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Short Communication

Chromosomal Abnormalities and Heteromorphism with Recurrent Abortions

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DESCRIPTION

Generally, a miscarriage before the 20th week of pregnancy without external intervention is called a spontaneous abortion. Abortion is a great issue that is really important for parents who decide to have a baby. Recurrent miscarriage in humans is a common phenomenon and an important reason for this is cytogenetic abnormalities. Most miscarriages are caused by abnormalities in the fetus or chromosomes in the fetus. More than 50% of genetic factors are associated with early pregnancy miscarriage and fetal chromosome abnormalities. Genetic causes of multiple miscarriages include unbalanced chromosome rearrangement, which may result in being a parent carrier for balanced chromosome rearrangement.

In 4%-8% of parents with recurrent pregnancy loss, at least one partner will have chromosome abnormalities, possibly due to balance chromosome abnormalities. The prevalence of balanced transfer in parents with recurrent miscarriages in various studies ranges from 0%-31%. The reason for the variation to this extent is not clear. Future studies of parents identified as carriers of balanced translocation indicate that 80% of their pregnancies end in abortion, but only 16% lead to a healthy newborn. Their risk of giving birth to an abnormal baby with a chromosome imbalance is about 4-6% lower.

Differences in the frequency of reports due to differences in the method of investigation can also be investigated. For example, most of these studies do not consider control groups or the number of optimal abortions, infertility or abnormal children to compare with patients. This makes it difficult to compare these studies with each other. For example, a study of parents who had more than two abortions found no equilibrium exchange, but 4 out of 16 parents had two miscarriages related to childbirth or children with multiple birth defects. Apparently none of the parents who had two abortions were compared in this study with parents with children with disabilities who had two abortions.

In another study, translocations were researched between 22 parents with a history of recurrent abortion or two or three stillbirths or genetic counseling with the birth of a deformed child, but only aborted parents were not considered. Mitchell also investigated 200 parents with chromosomal translocation and reported a frequency of 6.3% for balanced translocation. In the Ferguson-Smith study, as they did in this study, the pairs were researched at a genetic clinic and referred to a cytogenetic laboratory. Like this study they also excluded parents who had children with chromosomal abnormalities or stillbirths [1,2].

Therefore it seems that the prevalence of these abnormalities in different geographical regions should be investigated separately. This shows that as the number of abortions increases, so does the likelihood of chromosomal abnormalities. Therefore, parents with recurrent miscarriages may feel the need for cytogenetic study. Considering the frequency of chromosomal heteromorphism in parents with recurrent abortion and controls, heteromorphism is not the cause of abortion in these patients.

Also the probability of chromosomal abnormalities in women is generally higher than in men. It can be said that the increase in the number of abortions in both the parents does not increase the chance of having abnormal children, but reduces the chances of having healthy children in these parents. Identifying parents with chromosomal abnormalities can undoubtedly help prevent the birth of clumsy babies [3-5].

The exact risk involved depends on the specific chromosomes involved, the length of the segment (s) involved in the reorganization, the sex of the transmitting parent, and the diagnostic procedure. Parents who have experienced both normal and abnormal miscarriages have a higher probability of chromosome rearrangement than those who have had recurrent miscarriages and those who have not had practical pregnancies. In addition to chromosomal abnormalities, uterine abnormalities, endocrine disorders, and infection can also cause abortion.

Recognizing chromosome abnormalities as etiology facilitates counseling and appropriate management. Detailed cytogenetic analysis of both males and females with reduced reproductive fitness is required to assess the success of assisted reproductive processes. Patients who use these emerging methods should be properly advised about the risks of transmitting these chromosome abnormalities to their offspring. Parents may have a better prognosis for recurrent miscarriages, and even if a

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partner has a translocation, the doctor should encourage the couple to try for a healthy pregnancy regardless of their chromosome status.

CONCLUSION

Antenatal diagnosis is provided to identify fetal karyotypes and pre-implantation genetic diagnostics with assisted reproductive technology are provided to manage recurrent miscarriages at certain centers. Although such interventions are not available in some settings, subsequent data on parents with recurrent miscarriages can be used to show the trend of future pregnancy outcomes. In the absence of data on the outcome of pregnancy, parents with balanced translocation can only report the theoretical risk of abnormal pregnancies using hypothetical data. Chromosome abnormalities can be a cause of recurrent miscarriages and more abortions increase the likelihood of abnormalities. Also, the presence of chromosomal heteromorphism in the general population without clinical abortion symptoms shows that chromosomal heteromorphism is not the cause of these spontaneous abortions.

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