Journal of Advanced Zoology

ISSN: 0253-7214

*Volume **44** Issue **S-2 Year 2023** Page **4413:4417***

THE IMPORTANCE OF ENMG EXAMINATION IN THE DIAGNOSIS OF HYPOTENSION SYNDROME IN YOUNG CHILDREN

Shamansurov Shaanvar Shamuratovich - Professor, MD, head of the Department of "Nervous Diseases of childhood" of the Center for the development of professional qualifications of medical personnel, doctor of medical sciences, professor

N.A.Mirsaidova - Candidate of Medical Sciences, pediatric neurologist

D.B. Akhmedjanova - The base of doctoral student of the Department "Nervous Diseases of childhood " of the Center for the development of professional qualifications of medical personnel Tashkent, Uzbekistan

Article History
Received: 12 July 2023
Revised: 10 September 2023
Accepted:10 Nov 2023

Abstract: The purpose of the study. Comparison of electrophysiological (EMG, ENMG) indicators in young children with muscular hypotension syndrome and development of ENMG criteria for topical diagnosis. In the period 2022-2023, 105 children with muscular hypotension syndrome (SMH) of early age (0-3 years) were examined. All patients were divided into 4 groups according to clinical and anamnestic, ultrasound, Doppler and electrophysiological parameters. In the course of this scientific study, new ENMG criteria were identified, indicating suprasegmental changes in the clinical ENMG diagnosis of muscular hypotension syndrome in young children We believe that the increase in the amplitude of the M-response received from the peroneal nerve, the registration of giant F-waves, is due to a decrease in the inhibitory effect of the suprasegmental apparatus on the segmental with changes in the central nervous system. This additional examination means that it is effective in diagnosing not only changes in the peripheral nervous system, but also changes of the central type.

Keywords: young children, muscular hypotension syndrome, ENMG

The increase in disability due to neurological disorders among children is one of the medico-social problems of the whole society. Most of the patients observed in the movement system are experiencing complications due to poor early diagnosis and the late detection of the cause and the lack of timely treatment.

Early signs of kharakat disorders in children are manifested by impaired muscle tone, limited movement volume, and lagging in the developmental stages [1,7,8]. The diagnosis of motor development disorders in children of early age is based on various scales, tests (Prextl and b.) as well as neurovisualization (MRI, CT, NSG), neurophysiological (EMG, ENMG, EEG), laboratory diagnostic tests. But in some cases, the results of this examination do not provide enough data.

In assessing the functional state of the neuromuscular system and its centers of motion, electrophysiological methods are considered non-invasive methods. With these methods, it is

possible to study the bioelectric activity of the nervous muscle system without harm to health. The main of these techniques is electromyography. Scientific and technical improvements in medicine made it possible to develop new diagnostic methods based on the recording of somatosensory called potentials by excitation of nerves by electric current. When comparing the literature, not enough information was obtained that electrophysiological methods were used in a complex way in children of early age with movement disorders .

Thus, when assessing the activity of the movement system of children at an early age, in combination with clinical subjective methods, it is important to diagnose the disease and apply complex electrophysiological examinations that help determine its severity, topology, select rehabilitation measures.

Research objective. Comparison of electrophysiological (EMG, ENMG) indicators in early childhood children with muscle hypotonia syndrome as well as the development of ENMG criteria that help in topic diagnosis.

Research methods. In the period 2022-2023, 105 children with muscle hypotonia syndrome (MGS) of early age (0-3 years) were examined at the 1st children's Clinical Hospital of Tashkent City. Of this, boys made up 57 (54.2%) and girls made up 48 (45.7%).

All patients were divided into 4 groups according to clinical anamnestic, ultrasonic, dopplerographic and electrophysiological indicators.

Children with MGS of the central type (Group 1) were 31 (29.5%), children with MGS of the peripheral type (Group 2) were 24 (22.8%), mixed-i.e. children with MGS of the Central and peripheral types (group 3) were 46 (43.8%) and children with MGS were of the genealogical type (Group 4) were 4 (3.8%). A control group of 20 healthy children was also formed to compare the indicators obtained. Clinical-anamnestic, ultrasonic, dopplerographic and electrophysiological indicators in all groups of children were studied on the basis of statistical comparison.

ENMG testing was carried out on a 2-channel electromiography apparatus from "Neurosoft".

Superficial EMG-the method of recording and studying the bioelectric potentials of the muscle during relaxation and contraction by attaching superficial electrodes to the skin at the point of action of the muscle being examined. This method is noninvasive, painless and quick to perform, and the biopotentials of the muscles are summed, that is, global.

In this method, m. biceps brachii, m. tibialis anterior is actively reduced and at rest bioelectric potentials are recorded with amplitude, shape and frequency indicators, the interpretation was made according to Yu.S.Yusevich.

Needle EMG is a method of studying muscle movement fibers, units of movement by entering the needle electrodes into the muscle and recording the biopotentials of the muscle in a calm and hectic time. By this method, m. biceps brachii, m. tibialis anterior examined. Needle EMG has been applied to distinguish between muscular hypotonia-mediated progeny disorders as well as to exclude from research.

Stimulation electroneuromyography (ENMG) consists of a complex of methodologies based on obtaining a response using electrical stimulation to excite the nerve at its most favorable point. Nowadays, in order to achieve a reliable result, the improvement of the methodological base of ENMG's stimulation methodologies allows the study of a large number of peripheral nerves.

Classical stimulation ENMG includes a whole complex of methodologies. From these, methods were applied to study permeability across motion fibers, i.e. the method of studying motor response and rate of permeability across motion fibers, F wave. During the examination, the frequency of occurrence of block, monomorph and giant waves in the F-wave was compared by the amplitude of the M-response in the small and large calf nerves, stimulation of the large calf nerve.

Statistical processing of the data obtained was carried out using the difference index based on the Xi-square of the Manna-Whitney test I Pearson. The assessment of the diagnostic ability of mycorrhizal indicators was carried out by viewing ROC curves. Statistical calculations were carried out using the Statistica version-13 software packages.

The results of a study. The results of the electromyographic examination are presented in Table 1. According to the result of the ENMG examination performed the average M response

amplitude of n. peroneus motor was 3.65±0.11 (right) - 3.16±0.16 (left) in Group 1 patients, in Group 1 patients was 2.63±0.1 (right), 2.31±0.12 (left), p<0.01, in Group 4 was 2.21±0.21 (right), 2.39±0.47 (left) p<0.01, in the control group was 3.2±0.1 (right), 3.4±0.17 (left), p<0.01.

In 23 patients of the 1 group (74.19%) n.peroneus amplitude indicators higher than n. peroneus amplitude indicators of healthy control group (>3.5 MW), the same indicator (2.5-3.5 MW) was found in 8 individuals (25.8%).

Only 1 patient of the second group amplitude monitoring of the n.peroneus has a relatively higher than indicators of healthy control group (4.1%) (>3.5 MW), 7 patients (29.1%) was (2.5-3.5 MW), 16 patients (66.6%) low (<2.5 MW) exactly.

In 6 patients of the 3rd group (13%) amplitude indicators of n.peroneus higher than indicators of healthy control group (>3.5 MW), 13 patients (28.2%) was (2.5-3.5 MW), 27 patients (58.6%) low (<2.5 MW) exactly.

In 1 patient (28.2%) of the 4th group amplitude monitoring of the n.peroneus (2.5-3.5 MW), 3 patients (58.6%) was low (<2.5 MW) clearly defined (1-table).

Table 1. In the studied groups, the average values of M responses recorded by the motor fibers n.Peroneus and n. Tibialis

	N.Peroneus M-response amplitude M±m			N.Tibialis M-response amplitude M±m		
	Right	Left	P	Right	Left	P
Group 1	4,1±0,11	3,99±0,07	<0.01	8,37± 0,2	9,36±0,17	<0.01
Group 2	2,18±0,1	2,06±0,1	<0.01	4,11± 0,2	4,56±0,19	<0.01
Group 3	2,63±0,1	2,31±0,12	<0.01	8 ± 0,17	7,88±0,21	<0.01
Group 4	2,21±0,21	2,39±0,47	<0.01	4,2 ± 0,5	4,96±0,29	<0.01
Control group	3,2±0,1	3,4±0,17	<0.01	6,5±0,2	6,8±0,13	<0.01

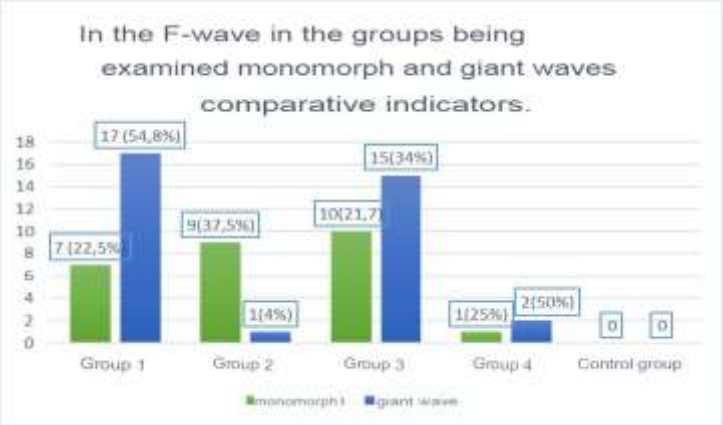
The average amplitude of n.tibialis is 8.37± 0.2 (right-hand side), 9.36±0.17 (left - hand side) p<0.01, 2-group 4.11± 0.2 (right - hand side), 4.56±0.19 (left-hand side) p<0.01, the 3rd group 8 ± 0.17 (right-hand side), 7.88±0.21 P <0.01 (left-hand side) (P<0.01), 4th group had 4.2 ± 0.5 (right side), 4.96±0.29 (left side) (p<0.01). The control group was 6.5±0.2 (right side), 6.8±0.13 (left side) (P<0.01).

The indicators of the ENMG examination of the examined group of patients M-response amplitude is relatively high in children in 1 group when the control group compares patient indicators, the remaining group of patients had lower rates. It has been found that the greater Beaver nerve indicators are high in Group 1 and 3, and low in Group 2 and 4 compared to the control group.

Late f waves from the greater calf nerve were recorded and when the results were analyzed, 7 (22.5%) monomorph, 19 (61.2%) giant F waves in Group 1 patients, 9 (37.5%) monomorph F waves in Group 2 patients, 1(4%) giant F waves were recorded, 21 (45.6%) monomorph F waves in

Group 3, 15 (32.6%) giant waves, 1 (25%) monomorph F waves and 2 (50%) giant F wave was recorded in Group 4. No such cases were recorded in the control group (diagram 3).

Diagram 3



During the course of this scientific study, new ENMG criteria were identified that indicate suprasegmentary changes in the clinical - ENMG diagnosis of muscle hypotonia syndrome, which occurs in children of early age. We believed that an increase in the amplitude of the M response obtained from the small calf nerve, the recording of giant F waves, in our opinion, occurs from a decrease in the braking effect of the suprasegmentary apparatus on the segmental apparatus in changes in the central nervous system. This additional examination indicates that it is effective in the diagnosis of not only changes in the peripheral nervous system, but also changes of the Central type.

In conclusion, it can be said that the early diagnosis of hypotonia in children of an early age, the identification of hereditary diseases accompanied by hypotonia, comparative reassurance that hypotonia is central or peripheral Genesis and the choice of treatment tactics can help practical doctors, as well as the selection of corrective measures aimed at eliminating changes, as well as improving the effectiveness of treatment.

The results obtained indicate the high effectiveness of differential electroneuromiographic diagnostics in muscle hypotonia syndrome.

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