THE USE OF ACCELERATED METHODS OF LABORATORY DIAGNOSIS OF DYSENTERY (PHAGE TITER INCREASE REACTION AND THE METHOD OF FLUORESCENT ANTIBODIES)

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THE USE OF ACCELERATED METHODS OF LABORATORY DIAGNOSIS OF DYSENTERY (PHAGE TITER INCREASE REACTION AND THE METHOD OF FLUORESCENT ANTIBODIES)

/Following is a translation of an article by Ye. N. Kulikova, Ye. I. Vayman, Yu. T. Kuz'mina, L. L. Blinova and A. D. Suvorkova in the Russian language periodical Zhurnal mikrobiologii, epidemiologii i immunobiologii (Journal of Microbiology, Epidemiology and Immunobiology), Vol 34, No 6, 1963, page 131./

(From the Kazan' Institute of Epidemiology, Microbiology and Hygiene, Polyclinic No 2, Kazan')

A comparative study has been made of the accelerated methods of laboratory diagnosis of dysentery -- phage titer increase, fluorescent antibody method with parallel use of the bacteriological method.

The specificity of indicator bacteriophages was tested on 49 museum /stock/ and fresh cultures of the bacillus coli family, and of luminescent sera on 122 such cultures. As a control similar tests were run on typhoid fever patients and individuals in whom dysentery bacteria were isolated (N'yukestl, Boyd-Novgorodskoy) and salmonellae. These studies established the specificity of bacteriophages and luminescent sera used in the investigation.

A total of 159 individuals were examined, 138 of whom were patients with gastro-intestinal diseases, and 21 of whom were included due to epidemic indications and for prophylactic purposes. Dysenteric bacteriophages and luminescent sera of Flexner and Sonne were used in the investigation (the 12 individuals in whom N'yukestl and Boyd-Novgorodskoy dysentery cultures were isolated are not included).

The results showed that the phage titer increase reaction and the method of fluorescent antibodies are more sensitive than the bacteriological method and that the results are obtained within a shorter length of time.

The disadvantage of the phage titer increase reaction is that there is a considerable number of phage-resistent strains among the fresh cultures, as well as the complexity of running this test. Investigations have been conducted for the purpose of simplifying this reaction. The excretions from 255 patients were first divided into two parts: one part was examined by the usual method (with preliminary suspension and using a shyuttel device /shaker?/) and the other was mixed with beads then inoculated. The results were the same in 90percent of the cases.

In order to adopt the phage titer increase reaction and the fluorescent antibody method in laboratory practise it is necessary that there be a centralized supply of standard stock luminescent sera and indicator bacteriophages.

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