Ed. Guanabara Koogan; 2000.

LEITE, LP; TERRA-BUSTAMANTE, VC. Plasticidade cerebral e epileptogênese: evidencias a partir de estudos neuropatológicos humanos e experimentais. http://www.biotecnologia.com.br/9j.htm. 2000.

PIPER, MC, et al. Early developmental screening: Sensitivity and specificity of chronological and adjusted scores. Dev. Behav.Pediatr. 1992;13:95-101.

SCHIMIDT, RA. Motor Control and Learning: A Behavioral Emphasis. Champaign, Illinois: Human Kinetics Publishers; 1982.

PRACTICALITY AND EFFECTIVENESS OF THE PHYSICAL EXAMINATION PROTOCOL FOR NEONATAL NEUROMOTOR SCANNING.

ABSTRACT

Introduction: The growing number of premature conceptions could increase the probability of newborn cerebral injuries. From 25% to 30% of high risk newborns show signs of neuromotor dysfunctions. **Objective:** Verify the pros and cons of the Neonatal Neuromotor Scanning Protocol, as opposed to the Neonatal Neurobehavioral Exam, for early diagnosis of neuromotor dysfunctions. **Methodology:** The Neonatal Neuromotor Scanning Protocol was developed including objective data directly related to changes and manifestations of tonus alterations and also about motor reflex responses. The proposed protocol is easy to apply and to interpret. It presents 5 scores for each evaluated item, producing a final punctuation which corresponds to a neuromotor classification. During the elaboration of this protocol there were performed reliability tests using the Dubowitz Neonatal Neurobehavioral Exam (1999) as gold standard. The sample was composed of 30 premature newborns in need of special care, hospitalized at the NICU of the Hospital, located in the county of Petrópolis, RJ-Brazil. Initially, data was collected randomly by sorting two names of mothers out from the total mothers' names. The data collected was submitted to Pearson's' qui-squared testing for statistical analysis. **Results**: From all individuals tested, 100% were able to complete the entire evaluation using the Neonatal Neuromotor Scanning Protocol (1998/2008). On the other hand, only 50% of the individuals tested were able to complete the Dubowitz protocol (1999). As for the time spent during examinations, this study has demonstrated that the Neonatal Neuromotor Scanning Protocol took an average time of seven minutes to be applied per individual, while the Neonatal Neurobehavioral Exam took approximately 30 minutes. Conclusion: Because of its practicality and effectiveness, the Neonatal Neuromotor Scanning Protocol has been implemented at the public health units of Petrópolis which offer neonatal assistance, such as NICUs, since 2005.

KEY-WORDS: Neonatal evaluation protocol, Neonatal Neuromotor Scanning Protocol, Prematurity.

LA PRATICITÉ ET L'EFFICACITÉ DU PROTOCOLE DE L'EXAMEN PHYSIQUE POUR LE TRIAGE NEUROMOTEUR NEONATAL

RÉSUMÉ

Introduction: L'on considère le nombre croissant d' accouchements prématurés, qui peuvent entraîner comme

consequence pour le nouveau-né une probabilité plus importante de dommages cérébraux. Qu'environ 25% à 30% des prématurés à haut risque présentent des anomalies neuromotrices. **Objectif:** Vérifier les avantages et les inconvénients du Protocole de Triage Neuromoteur Neonatal par rapport à l'Examen Neonatal Neurocomportemental pour le diagnostic precoce des déviations neuromotrices. **Métodologie:** Un protocole de triage neuromoteur neonatal a été elabore, comprennant une collecte objective de données ayant rapport direct avec l'installation et la manifestation de l'altération du tônusl et de la motricité réflexe. Le protocole proposé est d'application aisée et d'interprétation simple. Il présente 5 scores pour chaque aspect évalué, menant à une note finale, qui permet de classer le bébé. Pendant l'élaboration du protocole, des tests de fiabilité ont été réalisés employant comme référence l'Examen Neurocomportemental Dubowitz (1999). La population qui fit l'objet de l'étude était composée par 30 nouveaux-nés prématurés, qui avaient besoin de soins spéciaux, et ont dû séjourner à l'UTIN de l'Hôpital-École de la Commune de Petrópolis/RJ, Brésil. Une collecte de dones randomisée a eut lieu, deux noms de mères de nouveaux nés étant au sort le jour de l'examen. Les données obtenues ont été soumises au test X2 de Pearson. Résultats: A partir des prématurés étudiés, (100%) ont pû conclure l'évaluation par le protocole de Gonçalves Céu (1998/2008). Cependant, (50%) de l'échantillonnage seulement a pû conclure le protocole de Dubowitz (1999). En ce qui concerne le temps requis pour la réalisation des examens, cette étude a demontre que le protocole de triage des signes neurologiques (1998/2008) exigea un temps moyen de sept minutes par examen. La réalisation de l'examen néocomportemental (1999), le temps moyen d'application par bébé s'éleva à trente minutes. **Conclusión:** En fonction de la practicité et de la confiabilité présentée au cours des études réalisées, le protocole est adopté par le réseau publique de santé de Petrópolis/RJ dans les unités qui soignent les enfants et dans les UTIN depuis 2005.

MOTS-CLÉ: Protocole d'ávaluation néonatale. Protocole de Triage Neuromoteur Nénatal. Prématurité.

LA PRACTICIDAD Y LA EFICACIA DEL PROTOCOLO DE EXAMEN FÍSICO PARA SELECCIÓN NEUROMOTORA NEONATAL.

RESUMEN

Introducción: Considerando el creciente número de partos prematuros, que pueden traer como consecuencia para el recién nacido una mayor probabilidad de daño cerebral. Alrededor de 25% a 30% de los prematuros de alto riesgo presentan disfunciones neuromotoras. **Objetivo:** Verificar las ventajas y las desventajas del Protocolo de Selección Neuromotora Neonatal comparado com el Examen Neonatal Neurocomportamental, para o diagnóstico precoz de las disfunciones neuromotoras. **Metodologia:** El Protocolo de Selección Neuromotora Neonatal, consta uma recolección de datos directamente corelacionados a la manifestación de la alteración del tonus, y uma investigación de la motricidad refleja. El protocolo propuesto es de fácil aplicabilidad y interpretación. Presenta 5 resultados en cada item, obteniéndose uma puntuación final, la cual clasifica el comportamiento motor. Durante la elaboración del protocolo fueron realizados tests de confiabilidad utilizándose como patrón oro el Examen Neurocomportamental. DUBOWITZ (1999). La población del estudio estaba compuesta por treinta recién nacidos prematuros que necesitaron cuidados especiales. Debiendo permanecer em la UTIN, Petrópolis. Fue realizada uma recolección de datos al azar: el día del examen fue efectuado um sorteo de dos nombres de las madres de los prematuros para la realización de los exámenes. Los datos obtenidos fueron interpretados a través del test qui-cuadrado de Pearson. Resultados: De los bebés estudiados, 100% consiguieron finalizar la evaluación por el protocolo de Gonçalves Céu (1998/2008), mientras que solamente el 50% de la muestra consiguió concluir el protocolo de Dubowitz (1999). Com relación al tiempo utilizado para la realización de los exámenes, el protocolo de selección de las señales neurológicas (1998/2008) presentó um tiempo promedio de siete minutos por examen, mientras que para la realización del examen neurocomportamental (1999), el tiempo promedio de aplicación por bebé fue 30 minutos. **Conclusión:** En función de la practicidad y confiabilidad presentada em los estudios, el protocolo está implementado en la Red Pública de Salud de Petrópolis en las unidades que dan asistencia a la salud del niño y las UTIN desde 2005.

PALAVRAS-CLAVE: Protocolo de Evaluación Neonatal, Protocolo de Selección Neuromotora Neonatal, Premaduración.

A PRATICIDADE E A EFICÁCIA DO PROTOCOLO DE EXAME FÍSICO PARA TRIAGEM NEUROMOTORA NEONATAL.

RESUMO

Introdução: Considerando o crescente número de partos prematuros, que podem trazer como conseqüência para o recém-nato pré-termo uma maior probabilidade de injurias cerebral. Cerca de 25% a 30% dos prematuros de alto risco, apresentam disfunções neuromotoras. **Objetivo:** Verificar as vantagens e as desvantagens do Protocolo de Triagem Neuromotora Neonatal comparado com o Exame Neonatal Neurocomportamental, para o diagnóstico precoce das disfunções neuromotoras. **Metodologia:** O Protocolo de Triagem Neuromotora Neonatal, consta de uma coleta de dados diretamente correlacionados com a manifestação da alteração do tônus; e pesquisa da motricidade reflexa. O protocolo é de fácil aplicabilidade e interpretação. Apresenta 5 escores em cada item, obtendo-se uma pontuação final, este classifica o comportamento motor do bebê. Durante a elaboração do protocolo foram realizados testes de confiabilidade utilizando-se como padrão ouro o Exame Neurocomportamental DUBOWITZ (1999). A população do estudo foi composta de 30 recém-natos prematuros, que necessitaram de cuidados especiais, tendo que permanecer na UTIN do Hospital Alcides Carneiro do Município de Petrópolis. Foi realizada uma coleta de dados randomizada, no dia do exame era feito sorteio, de dois nomes das mães dos RNPT para a realização dos exames. Os dados obtidos foram tratados através do teste qui-quadrado de Pearson. Resultados: Dos pré-termos estudados, (100%) finalizaram a avaliação pelo protocolo de Gonçalves Céu (1998/2008). Entretanto, somente (50%) da amostra conseguiu concluir o protocolo de Dubowitz (1999). Com relação ao tempo gasto este estudo demonstrou que o protocolo triagem (1998/2008) apresentou um tempo médio de sete minutos por exame. Enquanto, que, para a realização do exame neurocomportamental (1999), o tempo médio de aplicação por bebê foi de trinta minutos. **Conclusão:** Em função da praticidade e confiabilidade apresentada nos estudos realizados, o protocolo está implementado na rede Pública de Petrópolis nas unidades que prestam assistência a saúde da criança e nas UTIN desde 2005.

PALAVRAS-CHAVE: Protocolo de avaliação neonatal, Protocolo de Triagem Neuromotora Neonatal, Prematuridade.

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