



USING MATHEMATICAL MODELING IN PREDICTION OF CHILDREN'S WORM DISEASE

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ANNOTATION

In this article, by analyzing the stability of stationary solutions of the basic model of helminthiasis in children, it can be seen that the defeat of the human body by helminthiasis leads to severe cases, as well as the prognosis and algorithm of enteric disease.

Keywords: Ostriches (type of worms), helminths, mathematical model, differential equation, algorithms, microscope, forecast.

INTRODUCTION

Familiarity with various types of parasites and related phenomena. Methods of penetration of parasites into the human and animal body, generational change, life cycles in the body, diagnosis of eggs, preparation of permanent preparations of parasites and identification of their species are methods for studying parasites. Worms are one of the oldest parasites which adapted to life in the body of other living beings. These worms (ostriches) cause great harm to people and their health. Worms have existed since ancient times. Currently, more than 300 species of worms are





distributed. According to the World Health Organization, a quarter of the world's population is infected with intestinal parasites. 90% of the detected worms (ostriches) belong to the children's population. The most common and widespread enterobiasis, ascariasis, opisthorchiasis, diphyllbothriasis and hymenolepiasis. Among the reasons for the increase in the disease with worms (ostriches) include:

- the increase in the number of domestic animals, contamination of the environment in districts, cities and villages, parks, children's playgrounds, causes the spread of this disease to children. Based on this, it can be emphasized that it is very unfortunate that pet owners do not have a high level of knowledge of health and hygiene information and do not comply with it at all. If every pet owner would fully comply with the rules of sanitation and hygiene, then helminthic (ostrich) disease would be prevented, and our children would grow up healthy.



Figure 1. Worm (ostrich) egg



Figure 2. Adult worm (ostrich)

A common feature of helminths is that they lay large numbers of eggs. A female ostrich lays up to 200,000 eggs a day. Helminths, their segments and eggs leave the human body with feces, which is the main diagnostic sign of intestinal helminthiasis. However, in most cases, the worm leaves the human body only after death, helminths do not always lay eggs, and mature segments are not released every day. Therefore, it is recommended to take three tests regularly. It is based on repeated examination under a microscope, reliable diagnostic methods, blood tests and other tests.

Several departments of medical universities are conducting scientific research on this disease. Mathematical model, algorithm, use of differential equations, statistics and reliability assessment. Many experiments were conducted by scientists of the "London Center for Research on Neglected Tropical Diseases" in European countries on the topic "Soil-transmitted helminths: mathematical models of transmission, the effect of mass reception of drugs and criteria for the elimination of infection". In the Institute of Mathematical Sciences of the State of Kenya, many scientific research works on the topic "Mathematical modeling for optimal management of soil-transmitted helminth infection" have been carried out. Scientific works and researches were carried out in the departments of universities and institutes named above on the topics mentioned above.



A mathematical model is an artificial system that represents the main properties of the object under study and describes in a convenient form a lot of information about it. The mathematical model penetrates wider and deeper into various spheres of human activity, makes it possible to use effective research tools. The task of mathematical modeling is to describe the "existing world" in the language of mathematics. This allows you to have a much clearer idea of its most important features and, one might say, it will be possible to predict future events.

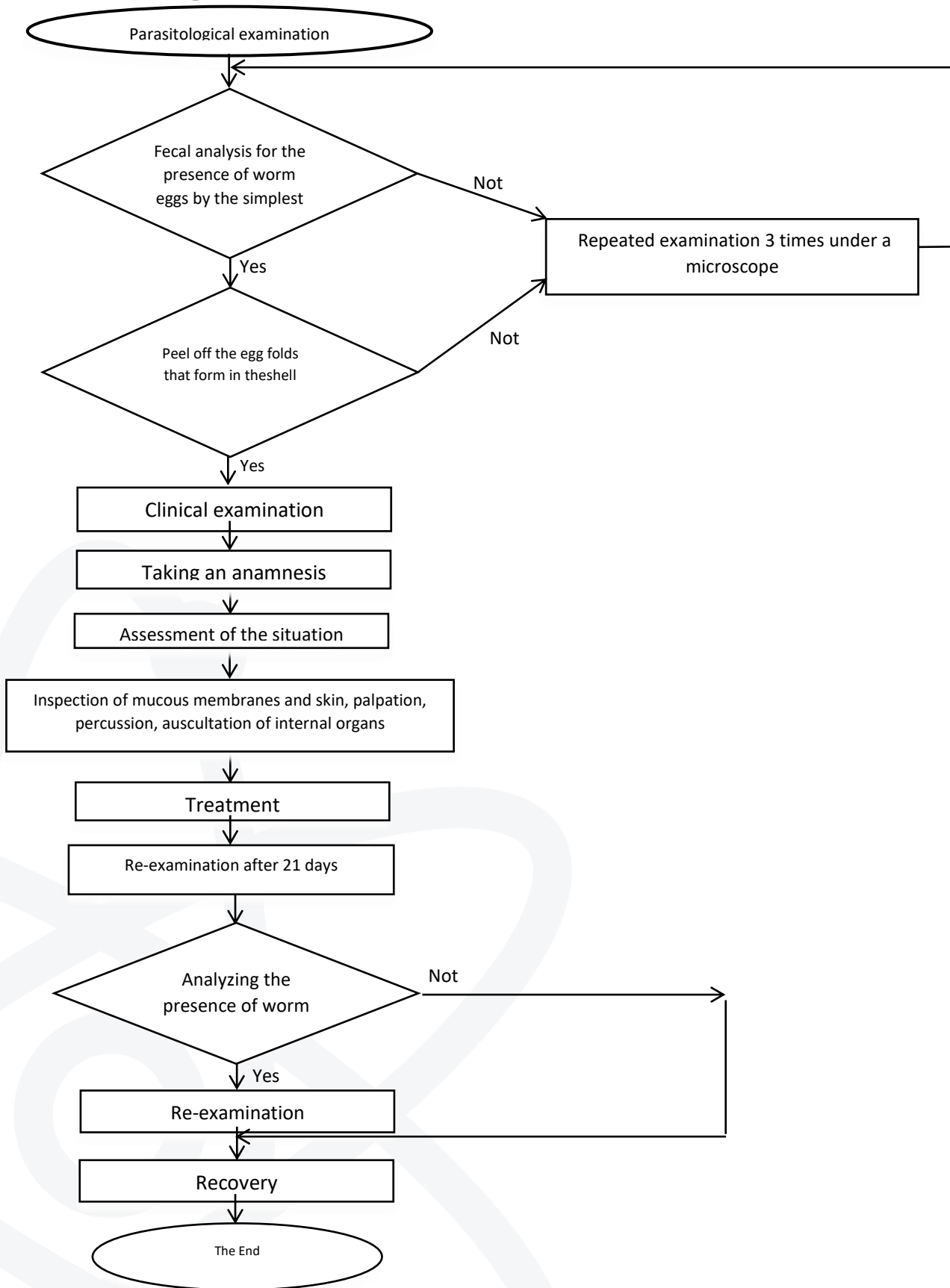
Currently, very high demands are placed on specialists working in the field of medicine. It is very important for doctors not only to be qualified, but also to be able to apply modern technologies in practice. Doctor can not appreciate the practical significance of the knowledge available. Mathematics will definitely help to solve this, it will help to form the accumulated knowledge. The use of certain mathematical models for the work of a doctor depends on the knowledge of the specialist and the tasks to be solved. The mathematical approach allows not only to obtain a correct description of the tasks to be solved, but also to obtain the result of solving the problem. Modern medicine is a science that has a lot of empirical knowledge about how to treat diseases. The most relevant direction in the use of mathematical modeling in modern medicine is the description of both physiological and pathological processes. Mathematical modeling is most effective for studying processes occurring at the level of cells, tissues, organs and organ systems. In recent years, the possibilities of diagnosing and treating diseases have been expanded through the introduction of mathematical modeling and the creation of computer systems based on it. Therefore, if this mathematical modeling, algorithm, statistics and differential equations are used in the diagnosis and prediction of worm in children, early detection, prediction and treatment of the disease will be very good. Each doctor has his own algorithm for diagnosing helminthiasis. For example, this flowchart shows a worm detection algorithm.

In addition, mathematical modeling, the theory of differential equations, the largest branches of modern mathematics, are also used in medicine. The theory of differential equations is very widely used in medicine. Effective treatments for these worms can be formulated and analyzed using the theory of differential equations.

CONCLUSION:

Thus, the disease of helminths (helminths), which occurs mainly in children, can also occur in animals, as well as several new methods for preventing the transmission of this disease from animals, predicting the disease and treating with the help of the obtained predictions. from this information, as well as assessments and conclusions. In the information provided, the distribution of helminths (ostriches), the negative impact of their reproduction on the human body, and their transmission from person to person have been studied.





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