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VIOLATION OF THE RATE OF PSYCHOMOTOR DEVELOPMENT IN YOUNG CHILDREN WITH SOMATIC PATHOLOGY

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ANNOTATION

"Psychomotor" development refers to changes in a child's cognitive, emotional, motor, and social abilities from the beginning of life through the embryonic and neonatal periods, infancy, childhood, and adolescence. This happens in a wide variety of fields. Knowledge of typical child development and related theories and models is very useful for clinical practice, leading to the recognition of developmental disorders and how to treat them. A thorough but focused history and neurological examination remain the most important initial elements of neurological diagnosis at any age.

Key words: psychomotor development, somatic pathology

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НАРУШЕНИЕ ТЕМПА ПСИХОМОТОРНОГО РАЗВИТИЯ У ДЕТЕЙ РАННЕГО ВОЗРАСТА С СОМАТИЧЕСКОЙ ПАТОЛОГИЕЙ

АННОТАЦИЯ

"Психомоторное" развитие относится к изменениям в когнитивных, эмоциональных, двигательных и социальных способностях ребенка с самого начала жизни через эмбриональный и неонатальный периоды, младенчество, детство и юность. Это происходит в самых разных областях. Знание типичного развития ребенка и связанных с ним теорий и моделей очень полезно для клинической практики, приводя к распознаванию нарушений развития и способов их лечения. Тщательный, но целенаправленный анамнез и неврологическое обследование остаются наиболее важными начальными элементами неврологической диагностики в любом возрасте.

Ключевые слова: психомоторное развитие, соматическая патология.

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ТЕЗЛИГИНИНГ БУЗИЛИШИ****АННОТАЦИЯ**

"Психомотор" ривожланиш эмбрионал ва неонатал даврларда, чақалоқлик, болалик ва ўсмирлик даврида боланинг когнитив, ҳиссий, ҳаракат ва ижтимоий қобилиятларининг ўзгаришини англатади. Бу турли жараёнда содир бўлади. Одатда болаларнинг ривожланиши ва улар билан боғлиқ бўлган тегишли назариялар ва моделлар ҳақида билиш клиник амалиёт учун жуда фойдали бўлиб, ривожланишдаги касалликларини аниқлашда ва уларни даволашда аҳамиятли. Тўлиқ, мақсадга йўналтирилган анамнез ва неврологик текширув ҳар қандай ёшда неврологик ташхиснинг энг муҳим бошланғич элементлари ҳисобланади.

Калит сўзлар: психомотор ривожланиш, соматик патология

The relevance of the problem. The prevalence of psychomotor development delay (PMTD) among the child population is 8-10% [1,2,3,4]. SPD of somatogenic origin occurs in children with chronic somatic diseases of the heart, aorta and large vessels, lungs, kidneys, endocrine system, blood diseases, etc. Disorders of the nervous system in somatic diseases have a lot in common [6,7,8]. Most often, they are functional at first, and then turn into organic, due to metabolic disorders. And this in turn leads to a violation of the psychomotor development of children. There are many unexplored aspects of neurological pathology in somatic diseases in children [11,12]. The problem of somatically conditioned disorders of psychomotor development in children is widely studied in our country. However, there is insufficient data concerning the clinical manifestations, age-related features of the dynamics of psychosomatic disorders in children [9,10].

Objective: to study the features of neuropsychiatric development in sick children with somatic burden (diseases of the gastrointestinal tract, respiratory and cardiovascular systems).

Materials and methods of research. To perform the tasks of the scientific study, a sample was created with the allocation of two groups of clinical observation: 60 children of the main group with somatic pathology and 25 conditionally healthy children of the comparison group. The study was conducted in the somatic department at the TashPMI clinic.

The average age of children in the main group was 19.0 ± 9.3 months, in the comparison group – 18.6 ± 9.7 months ($p > 0.05$). Among the examined children there were 35 (58.3%) boys and 25 girls (41.7%). The main group consisted of children with diseases of the gastrointestinal tract, respiratory and cardiovascular systems. The comparison group consisted of young children of the department who were hospitalized as planned for a control examination, convalescents of somatic diseases and who did not have a deficit in weight indicators at the time of hospitalization. Children with acute infectious inflammatory diseases, severe forms of chromosomal and genetic diseases, and congenital malformations in the decompensation stage were excluded from the study group.

All children underwent a standard clinical examination, including the collection of complaints and anamnesis, general examination, clinical neurological and psychodiagnostic studies. Anamnestic information was obtained when the child was admitted to the department from the outpatient card (registration form 112/y) simultaneously with an active survey of the child's mother. Anamnestic data includes: assessment of social (family composition and completeness, education of family members, presence or absence of bad habits in parents, psychological microclimate in the family), biological (antenatal, intranatal, postnatal) and genealogical history (calculation of the index of the burden of genealogical history). To assess the psychomotor development of children, we used the scale of assessment of the neuropsychiatric development of G. V. Pantyukhina-K. L. Pechora - E. L. Frucht [7]. The method checks the state of eight lines of development: visual and auditory orientation reactions, emotions and social behavior, general movements, actions with objects, speech

understanding, preparatory stages of active speech, skills and abilities in the feeding process. Diagnosis is based on a standardized procedure for observing the child in everyday life, evaluating the reaction to toys, taking into account the information provided by his mother. This scale is designed to study babies from 10 days to 3 years old. The authors developed indicators of these areas of development on a monthly basis in the first year of life, quarterly in the second year and semi-annually in the third year. The list of indicators is a formalized requirements for the skills and abilities of the child in each age micro period. For example, in the field of sensory development, a child in 1 year 1 month should catch differences in the sizes of objects with a difference of 3 cm. In 1 year 7 months—1 year 9 months, he must distinguish between 3 contrasting sizes of objects, and in 2.5 years, select items of 4 primary colors from the sample. When diagnosing play activity and understanding speech, the ability of children to perform play actions according to the instructions of an adult ("feed the doll", "put the doll in the crib", etc.) is revealed. The assessment of the level of development of the VPF was made in points. At the same time, the absence of a particular ability to perform an action in the present time was estimated at 0 points, the delay in the development of the ability in comparison with the age standards for 2-3 epicrisis periods (up to 1 year 1 epicrisis period is 1 month, 1-2 years 1 epicrisis period is 3 months, 2-3 years 1 epicrisis period is 6 months) in 1 point, the presence of the studied skill according to the age standard is 2 points. For children aged 3 months, a score of 14-16 points is regarded as a variant of the age norm; with an assessment of 10-14 points, children are classified as an absolute risk group for developmental delay; a score of 6-9 points indicates developmental delay; a group of children with a score of less than 6 points are patients with severe general developmental delay. After 6 months to 3 years, another parameter is added to the VPF assessment criteria – skills and abilities, so the total number of points increases. A variant of normal development is considered to be a score of 16-18 points, a risk group for developmental delay-12-15 points, developmental delay-8-11 points, severe general developmental delay-if the score is below 8 points.

Statistical processing of the results was carried out using Microsoft Office Excel and Statistica software.

Discussion of the research results. When studying the social history, we found that every third child of the main group had a moderate burden of social history (36.7%), while the children of the comparison group were characterized by a low burden of social history (80%) ($p<0.05$).

When analyzing the biological history, as the antenatal period, it was found that in mothers of sick children, extragenital diseases occurred in 54% of cases, and in the comparison group in 14.5% of women ($p<0.01$). Kidney pathology was significantly more frequent in mothers of children of the main group (15.9%, $p<0.05$), while exacerbation of chronic pyelonephritis during pregnancy in mothers of sick children was noted in 13.7% of cases and 2.3% of pregnant women developed gestational pyelonephritis, while in mothers of children of the comparison group there was no exacerbation of chronic pyelonephritis ($p<0.05$). The frequency of early toxicosis of pregnant women among mothers of children of the main group was 48.3%, and among women of children of the comparison group 8.6% ($p<0.05$). At the same time, there were no severe forms of early toxicosis requiring hospitalization. The pathological course of pregnancy in the form of a threat of termination was detected in every third (29.9% and 11.4%, respectively, $p<0.05$) and gestosis in every second (36.8% and 8.5%, respectively, $p<0.05$) mother of children of the main group, which is 1.3 times more common than in women of children of the comparison group. Anemia of pregnant women developed in every second mother of children of the main group (47.1%), which is 2.5 times more common than in mothers of children of the comparison group ($p<0.05$). Chronic urogenital infections were observed in 13.7% of mothers of children of the main group, which is significantly more frequent than in mothers of children of the comparison group (2.9%, $p<0.05$). When analyzing the features of the intranatal period, we noted that preterm birth was observed 1.8 times more often in the mothers of children of the main group compared to the mothers of children of the comparison group (52.9% and 28.6%, respectively, $p<0.05$). The course of labor in mothers of children of the main group was complicated by weakness of labor forces (35.6%, $p<0.01$), disorganized labor activity (2.3%, $p<0.05$), labor injuries (3.5%, $p<0.05$) and bleeding in the postpartum period (4.6%, $p<0.05$).

A high percentage of cesarean sections was observed in the mothers of the children of the main group in relation to the mothers of the children of the comparison group (31.0%, $p>0.05$).

When analyzing the body's resistance to the frequency of acute respiratory diseases, we obtained the following data. In the main group of children, there was a 1.6-fold decrease in the proportion of children with normal resistance compared to the comparison group and a high incidence of acute respiratory diseases during the year (five or more times a year) ($p<0.01$). Every fourth child of the main group has a low resistance and every tenth child has a very low resistance ($p<0.05$).

We evaluated the presence of chronic somatic pathology.

Russian pediatricians assign the greatest importance in the development of young children to such background conditions as anemia and rickets. In our study, it was found that anemia was 1.8 times more common, and rickets was 6 times more common among sick children compared to children in the comparison group.

When studying the clinical and neurological features of sick children, the syndrome of motor disorders was revealed in 10%, the syndrome of neuro-reflex excitability in 20%, the myotonic syndrome in 11.70%, the vegeta-visceral syndrome in 18.30%, the MMD syndrome in 28.3%, and the cerebrastenic syndrome in 31.7%.

We found that the delay in psychomotor development is 4.5 times more common in children of the main group ($p<0.01$) in relation to children of the comparison group. In the comparison group, only one child had delayed speech development (2.9%). We found a general developmental delay in half of the sick children, as well as in 14% of the children from the control group ($p<0.05$). The total score allows us to generalize the development of higher mental functions. We were also interested in quantifying each individual parameter.

As a result of a quantitative assessment of the neuropsychiatric development of sick children, we found that the degree of delay varies according to various indicators of the development of higher subcortical functions.

The delay in the formation of motor function in children of the main groups averaged 1 epicritic period. The children of the main groups of large motor skills were estimated at 1.59 points, the comparison group-at 1.93 points ($p>0.05$), the development of small motor skills at 1.49 and 1.84 points ($p>0.05$). Considering the results obtained by us in assessing the function of speech, we found that the function of active speech suffers more than its understanding. During the survey, we received a lower assessment of the formation of active speech. The average assessment of the function of active speech in sick children was 1.36-1.49 points. In the children of the control group, active speech was estimated at 1.89 – 1.96 points ($p<0.001$).

The function of passive speech, that is, the ability to understand speech in children was formed late, an average of 1-2 epicritic period, the average rating is 1.4 – 1.6 points ($p>0.05$).

In the diagnosis of sensory development of children, the major groups were formed with a lag of 1 epicritic of time relative to children in the comparison group ($p>0.05$).

The acquisition of social skills, the development of playing abilities in sick children was formed with a lag of 1 epicritic period. The assessment of the formation of the emotional sphere was statistically significantly different. The children of the main groups were dominated by negative emotions, the average score was 1.6-1.8 ($p>0.05$).

Conclusions. Thus, conducting a quantitative assessment of the formation of VPF in sick children allows us to more accurately determine which functions suffer more, and therefore require more correction, using those functions that are formed better. According to the results of our study, the greatest delay was revealed in the formation of fine and large motor skills, active and passive speech, sensory development and the emotional sphere. These results are significantly lower in sick children with chronic somatic pathologies.

List of references

1. Rossman M.J. The CAT/CLAMS assessment for early intervention services. Clinical Adaptive Test/Clinical Linguistic and Auditory Milestone Scale. / Rossman MJ, Hyman SL, Rorabaugh ML, Berlin LE, Allen MC, Modlin JF. // Clinical Pediatrics, 1994. V. 33 № 7. P. 404-9.
2. Rydz D. Screening for developmental delay in the setting of a community pediatric clinic: A prospective assessment of parent-report questionnaires. / Rydz D., Srour M., Oskovi M., Marget N., Shiller M., Birnbaum R., Majnemer & Shevell M.I. // Pediatrics, 2006.V.118. P.1178-1186.
3. Skellern C. A parent completed developmental questionnaire: Follow-up of premature infants. / Skellern C., Rogers Y., O'Callaghan M.J. // Journal of Pediatrics and Child Health, 2001. V.37.P. 125-129.
4. Squires J. Revision of a parent-completed developmental screening tool: Ages and Stages Questionnaire. / Squires J., Bricker D., & Potter L. // Journal of Pediatric Psychology, 1996. V.22 P. 313-328.
5. Teclin J. Pediatric Physical Therapy 4thed. /Teclin J. USA. 2008. P.71-73.
6. Zlofazova M. Yu. Delay in development (clinical and psychological, age and rehabilitation aspects): synopsis. MD-http: <http://www.dissercat.com/content/zaderzhka-psikhicheskogo-razvitiya-kliniko-psikhologicheskie-sravnitelno-vozrastnye-i-reabil> # ixzz56rE4ZJyW
7. Borovtsova L. A., Kozodaeva L. F. Prevention of speech disorders in young children // Psychological and pedagogical journal Gaudeamus. - 2015. - № 1 (25). - paragraphs 111-120
8. Klee T. Concurrent and predictive validity of an early language screening program. / Klee T., Carson D. K., Gavin W. J., Hall L., Kent A., & Reece, S. // Journal of Speech, Language, and Hearing Research, 1998. V.41. P. 627-641.
9. Lee L.L.S. Psychometric properties and standardization samples of four screening tests for infants and young children: A review. / Lee L.L.S, Harris SR. // Pediatric Physical Therapy, 2005. V.7. P 140-147.
10. Macias M.M. Infant screening: The usefulness of the Bayley Infant Neurodevelopmental Screener and the Clinical Adaptive Test/Clinical Linguistic auditory Milestone Scale. / Macias, M.M., Saylor, C.F., Greer, M.K., Charles, J.M., Bell, N., Katikaneni, L.D. // Developmental and Behavioral Pediatrics, 1998. V.19. P.155-161
11. National Association for the Education of Young Children. Screening and Assessment of Young English-Language Learners. - Supplement to the NAEYC position statement on early childhood curriculum, assessment, and program evaluation, 2005.
12. Rose-Jacobs R. The Movement Assessment of Infants (MAI) as a predictor of two-year neurodevelopmental outcome for infants born at term who are at social risk. / Rose-Jacobs R., Cabral H., Beeghly M., Brown E.R., Frank D.A. // Pediatric Physical Therapy, 2004. V. 16(4) P. 212-221.