عنوان مقاله:

An Effective Method for Detecting Y-chromosome Specific Sequences of Circulating Fetal DNA in Maternal Plasma During the First-trimester

محل انتشار:

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خلاصه مقاله:

Background and Aims: New advances in the use of cell-free fetal DNA (cffDNA) in maternal plasma of pregnant women has provided the possibility of applying cffDNA in prenatal diagnosis as a non-invasive method. One of the applications of prenatal diagnosis is fetal gender determination. Early prenatal determination of fetal sex is required for pregnant women at risk of X-linked and some endocrine diseases. The present study was carried out to perform an efficient polymerase chain reaction (PCR) method in order to improve sensitivity, specificity and accuracy of non-invasive fetal gender detection using fetal DNA in maternal plasma during ۸th -۱۲th weeks of pregnancy. Materials and Methods: Thirty-five pregnant women with ۸ to ۱۲ weeks of pregnancy were selected for prenatal fetal sex determination. Maternal peripheral blood was collected and cffDNA was extracted from ۳-ml of maternal plasma. Two multi copy Y-chromosome-specific region (DYS and DAZ) and a single copy gene (SRY) were amplified by real-time quantitative PCR. Amplification was labeled as positive, negative, or inconclusive according to a stringent algorithm. Results: Using this method, the sensitivity and specificity of the real-time PCR assay was ۱۰۰% and ۹۳.۸% for prenatal fetal sex detection, respectively. Conclusions: It is concluded that fetal sex can be determined with a high level of accuracy by our algorithm, after ۸ weeks of gestation with cffDNA analysis.

کلمات کلیدی:

Cell-free DNA, Real-Time PCR, Sex-determination

لینک ثابت مقاله در پایگاه سیویلیکا: