

ENZYME IMMUNOASSAY FOR SERORESISTANT SYPHILIS VARIANTS

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Abstract: *Enzyme immunoassay (ELISA) is one of the modern serological tests for syphilis and is used to diagnose both current and past syphilitic infection. The determination of antitreponemal IgG and IgM is of crucial importance for the diagnosis of early forms of congenital syphilis, differential diagnosis of reinfection-relapses, as well as for the study of the causes of seroresistance.*

Keywords: *Immunoassay, syphilis.*

Introduction: Syphilis is characterized by a fairly high number of patients, medical and social significance, difficulties in diagnosis and treatment. In the 90s, the fifth "wave" of the syphilis epidemic began in Russia, coinciding with unfavorable

socio-economic factors, the growth of prostitution, and the abolition of legislative acts on the control and prevention of sexually transmitted infections. In 1991, the incidence of syphilis in the country per 100 thousand population was 7.2, and in 1997 it was 277.3, i.e. it increased 38.5 times, reaching its peak! In subsequent years, there was a gradual decrease in the incidence, however, and in 2013 the indicator is still high - 28.9. In 1997-2013, the incidence of syphilis in the country is 4 times higher than the initial 1991. It is natural that during the period of an increase in the incidence of syphilis, its early forms – Lues I and Lues II recens (or as it is customary to say today – secondary syphilis with a prescription of up to 6 months) prevail, with a decrease – hidden as early - with a prescription of up to 2 years, and later - more than 2 years. Latent forms of infection (both early and especially late) are insidious because they are a reservoir of possible neurosyphilis, its visceral forms. The second reservoir of these crippling forms of syphilis are patients with seroresistance. Currently, seroresistance is understood as the state of the body, which is characterized by the absence of a decrease in the titers of reagins in the RMP (microprecipitation reaction) by 4 times or more within a year after the end of full-fledged specific treatment of syphilis. What has contributed to the increase in such a contingent of people since 1995? The epidemic of syphilis in the country required the transition to outpatient treatment of patients with this infection. Due to the lack of own research, registration of foreign benzatin-benzylpenicillin (extensillin, retarpen) was carried out, which allowed this transition to be made after the publication of the "Information Letter" in 1995. This official document allowed all infectious forms of syphilis (Lues I, Lues II, Lues latens praecox) to be treated with these reparations, including pregnant women. Of course, treatment with benzatin-benzylpenicillin has played a positive role in the fight against the epidemic. However, in the future, cases of seroresistance began to appear and most often in patients with Lues II recidiva and with Lues latens praecox. In our opinion, back in that distant 1998, the treatment of the above-mentioned forms of syphilis with durant drugs should have been banned in Russia. Nowadays, it should be remembered that seroresistance is dangerous in its consequences. When performing a spinal

puncture in this category of persons, changes in the cerebrospinal fluid (positive serological reactions, increased protein content, cytolysis), combined with neurological symptoms, make it possible to establish neurosyphilis in about half of the patients.

The aim of the study was to determine the frequency of detection of antitreponemal IgG and Ig M in seroresistant syphilis.

Material and methods of research: The blood sera of 25 patients (14 men and 11 women) were examined, in whom serological reactions remained positive after the end of treatment. The main age category was a group of patients aged 20 to 40 years - 12 people, 8 patients aged 40 to 50 years, 5 patients aged 50 to 60 years. The ELISA procedure was performed according to the instructions for use attached to the test system (TS), the optical density of the samples was recorded using a flatbed spectrophotometer (Multiscan, Finland).

In terms of reaction mechanism, sensitivity and specificity, ELISA is close to immunofluorescence (RIF) reactions. The participation of the same antibodies in these reactions, a close titer level, and a high frequency of matching results were noted. Therefore, the results of Ig M-ELISA were compared with DAC and RIBT

Results: To detect IdM in people with seroresistance, it is advisable to use test systems characterized by high sensitivity in the late stages of syphilis. It is not recommended to use test systems designed only for early diagnosis of syphilis to detect IdM in people with seroresistance. Since according to the literature, the sensitivity of such test systems in seroresistant syphilis is about 6%. The results of ELISA in the group of patients with seroresistant syphilis are in good agreement with the ideas of suppressing the expression of IdM after adequate specific therapy while maintaining the synthesis and circulation of Ig G in the blood.

It should be noted that all 25 sera were IgM negative, but IgG- positive with varying degrees of optical density (OP). 18 samples had OP above 1.0 and 7 samples had OP below 1.0 Traditional serological tests were positive.

Conclusion: One of the main measures aimed at preventing an increase in the incidence of syphilis is the early diagnosis of this infection. Due to the development of

more sensitive, specific and less time-consuming serological methods, the use of ELISA has become possible, as well as its use for confirmation in patients with seroresistance in syphilis.

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