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MICRONUTRIENT DEFICIENCY IN THE" MOTHER-CHILD " SYSTEM DETECTION ALGORITHM

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Abstract
According to WHO, anemia of pregnancy is a common condition affecting 30–80% of women worldwide, complicating pregnancy, negatively affecting birth outcomes, and the health of the fetus and child. remains (WHO, 2015). The health of the future generation is determined by many factors and, to a greater extent, directly or indirectly, by the health of the mother, so issues of maternal and child health can be comprehensively considered and are considered as a single problem. According to the World Bank, the overall nutritional status of children under 5, women of reproductive age (15–49 years), and pregnant women in Uzbekistan has been steadily improving over the past two decades. A national study conducted in 2008 showed that just over 34 percent of women of reproductive age suffered from anemia. The study also found that iron and folate deficiency were observed in 48 and 29 percent of adult women, respectively.

Keywords: micronutrient, algorithm, iron, pregnant woman, ferritin.

INTRODUCTION

During pregnancy, women undergo metabolic and physiological changes so support the growth, development of the fetus if the nutritional status of the expectant mother is poor, some complications can occur in the mother and newborn. In the second and third trimesters of pregnancy, there are nutrients that can be used after the birth of the fetus. Children develop rapidly in the first years of life. If there are not enough micronutrients at such a time, various disorders occur during the development process, including disorders in brain activity. Thus, despite the many recently published works on nutrition during pregnancy, the mechanisms of absorption, distribution and release of trace elements still remain unclear. Further explanations are needed to better understand the effects caused by the deficiency or excess of some micronutrients.

For this purpose, zinc, copper, iron, B12, ferritin were selected in the period of prenatal development and in the texturing of minerals in children. Our research is aimed at studying the consequences of these minerals associated with deficiency in pregnancy and the effects on the growth and development of children born to mothers.

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The purpose of the study: an electronic program “algorithm for determining micronutrient deficiency in the Mother - Child system” was developed with the aim of early detection of susceptibility to macro-and microelements deficiency in newborns. This gives a number of advantages to use in the primary health care unit.

RESEARCH MATERIALS AND METHODS

In the" mother-child " System, a health card has been developed to assess the condition of a pregnant woman, as well as to identify common signs of anemia in a baby. This questionnaire card shows all the causes and symptoms of anemia in pregnant women and includes a total of 20 questions. By using the questionnaire and assessing the health status of a pregnant woman, all factors affecting the growth and development of the baby can be eliminated with the help of a subjective and objective examination of the mother. Using the questionnaire method, information is obtained on assessing the state of the mother and child, depending on the imbalance of the main microelements. The questionnaire can be filled out in the maternity hospital by the mother and medical staff. If the answer to the questions "yes" is more than 12, the risk of disrupting the health of the mother is high, if less than 11 answers, the risk of disrupting the health of the mother is low,has a borderline state between health and illness. The results of the mother's survey are summarized by the nurse, who marks the number of questions in which a positive answer is received (+) and sums up the points. In the later stages, the obstetrician analyzes the results of the survey and selects children who need to be examined and, after examining them, decides on the need to consult specialists for further examinations.

A number of questionnaire surveys have been created to determine susceptibility to micronutrient deficiency in newborns, these being the early detection questionnaire survey of copper, zinc and iron deficiency. In the regions, there is a high need to identify micronutrient deficiency and dysbalance in pregnant women and newborns, but its implementation is carried out only in high-tech laboratories of our Republic. Algorithm for determining micronutrient deficiency in the “Mother-Child” system, taking into account the absence of special laboratories in the identification of microelements in health medical institutions, especially in the primary branch, and the value of verification methods."developed an electronic program (DGU 202406586 18.05.2024).

Based on this electronic program, it was possible to identify 5 macros (copper, zinc) and microelements (iron, B12 and ferritin) in infants. This uses a three-level assessment with a score of 10 for each item. Grades are scored on scores of 0-1-2: 0 - norm,I-initial(latent), and II-disease (manifest).

In Conclusion, in this program, newly developed methods for assessing the state of health of babies, taking into account the dysbalance of microelements, in particular the algorithm for assessing the condition of the child, the questionnaire for assessing the condition of children, the micronutrient deficiency in the "Mother-Child" system

the detection algorithm was covered in detail by the electronic program, recommendations for the provision of medical and social assistance, as well as the results of the assessment.

Micronutrient deficiency in the “Mother-Child” system developed by us with the aim of early detection of susceptibility to macro - and microelements deficiency in children

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detection algorithm.the electronic program "" was applied in practice. Studies were conducted in 120 newborns, of which boys – 64, girls-56.

Results. The results obtained showed that 55 (45.8%) children were significantly found to be deficient in iron, zinc and copper, while 45 children (37.5%) were found to have mild levels of iron, B12 deficiency, while 20 children (16.7%) were not found to be deficient in elements.

Hence, the susceptibility to macro - and microelements deficiency among newborns living in Samarkand region is 83.3%. These indicators are A.V. According to skalny (2019), microelements deficiency among children living in Russia was 45-75%.

Thus, the algorithm for determining micronutrient deficiency in the "Mother - Child" system, developed with the aim of early detection of susceptibility to macro-and microelements deficiency in newborns.the application of the Electronic Program in the primary unit of Health has several advantages:

• From the first, this program is a non-invasive method that allows you to identify microelements deficiency with the inclusion in the Electronic Program of questions specific only to microelements deficiency without any injuries;

• Secondly, no special invasive laboratory testing methods are required to detect microelementl deficiency;

• Thirdly, in an invasive way, it will be necessary to take at least 5 ml of blood to loosen microelements in the blood, and for this, a special biochemical laboratory that detects 5 elements is not present in the districts, which does not allow children to touch the cloak;

• Fourthly, this method can be used to determine the deficiency of trace elements in joppasi among the population of children;

Fifth, a great economic effect is obtained from conducting research, for example, if on average 250,000 rubles are spent on identifying 5 elements in the blood in one child, then 5 elements can be identified in the short term without spending money using an electronic program.

• the development of an algorithm and questionnaire allows early diagnosis of anemia in pregnant women, taking into account the balance of microelements.

• The developed algorithm and questionnaire card is a non-invasive research method that allows you to early diagnose micronutrient deficiency and identify risk groups using primary medico-sanitation in a "Mother-Child" system without expensive biochemical research methods.

• data on the prevalence and form of anemia among pregnant women before childbirth based on the data of the developed algorithm.

• Study of the amount and composition of micronutrient such as Fe, ferritin,Cu,zinc and B12 in pregnant women in Samarkand population as well as in their babies.

• vitamins, macro-and microelements in the umbilical cord blood of newborns: vitamin B12, iron, ferritin, B12 zinc, copper content.• new data on the micronutrient status of newborns when mothers take vitamin and mineral preparations during pregnancy.

• Determination of the risk group of micronutrient deficiency in pregnant and lactating women, which makes it possible to early diagnosis of micronutrient deficiency in the field of primary medical and sanitary care.

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• identifying a risk group for micronutrient deficiency in newborns born to mothers and healthy women with anemia, which allows early diagnosis of micronutrient deficiency with primary medico-sanitation.

• According to the results obtained from the micronutrient deficiency risk group, corrective and preventive measures are recommended for pregnant women who use National Foods in order to support nutrition.

Conclusion

The information provided expands the understanding of the physiological correlations experienced in children due to micronutrient deficiency in the" Mother-Child " system and anemia in women, allowing the assessment of the child's adaptation to life to be objectified. The results of the study can be used in the complex assessment of the micronutrient status of newborns in the presence of anemia in mothers. The results and new data obtained on the micronutrient status of pregnant women can be used in practical health care. Identification of a group at risk of micronutrient deficiency in the Mother-Child system can be used to feed micronutrient deficiency in pregnant women with anemia. The results of the study are used as a physiological basis in the assessment of primary medical and sanitary assistance, training, metabolic processes involving mineral elements and vitamins in process newborns at the Samarkand State Department of Pediatrics, Neonatology, Obstetrics-Gynecology, nutritional hygiene and pharmacology.

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