УДК 004.2

PROGNOSIS OF THE FORMATION AND DIAGNOSIS OF UNDIFFERENTIATED CONNECTIVE TISSUE DYSPLASIA TO ASSESS THE FURTHER CHILD WELLBEING

ПРОГНОЗУВАННЯ ФОРМУВАННЯ ТА ДІАГНОСТИКА СИНДРОМУ НЕДИФЕРЕНЦІЙОВАНОЇ ДИСПЛАЗІЇ СПОЛУЧНОЇ ТКАНИНИ ДЛЯ ОЦІНКИ ПОДАЛЬШОГО СТАНУ ЗДОРОВ'Я ДИТИНИ

Vasiukova M.M./Васюкова М.М.
c.m.s., assoc. prof./ к.м.н., доц.
Pochynok T.V./Починок Т.В.
d.m.s., prof./д.м.н., проф.
Kudlatska-Tyshko I.S./ Кудлацька-Тишко І.С.
sixth-year student/студентка шостого курсу
Kazakova L.M./ Казакова Л.М.
c.m.s, assistant lecturer./к.м.н., ас.
Bogomolets National Medical University, Kyiv, T. Shevchenka blvd. 13, 01601
Національний медичний університет ім. О.О. Богомольця, Київ, бул. Т. Шевченка 13, 01601

Annotation. *Analysis of perinatal anamnesis of 590 children ages from 3–14 years old with the help of a specially designed computerized information retrieval system made it possible to detect and verify the leading pathology in pregnant women contributed to the formation of uCTD syndrome: the presence of 2 or more leading adverse conditions (prematurity, toxicosis in the first trimester of pregnancy, high risk of miscarriage, autonomic dysfunction in the mother in the first half of pregnancy, birth by Caesarean section), are prognostic for the birth of a child with uCTD syndrome. Significant changes found in the health status of children with uCTD syndrome increased with age, which was strongly associated with increased collagen breakdown (according to the levels of hydroxyproline and glycosaminoglycans in the urine), impaired immunity (decrease in indicators of local immunity immunoglobulins (Ig) - IgA and sIgA in saliva), phagocytosis (phagocytosis activity and oxygen-dependent neutrophil metabolism) and activation of lipid peroxidation. The conducted research confirms the expediency of introducing the appropriate background condition of uCTD syndrome manifestations of syndromic pathology and associated diseases into a letter of the specified diagnoses of the polyclinic card (health records) of the child's development.*

Keywords. *Children, syndrome of undifferentiated connective tissue dysplasia (uCTD syndrome), MASS-phenotype, Ehlers-like phenotype, Marfan-like phenotype, prognostic criteria of uCTD syndrome development.*

Introduction. The complexity of morphology, functions and the prevalence of connective tissue in the body determine the active participation of its main elements in the formation and development of many types of pathology [1, 2]. At the same time, recently discovered information about the role of exogenous factors in the

development of disorganization of connective tissue. Dysplastic changes in the connective tissue can be caused by an unfavorable ecological situation, inadequate nutrition, and stress affecting the body during ontogenesis [3],

Methods. An analysis of the prenatal history of 590 children aged 3-14 years with the help of a specially designed computerized information retrieval system made it possible to detect and verify the leading pathology that was recorded in women, which made it possible to predict the birth of a child with undifferentiated connective tissue dysplasia with high probability.

Results and Discussion. In terms of significance, the pathology of pregnant women, which was observed in mothers of children with UCTD, was distributed as follows:

– premature babies were registered only in the group of children with UCTD;

– the threat of miscarriage was observed 4 times more often in children with UCTD than without this pathology;

– toxicosis of the first half of pregnancy met 3 times more often;

– the autonomic dysfunction of the mother in the first half of the pregnancy was recorded twice as often in the mothers of children with UCTD;

– A significant number of children with UCDT were born by Caesarean section (3 times more often).

Other unfavorable factors (toxicosis of the second half of pregnancy, anemia of pregnant women, acute infectious pathology and exacerbation of chronic pathology in the mother) were observed in equal numbers in mothers of children with uCTD syndrome and without signs of connective tissue dysplasia.

On average, children with uCTD syndrome had 1.65 adverse pregnancy factors per 1 child compared with healthy children (0.92 per 1 child). Further analysis allowed to assert that the presence of 2 or more leading adverse conditions that were recorded in the mother during pregnancy are prognostic regarding the birth of a child with uCTD syndrome. The problem of differentiated treatment of various clinical forms of uCTD syndrome is extremely complex and requires individualized

consideration of the clinical manifestations of uCTD syndrome. We used the principle of clinical distribution of children into groups proposed by T.I. Kadurina [4], which is quite indicative and convenient to use by a practical doctor:

1. For the MASS-like phenotype there are characteristic signs of generalized connective tissue damage, manifested by skeletal abnormalities, residual signs of rickets, thinning or subatrophy areas of the skin, heart lesion (more often valve flaps);

2. Ehler-like phenotype accompanied by skeletal anomalies (posture obstruction, flat feet), hyperextensibility of the skin and ligaments, manifested by varying degrees of hypermobility of the joints, angioectasias, a large number of pigment spots;

3. Marfan-like phenotype is characterized by asthenic physique, residual signs of rickets, characteristic dolichostenomelia, arachnodactyly, cardiac lesions in the form of small anomalies (valve prolapses, additional chords), vision impairment.

Conducted complex clinical and laboratory studies revealed that a significant number of children in Kyiv have a uCTD syndrome of varying severity, and the number of children with manifestations of this state increases with age. uCTD syndrome is found in preschool children - in 64.9% and in school age - in 86%. Studies have also made it possible to clarify the structure of the uCTD syndrome: the MASS-like phenotype (38%) was more likely to be observed than Ehler-like and Marfan-like phenotypes (25% and 23% respectively). Also, 40% of children had severe changes in the connective tissue (10 or more stigmas of dysembryogenesis and developmental abnormalities), which further worsens child’s health with age, and leads to the formation of systemic pathology in adulthood. There was also an increase in changes in the health status of children with uCTD syndrome, which was strongly associated with an increased collagen breakdown (according to the levels of hydroxyproline and glycosaminoglycans in the urine), impaired immunity (decreased levels of local immunity immunoglobulins (Ig) - IgA and s Ig A in saliva), phagocytosis (phagocytosis activity and oxygen-dependent metabolism of neutrophils) and activation of lipid peroxidation (LP) than in children who do not

have manifestations of uCTD syndrome. Most children with uCTD syndrome had chronic foci of ENT-organs infections, accompanied by dysbiosis of the upper respiratory tract. In the study of swabs from the nasopharyngeal wash on the pathogenic flora of children with uCTD syndrome, more often (80%) and in higher titers were seeded St. aureus compared with children who had no manifestations of CTD.

The more pronounced the external manifestations of uCTD syndrome were, the greater was the likelihood of minor abnormalities of the internal organs (most often deformity of the gall bladder, minor abnormalities of the heart, kidneys). The presence of 10 or more stigmas of dysembryogenesis made it possible to predict with high probability the presence of these anomalies in children, and to prescribe the appropriate additional instrumental examination.

All children with severe manifestations of uCTD syndrome have bile duct dyskinesia (BDD) with in the background of an abnormality of the gall bladder, prolapse of valves, or additional chords of the left ventricle, in combination with developmental anomalies of other organs (additional lobes of the spleen, minor kidney anomalies - split of bowls, dystopia of kidneys).

The diagnosis was formulated according to the scheme, which allows to further consider the necessary dispensary supervision of children with combined pathology of different systems and organs by different medical specialists:

– the underlying medical condition for which the child was examined by specialists, or was hospitalized in the hospital;

– existing condition: uCTD syndrome of the corresponding type;

– manifestations of syndromes' pathology.

Conclusions. The conducted study confirms the expediency of introducing the appropriate background state of the uCTD syndrome, manifestations of syndromic pathology and associated diseases on the sheet of specified diagnoses of the polyclinic card (health records) of a child's development. Considering the proposed prognostic criteria for diagnoses of the development of uCTD syndrome (practically from the prenatal period of a child's development), it is necessary to think about the

possibility of forming and detecting uCTD syndrome already during pregnancy and to conduct the rehabilitation of women at risk for the formation of systemic pathology in their children.

References

1. Zemtsovsky, E. V. (2008). Undifferentiated connective tissue dysplasia. The state and prospects for the development of ideas about hereditary connective tissue disorders. *Connective Tissue Dysplasia*, (1), 5-9.

2. Sidorovich, O. V. (2011*). Development, features of the clinical course of diseases associated with connective tissue dysplasia in children of puberty age* (Unpublished master's thesis). Saratov State Medical University named after V. I. Razumovsky.

3. Grechanina, O. J. (2001). The spectrum and frequency of connective tissue dysplasia that requires the introduction of screening programs among newborns. *Pediatrics, Obstetrics and Gynecology*, (2), 63.

4. Kadurina, T. I. (2000). Hereditary collagenopathies (clinical picture, diagnosis, treatment, dispanserization) (Vol. 270). Saint Petersburg: Nevskiy dialekt.

Література:

1. Земцовский Э.В. Недифференцированные дисплазии соединительной ткани. Состояние и перспективы развития представлений о наследственных расстройствах соединительной ткани // Дисплазия соединительной ткани.-2008.-№1.-С.5-9

2. Сидорович О.В. Развитие, особенности течения заболеваний, ассоциированных с дисплазией соединительной ткани у детей пубертатного возраста: дис …канд. мед. наук / О.В.Сидорович – Саратов: б/и, 2011.-22 с.

3. Гречаніна О.Я. Спектр та частота дисплазії сполучної тканини вимагають впровадження скринуючих програм серед новонароджених /О.Я. Гречаніна, О.В.Бугайова, Р.В.Богатирьова // Педіатрія, акушерство та гінекологія.-2001.-№2.-С.63

4. Кадурина Т.И. Наследственные коллагенопатии (клиника, диагностика, лечение, диспансеризация). - СПб.; «Невский диалект»,2000.-271с. ISBN 5-7940-0043-0

Abstract

Складність морфології, функції та розповсюдженість сполучної тканини в організмі визначають активну участь її основних елементів у формуванні та розвитку багатьох видів патології. В останній час з'явилися відомості щодо ролі екзогенних факторів у розвитку дезорганізації сполучної тканини.

Результати досліджень та їх обговорення. Аналіз перинатального анамнезу 590 дітей 3-14 років за допомогою спеціально розробленої комп'ютерної інформаційно-пошукової системи дозволив виявити та веріфікувати провідну патологію вагітних що впливала на формування СНДСТ: наявність 2 і більше провідних несприятливих станів (недоношеність, токсикоз у першому триместрі вагітності, загроза викидня, вегетативна дисфункція у матері в першій половині вагітності, народження шляхом кесаревого розтину), є прогностичними щодо народження дитини з СНДСТ. Частота виявлення цього донозологічний стану у дітей з віком збільшувалась (у дітей дошкільного віку - зустрічався у 64.9% та в шкільному віці – у 86%), що вірогідно пов'язано з підвищеним розпадом колагену (за даними рівнів оксипроліну та глікозаміногліканів в сечі), порушенням імунітету (зниження показників місцевого імунітету за даними імуноглобулінів - IgA та s Ig A в слині), фагоцитозу (активність фагоцитозу та кисень-залежного метаболізму нейтрофілів) та активацією перекисного окислення ліпідів.

Висновки.

Проведене дослідження підтверджує необхідність аналізу перинатального анамнезу для прогнозування з великою вірогідністю народження дитини з СНДСТ, що дає можливість подальшої профілактики розвитку захворювань, пов'язаних з дисплазією сполучної тканини.

Доцільним є внесення відповідного фонового донозологічного стану СНДСТ, проявів синдромної патології та супутніх захворювань в лист уточнених діагнозів поліклінічної картки розвитку дитини.

Ключові слова

Діти, синдром недиференційованої дисплазії сполучної тканини (СНДСТ), MASS-фенотип, еларсоподібний фенотип, марфаноподібний фенотип, прогностичні критерії розвитку СНДСТ.

Статья отправлена: 04.04.2019 г.

Васюкова М.М.