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MULTIDISCIPLINARY APPROACH TO PREVENTIVE EXAMINATION OF SCHOOL-AGE CHILDREN BY AN ENDOCRINOLOGIST

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S U M M A R Y

Relevance. An effective method for the early detection of diseases and risk factors are preventive examinations of children.

The study aimed to analyze the results of a preventive examination conducted among children of different ages to identify borderline conditions with pathological prerequisites for changes in the endocrine system.

Material and methods. Students of 18 secondary schools in the Bostandyk district of Almaty city underwent a scheduled preventive examination according to the age category by order of the Ministry of Health of the Republic of Kazakhstan. We analyzed the changes in health identified due to a preventive examination.

Results. 2425 children underwent preventive examination. In 252 children, six nosologies of the endocrine system were previously identified, like obesity, underweight, hypothyroidism, stunting, iodine deficiency, and tallness.

Discussion of the results. Specialists identify a preliminary diagnosis during a preventive examination. Then the student is referred to a medical institution at the place of residence for additional investigation to clarify the diagnosis.

Conclusion. Conditions like obesity, hypothyroidism, and stunting were more often detected in the students of the Bostandyk district of Almaty city, according to the preventive examination results.

Keywords: preventive examination, obesity, hypothyroidism, stunting, clinical study.

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Т У Ж Ы Р Ы М

МЕКТЕП ЖАСЫНДАҒЫ БАЛАЛАРДЫ ЭНДОКРИНОЛОГТЫҢ ПРОФИЛАКТИКАЛЫҚ ТЕКСЕРУДЕГІ КӨПСАЛАЛЫ ТӘСІЛ

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Кіріспе. Балалар арасында профилактикалық тексерулер ауруларды және қауіп факторларын ерте анықтаудың тиімді әдісі болып табылады.

Мақсаты. Бұл жұмыстың мақсаты әртүрлі жастағы балалар арасында эндокриндік жүйенің өзгерістерінің патологиялық алғышарттары бар шекаралық жағдайларды анықтау мақсатында жүргізілген профилактикалық тексеру нәтижесін талдау.

Материал және әдістері. Алматы қаласы Бостандық ауданына қарасты 18 орта мектеп оқушылары жас көрсеткіштеріне байланысты ҚР ДСМ бұйрығына сәйкес жоспарлы профилактикалық тексеруден өткізілді. Профилактикалық тексеру нәтижесінде анықталған өзгерістерге байланысты талдау жасалынды.

Нәтижелер. Профилактикалық тексеру барысында 2425 бала қаралды, 252 балада эндокриндік жүйе жағынан алты нозология бойынша төмендегі жағдайлар анықталды: семіздік, аз салмақ, гипотиреоз, қысқа бойлық, йод тапшылығы, ұзын бойлық.

Нәтижелерді талқылау. Профилактикалық тексеру кезінде мамандар алдын ала диагноз қояды, диагнозды нақтылау үшін баланы тұрғылықты жері бойынша медициналық мекемеге одан әрі тексеруге жіберуді көздеген.

Қорытынды. Алматы қаласы, Бостандық ауданының біз зерттеген мектеп оқушыларының арасында профилактикалық тексеру нәтижелері бойынша барлық топтардың жас санатына байланысты семіздік, гипотиреоз, қысқа бойлық алдын ала көп анықталды.

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Р Е З Ю М Е

МУЛЬТИДИСЦИПЛИНАРНЫЙ ПОДХОД ПРИ ПРОФИЛАКТИЧЕСКОМ ОСМОТРЕ ЭНДОКРИНОЛОГОМ ДЕТЕЙ ШКОЛЬНОГО ВОЗРАСТА

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Введение. Профилактические осмотры детей являются эффективным методом раннего выявления заболеваний и факторов риска.

Цель исследования. Проведение анализа результатов профилактического осмотра среди детей разного возраста с целью выявления пограничных состояний с патологическими предпосылками к изменениям эндокринной системы.

Материал и методы. Учащиеся 18 общеобразовательных школ Бостандыкского района города Алматы прошли плановый профилактический осмотр в соответствии с приказом МЗ РК согласно возрастной категории. Проведен анализ в связи с изменениями, выявленными в результате профилактического осмотра

Результаты. В ходе профилактического осмотра осмотрено 2425 детей, у 252 детей выявлены предварительно шесть нозологий по эндокринной системе: ожирение, дефицит веса, гипотиреоз, низкорослость, йододефицитное состояние, высокорослость.

Обсуждение результатов. При профилактическом осмотре специалисты выставляют предварительный диагноз, а для уточнения диагноза ребенок направляется в лечебное учреждение по месту жительства для дообследования.

Выводы. По результатам профилактического осмотра у школьников г. Алматы Бостандыкского района больше выявлены такие состояния, как ожирение, гипотиреоз, низкорослость.

Ключевые слова: профилактический осмотр, ожирение, гипотиреоз, низкорослость, диспансеризация.

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Introduction. Medical prevention remains most relevant in healthcare under the new economic conditions. The national project “Healthcare” highlighted supporting and developing the preventive direction of healthcare, especially the medical examination of the population [1]. The prophylactic medical examination is a complex of studies carried out for the early detection of conditions, diseases, and risk factors (RF). As a result, health groups are determined with a subsequent recommendation for children. According to the order of the Ministry of Health of the Republic of Kazakhstan No. 264 dated December 15, 2020, children of four age categories could undergo an endocrinologist’s preventive examination (PE), they are 10-11 years old, 12-13 years old, 15-16 years old, 17-18 years old. An endocrinologist examines children to diagnose such conditions as stunting, tallness, obesity, gynecomastia, PPR, hypothyroidism, goiter, and others by the anatomical and physiological characteristics of each age category [2].

The study aimed to analyze the results of a preventive examination conducted among children of different ages to identify borderline conditions with pathological prerequisites for changes in the endocrine system.

MATERIAL AND METHODS

In 2022 (excluding the summer season), we examined 2425 children from 18 secondary schools in the Bostandyk district of Almaty, subject to a scheduled preventive examination, according to the National Action Plan of the Republic of Kazakhstan, using a clinical diagnostic method [2].

According to the PE results, endocrine diseases were detected among 10.4% (252) students, according to six nosologies like obesity, underweight, hypothyroidism, stunting, iodine deficiency, and tallness.

The surveyed were divided into four subgroups, considering age. The sample was solid. Four subgroups of examined students were analyzed according to age differences but with endocrinological pathology. Out of 252 (100%), 113 (45%) were registered in the first subgroup, 105 (41.4%) in the 2nd, 17 (6.8%) in the 3rd subgroup, and 17 (6.8%) in the fourth.

RESULTS

Our analysis of the endocrine pathology verification among students showed that ranking by age group revealed the greatest vulnerability of children in five of six nosologies. In the category of children aged 10-11 years – 83.3%. In other subgroups

(the remaining three age subgroups), according to the same principle, based on the detection of endocrine pathology, four nosologies out of six were registered, amounting to 66.7% (n-252), except the subgroup of children from 12-13 years old.

A detailed analysis of the nosologies in the first subgroup showed that the examined children occupied the dominant position with a preliminary diagnosis of obesity 72.6% (n-82); hypothyroidism – 13.3% (n-15), and the third condition of interest was registered stunting – 8.0% (n-9).

In the second subgroup of the revealed pathologies, the distribution was descending: the central part was occupied by obesity at 78.1% (n-82); hypothyroidism at 7.62% (n-8), and stunting was recorded in 7.62% (n-8).

Another result was observed in a subgroup of adolescents aged 15-16 years, where the leading position was also occupied by obesity in 70.6% (n-12), but the second place, alternatively, was assigned to underweight 11.8% (n-2), as well as the nosology - hypothyroidism 11.8% (n-2).

A feature in the characteristics of the study results for ranking by endocrine pathology in the subgroup – adolescents aged 17-18 years was the newly established majority of cases – 76.5% (n-13), against the background of a significantly smaller 6.5 times the number of detectable underweight of 11.8% (n-2), and the cases of hypothyroidism 5.8% (n-1) and iodine deficiency state – 5.8% (n-1) were registered as equally single cases.

DISCUSSION OF THE RESULTS

During a preventive examination, specialists verify a preliminary diagnosis involving referral of the child for further study in a medical institution at the place of residence to clarify the diagnosis. However, for numerous reasons, most children do not go to the doctor and do not undergo a complete examination, thereby minimizing the effectiveness of preventive examinations. For example, if an endocrinologist examined a child in the previous year, and a preliminary diagnosis of obesity was made during a preventive exam. Still, due to late treatment for consultation, the patient's diet must be corrected,

as well as a hormonal background examination. As a result, the child can already come to the doctor in a year with obesity, but he has a high risk of developing type 2 diabetes.

Observations from practice have shown that about stunting, the presence of a "time corridor" entails certain destabilizing conditions because, given the anatomical and physiological characteristics of the child, there is an age category in which growth hormone therapy is effective. In the case of late treatment, therapy may no longer be indicated. Since the 90s, it has been known that growth hormone has a pronounced growth effect, accelerating synthesis, which is carried out with the help of insulin-like growth factors (IGF-1). Growth hormone also improves energy metabolism [3].

The formation of motivation for a healthy lifestyle and commitment to the implementation of preventive recommendations is primarily determined by the effectiveness of medical counseling [4, 5]. A multidisciplinary approach as a tool for prophylactic examination effectiveness by an endocrinologist is currently very productive. After all, the interaction of various specialists with different profiles carries several complex points, but this kind of difference can necessitate this interaction. The emerging complexity of cooperation is understandable, but it can also be solved with the regular nature of such interaction. The multidisciplinary interaction approach within the specialties makes it possible to make the complete picture of the patient's condition (including the examined student). Based on our experience working in primary health care and conducting preventive examinations, we consider it appropriate to recommend this approach to prevent late treatment and not apply it to specialists for pre-examining children. In this regard, it is necessary to set deadlines for the survey's final results based on the continuity principle indicated in Figure 1.

So, preventive examinations play an important role in planning the strengthening and protection of the health of children and adolescents. An adequately organized preventive test, one examined child, is one productive, healthy citizen of our Republic in the future.

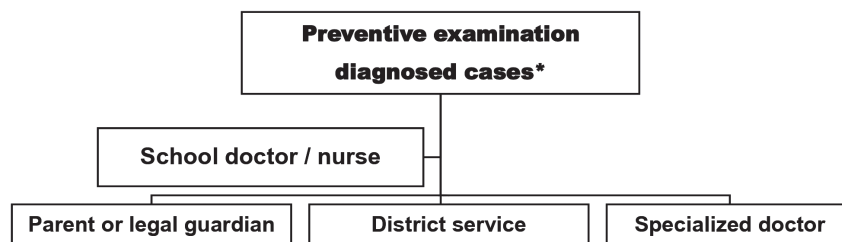


Figure 1 – The principle of continuity after a preventive examination

CONCLUSION

It was found that among the students of the Bostandyk district of Almaty examined by us, according to the results of the preventive examination, regardless of the age category of all subgroups (from 10-18 years), the verification of the diagnosis of obesity was registered over 70% while varying from 70.6% (from 15-16 years) and up to 78.1% (from 12-13 years old).

Hypothyroidism, as a nosology, was more registered among students from 10-11 years old (13.3%), slightly lower in the age category from 15-16 years old (11.8%);

Pre-established stunting of 8.0% in the "youngest" of the analyzed subgroups in students 10-11 years old.

Transparency of the study

Authors take full responsibility for the content of this manuscript.

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All authors took an equal part in the conception and writing of the scientific article, the final approval of the article for publication, and agreed to be responsible for all aspects of the work, implying proper study and resolution of issues related to the accuracy or integrity of any part of the work.

Conflict of interest

Authors declare no conflict of interest.

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