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An Overview of Genetic and Molecular Factors Responsible for Recurrent Pregnancy Loss

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ABSTRACT Recurrent pregnancy loss usually results from disorders that cause intrauterine fetal damage, such as maternal or paternal chromosomal abnormalities. About 15 to 20 percent of all recognized pregnancies end in a first- trimester spontaneous abortion. Parents who are carriers of structural abnormalities have a higher risk of miscarriage because of the aberrations in genetic information may not segregate properly into the reproductive cells. This may be due to translocations, inversions, deletions, and duplications causing pregnancy loss. It is believed that between 3 and 5 percent of recurrent miscarriages are due to genetic factors, about 7 percent are caused by chromosome defects, 15 percent to hormonal defects, and 10 to 15 percent to anatomical defects. The most common cause of early pregnancy losses are chromosomal abnormalities that occur by chance, except in the case of parental chromosomal rearrangements and are not under any controllable influences. This review focuses on the genetic and molecular abnormalities that may contribute to this clinical problem and delineates strategies for genetic evaluation and clinical management in subsequent pregnancies