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PREIMPLANTATION GENETIC DIAGNOSIS IN REDUCING FETAL LOSSES IN WOMEN WITH HIGH RISK

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Abstract
Repeated abortion (ra) is usually defined as three or more spontaneous abortions. This phenomenon does not have a clear limit, but it has a tendency to increase. If the probability of losing any clinical pregnancy is between 10% and 15%, the probability of three consecutive fetuses accidentally occurring is, say, between 0.1% and 0.34%. This is a rate below 1% observed in the general population.

Keywords: repeated abortion, death of the fetus in the first term, implantation.

Introduction

The female reproductive system is extremely stable and prone to variability: of all human conceptions, almost 70% are carried to term to a viable state of the fetus [1,7]. Habitual miscarriage is one of the most common causes of early gestation losses, especially in the first trimester of pregnancy, in particular in the early embryonic period. Studying the genetic factors of the products of conception in case of two or more fetal losses can help to determine the main etiological factors that could lead to fetal loss and subsequently contribute to predicting the successful course of subsequent pregnancies [2,3,6]. An important aspect of studying preimplantation genetic analysis in couples who have experienced habitual miscarriage contributes to achieving a favorable outcome of the next pregnancy and shows great promise in the genesis of miscarriage [4,5].

It should also be noted that one of the causal factors of habitual miscarriage can be chromosomal abnormalities, in most cases of which they are often the cause of spontaneous gestation losses [7-9]. There are several additional signs that are clinical predictors of spontaneous abortions. These signs include fetal heart rhythm disturbances, exclusion of chromosomal abnormalities, and maternal age. In addition, anatomical abnormalities of the uterus, endocrine system disorders, infectious genesis, exogenous factors, immunological disorders, hormonal and metabolic disorders are taken into account [10].

Over the past decade, the main characteristic or clinical features of miscarriage may be chromosomal translocations in each parent, in addition to endocrine system disorders, autoimmune diseases, as well as decreased endometrial receptivity and, in some cases, a combination of the above disorders [11-13].

There are many etiological factors, but despite this, chromosomal abnormalities resulting from autoimmune processes continue to be one of the only asymptomatic causes of miscarriage. However, in 45-50% of women, habitual miscarriage remains unexplained. And not every woman can have a successful pregnancy. Data from foreign researchers show that after a diagnosed habitual miscarriage, the chance to carry another pregnancy to term is achieved in only 75% of cases. And this percentage includes women whose age indicators are beyond the reproductive age. It should be noted that spontaneous abortion increases in many cases with an increase in the number of chromosomal operations and an increase in the age of the mother [14]. However, there is not always a connection between the age of the mother and the indicators of chromosomal operations. And strong correlations are not always noted [16-18].

Although in many cases chromosomal aberration is noted in habitual miscarriage, studies devoted to preembryonic fetal loss reveal only 50% of genetic disorders in these embryos. And it should also be noted that in cases where women have not been noted to have genetic factors of disorder that contribute to the development of spontaneous abortions, the role of non-cytogenetic etiology in women with sporadic fetal loss cannot be ruled out [17]. Studies conducted by Stefansson and co-authors, who studied samples of conception products in women over 400, noted that 275 couples with habitual miscarriage had more cases of abnormalities in chromosomal sets, and it was also noted that these women were over 35 years old. But it should be noted that in women in both the control and main groups, over 35 years of age, no reliable differences in the number of samples of abortion material were observed [18,20].

In women in the control group under 35 years of age, the detection of a smaller number of chromosomal abnormalities indicates the prevalence of no cytogenetic etiology in the development of miscarriage, that is, the causal factor of the type of chromosomal aberration was not established [11,19].

In conclusion, we can note that genetic factors can play a complex role in the development of human reproduction. But in general, despite the high rate of spontaneous abortions, women have a higher chance of carrying another pregnancy after a habitual miscarriage than losing it again.

To help avoid another encounter with a habitual miscarriage, it is still necessary to recommend conducting a thorough study of all the factors that lead to fetal loss.

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