Genetic analysis of VEGF gene polymorphisms in women with recurrent pregnancy loss; development of a SNaPshot genotyping technique.

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Vascular Endothelial Growth Factor A (VEGF gene) has significant role in angiogenesis and recently studies suggest evidence for its implications in embryo development and critical role in fetal and placental angiogenesis where formation of vascular anomalies contribute to recurrent pregnancy loss (RPL). Here we designed a multiplex single-base extension method SNaPshot for identification of variants within the *VEGF* gene among a group of women experiencing recurrent early pregnancy loss. All individuals were analyzed for the presence variants in the *VEGF* gene using a multiplex SNaPshot kit for the reaction followed by capillary electrophoresis on a SeqStudio Genetic Analyzer (Applied Biosystems). Of the total of 91 women, 48 with pregnancy losses and 43 controls, 41 had more than two pregnancy losses. We excluded the cause of miscarriage by aneuploidy in the POCs (trisomi 13, 18, 21, X,Y). Two variants in the *VEGF* gene respectively (c.-1154G/A (rs1570360) and c.*237C/T (rs3025039) were identified and their presence observed in higher prevalence of the heterozygous and mutant homozygous genotypes for the both *VEGF* variants in group of women experienced RPLs compared with controls. All the variants of VEFG gene play a role in an increased frequency of RPL, however c.*237C/T genotypes seems to affect the embryo development and placental angiogenesis. By optimizing this technique, we can develop improved protocol and adding biomarkers in monitoring pregnancy outcome.

References

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