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Сведения об авторах

В.В. Лобанова – ассистент

Ф.И. Висмонт – доктор медицинских наук, профессор, член-корреспондент Национальной академии наук Беларуси

Information about the authors

V.V. Lobanova – assistant

F.I. Vismont – Doctor of Science (Medicine), Professor, Corresponding Member of the National Academy of Sciences of Belarus

УДК: 576.895.132

АКТУАЛЬНОСТЬ ОДНОКРАТНОГО АНАЛИЗА НА ЭНТЕРОБИОЗ ПО МЕТОДУ РАБИНОВИЧА С ПРОФИЛАКТИЧЕСКОЙ ЦЕЛЬЮ

Анастасия Валерьевна Макарова¹, Евгения Сергеевна Трясунова², Елена Владимировна Колотнина³

¹⁻³ФГБОУ ВО «Уральский государственный медицинский университет», Минздрава России, Екатеринбург, Россия

¹nesy@bk.ru

Аннотация

Введение. Энтеробиоз относится к группе контагиозных антропонозных гельминтозов. Возбудителем является *Enterobius vermicularis*-детская острица. Для диагностики энтеробиоза берется соскоб - метод Рабиновича. **Цель исследования** - анализ эффективности однократного обследования по методу Рабиновича в профилактических целях. **Материалы и методы.** Проведен опрос среди целевой группы людей, численностью 24 человека. В таблице 1 зафиксировано количество проведенных обследований опрошенных лиц, количество положительных и отрицательных результатов. **Результаты.** Однократный тест малоинформативен и не зависит от общего количества. **Обсуждение.** По результатам проведенного нами опроса из 24 опрошенных человек, только у одного респондента был единожды положительный результат, что составляет 0,24 % положительных результатов. **Выводы.** Исходя

из полученного нами результата опроса, а также опираясь на исследования в этой области, можно сделать вывод, что эффективность метода Рабиновича повышается с каждым дополнительным обследованием. Поэтому мы предлагаем внести уточнения о необходимости трехкратной сдачи данного анализа или упразднить его в профилактических целях.

Ключевые слова: энтеробиоз, профилактика, метод Рабиновича.

RELEVANCE OF SINGLE TEST FOR ENTEROBIASIS BY RABINOVICH METHOD FOR PREVENTIVE PURPOSES

Anastasiya V. Makarova¹, Evgeniya S. Tryasunova², Elena V. Kolotnina³

¹⁻³Ural state medical university, Yekaterinburg, Russia

¹nesy@bk.ru

Abstract

Introduction. Enterobiasis belongs to the group of contagious acute helminthiasis. The causative agent is *Enterobius vermicularis* a pinworm. For the diagnosis of enterobiasis, a scraping Rabinovich's method. **The aim of the study** - to analyze the effectiveness of a single test by Rabinovich method for preventive purposes. **Materials and methods.** A survey was conducted among the target group of people, numbering 24 (table 1). The table shows the number of people surveyed as well as the number of positive and negative results. **Results.** A single test is uninformative and does not depend on the total number of times. **Discussion.** According to the survey results only one respondent of 24 had a positive result once, which is 0.24% of positive results. **Conclusions.** Based on the survey result received, as well as on research in this area the following conclusion can be made. The effectiveness of Rabinovich method increases with each additional testing. Therefore, we offer either to state the need in a three-time test for preventive purposes or to abolish this kind of test for preventive purposes at all.

Keywords: enterobiasis, prevention, Rabinovitch's method.

INTRODUCTION

The fact that most people face enterobiasis indicates its large-scale distribution. According to the medical journal Western Journal of Medicine enterobiasis infection affects almost 1 billion people out of 7.5 billion worldwide. It can happen either with or without symptoms. In general, according to the total parasite incidence rate in 2013-2017 in the Russian Federation a significant decrease in the activity of the epidemiological process of parasites was established (from 291.7 cases per 100 000 people in 2013 to 216.4 cases per 100000 people in 2017). At the same time, the highest rates of parasite incidence were recorded annually among children in the age groups 3-6 and 7-14 years. Throughout the period analyzed 2.8 million cases were registered in the Russian Federation. On average, about 350000 cases are registered in the country annually [3].

Enterobiasis belongs to the group of contagious acute helminthiasis. The causative agent is *Enterobius vermicularis* a pinworm. Pinworms are widespread everywhere, especially in regions with a dry warm climate, unfavorable socio-economic conditions and a low level of sanitary and hygienic culture. The main

source of infection is a sick person who secretes invasive parasite eggs. Infection of a healthy person occurs by ingestion of helminth eggs (fecal-oral transmission mechanism); transmission factors are hands contaminated with helminth eggs, household items, toys, food, environmental objects (soil, water). In the transmission of invasion, flies and cockroaches can play the role of a mechanical carrier. On household items including toys, bedding, carpeting and others the causative agent of enterobiasis remains viable for up to 21 days, on environmental objects - in the upper layers of soil, sand (including playgrounds, sandboxes) - up to 14 days, in tap and waste water - up to 7 calendar days. At a temperature of 22-28 degrees Celsius and a decrease in humidity to 60% pinworm eggs remain viable for up to 8 days. The causative agent of enterobiasis is resistant to various disinfectants. The stability of pinworm eggs in the external environment increases as they mature. The invasion of enterobiasis may be characterized by allergic, dyspeptic phenomena and may be asymptomatic. Enterobiasis is characterized by perianal itching. Enterobiasis can be diagnosed on the basis of clinical manifestations, epidemiological history (detection of the fact of helminthiasis in family members, other children at school or kindergarten), detection of pinworm eggs in the material from the perianal folds during the study by sedimentation, flotation methods [3]. According to the Decree of January 28, 2021 N 4 On the approval of sanitary rules and norms of SanPin 3.3686-21 «Sanitary and epidemiological requirements for the prevention of infectious diseases» paragraph 3342. Identification of patients and (or) parasite carriers is carried out during preventive, planned, preliminary work admission and periodic medical tests (feces analysis and material from perianal folds) [1].

According to paragraph 3343 the following are subject to testing for enterobiasis: pupils of preschool educational organizations; employees of preschool educational organizations; elementary school students (grades 1 to 4); children, adolescents, specific groups of the population according to epidemic indications and during medical examinations and preventive examinations; children, upon registration in preschool educational organizations, organizations for orphans and children left without parental care, for sanatorium treatment, in health organizations; outpatients and inpatients of children's polyclinics and hospitals; persons who have been in contact with a sick or parasite carrier; persons receiving access to the swimming pool.

According to paragraph 3344 scheduled preventive testings of children and attendants in preschool educational organizations and grades 1-4 of general educational organizations are carried out once a year (after the summer period) and (or) according to epidemiological indications.

In accordance with paragraph 3345 specific groups of the population are subject to periodic preventive planned testing for enterobiasis once a year. For the diagnosis of enterobiasis, a scraping (Rabinovitch's method) is taken from the perianal area, preferably in the early morning. The diagnostic value of the test increases when it is repeated several times over several days, since female worms do not lay eggs daily. The probability of finding pinworm eggs in one scraping is 50%, in three - 90%, and in five - up to 99%. On the eve of the test the area of the anus and buttocks is not washed [2].

The aim of the study - to analyze the effectiveness of a single test by Rabinovitch's method for preventive purposes.

MATERIALS AND METHODS

A survey was conducted among the target group of people, numbering 24 (table 1). The table shows the number of people surveyed as well as the number of positive and negative results.

RESULTS

Table 1

A survey conducted among the target group of people

	Surveyed people gender, age(s),	Number of examinations performed (times)			Result Surveys +/-
		>3	3-5	<5	
1	female, 15		+		-
2	female, 11		+		-
3	female, 12			+	1 +
4	female, 8		+		-
5	female, 14		+		-
6	female, 5		+		-
7	male, 10		+		-
8	female, 5	+			-
9	male, 8		+		-
10	male, 21			+	-
11	female, 9		+		-
12	male, 7		+		-
13	female, 20			+	-
14	female, 10			+	-
15	male, 8		+		-
16	female, 25			+	-
17	female, 8			+	-
18	female, 23			+	-
19	male, 11	+			-
20	female, 9			+	-
21	female, 10			+	-
22	female, 5			+	-
23	male, 6		+		-
24	male, 9			+	-

DISCUSSION

A survey was conducted to analyze the ratio of the frequency of positive and negative results depending on the number of tests over the entire life period. According to the survey results only one respondent of 24 had a positive result once (table 1), which is 0.24% of positive results. The survey was conducted among the age group (their legal representatives) from 5 to 23 years old who according to the data of sanitary epidemiological surveillance are most susceptible to this disease. The number of tests is equated to the total value for the entire period of the life of the

interviewed person. The advantage of the tests for enterobiosis by Ryabinovich method and its availability is important since the method is safe and non-invasive. Reliability is important for the timely detection and prevention of the spread of the disease. According to studies by Mare Remm and Kalle Remm efficiency was noted to change with a single testing of groups of people by 20.4%, with a two-fold testing by 27.4% and with a three-time by 29.1% [4]. Cho and Kang calculated an increase of 11.6-20.8% with a three-time testing as compared to a single examination [5].

CONCLUSIONS

In this paper, the requirements of sanitary rules and norms SanPiN 3.3686-21 are considered. «Sanitary and epidemiological requirements for the prevention of infectious diseases». These norms operate in the Russian Federation. Based on the survey result received, as well as on research in this area the following conclusion can be made. The effectiveness of Rabinovich method increases with each additional testing. Taking into account the requirements of SanPin. - a single test for the purpose of prevention for visiting children's institutions, swimming pools, sanatoriums is not sufficient for a categorical conclusion about the absence of invasions in the person examined. Therefore, we offer either to state the need in a three-time test for preventive purposes or to abolish this kind of test for preventive purposes at all.

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Information about the authors

A.V. Makarova - student

E.S. Tryasunova - assistant of the Department of Medical Biology and Genetics

E.V. Kolotnina - Associate Professor of the Department of Foreign Languages

УДК: 577.151.042

ВЛИЯНИЕ L-АРГИНИНА НА ИЗМЕНЕНИЕ АКТИВНОСТИ КАТЕПСИНА D В ТКАНЯХ ЭПИДИДИМИСА КРЫС

Денис Олегович Мельников¹, Владислав Сергеевич Крамской², Юлия Александровна Марсянова³, Валентина Ивановна Звягина⁴

¹⁻⁴ФГБОУ ВО РязГМУ И.П. Павлова Минздрава России, Рязань, Российская Федерация