No association between apolipoprotein E polymorphisms and recurrent pregnancy loss

Our study does not support the reported association between APOE and recurrent pregnancy loss (RPL) than the clinical management of these patients should not be influenced by the presence or not of APO E polymorphisms. (Fertil Steril® 2010;93:276. ©2010 by American Society for Reproductive Medicine.)

Apolipoprotein (APO) E has roles beyond lipoprotein metabolism and has been associated with an increasing cardiovascular risk. The three major isoforms of human apolipoprotein E (ApoE2, ApoE3, and ApoE4) are coded for by three alleles (epsilon 2, 3, and 4). The E2, E3, and E4 isoforms differ in amino acid sequence at two sites: residue 112 (site A) and residue 158 (site B). A total of 310 patients included in this case control study. The first group (group A) includes 160 women with a recurrent (two or more) pregnancy loss (RPL) in which the known causes of recurrent pregnancy loss were excluded (anatomical anomalies of the uterus, chromosomal, immunologic risk factors including antiphospholipid antibodies, antinuclear antibodies, antithyroid antibodies and lupus anticoagulant, and celiac disease). As a control we used two groups: the first one (group B) includes 50 patients with a history of cardiovascular disease (venous thrombosis, stroke, or myocardial infarct) and the second (group C) includes 100 patients with familiarity for genetic thrombophilia or cardiovascular diseases. We decided to use as a control two groups of “high risk” patients, because it is well known in the literature that APO E polymorphisms are associated with increased cardiovascular risk. All patients were referred to our center for genetic counseling, and the molecular test for genetic thrombophilia was performed for clinical purposes. In this study, we use only data for APOE polymorphisms. Of the 160 women with RPL, 23 (14.3%) had ApoE3/E4 or ApoE4/E4 genotypes, compared with those in group B (8 of 50; 16%; P=0.80) and group C (24 of 100; 24%; P=0.10) who demonstrated an ApoE4 allele. Abnormalities of placental vasculature can result in a number of gestational pathologies, including first- and second-trimester miscarriages, intrauterine growth restriction, intrauterine fetal death, placental abruption, and preeclampsia. Inherited thrombophilia clearly increases the risk of adverse pregnancy outcomes. Moreover our ability to predict which pregnancies are greatest at risk for fetal loss remains extremely poor. Our results do not support the association between APO E and RPL as recently reported (1). Inherited thrombophilia is believed to be a multiple-gene disease with more than one defect, which explains why some women with thrombophilia never have a thrombotic event and others have complications. Recent evidence in the literature shows that the risk of reproductive disorders increases with increasing numbers of genetic risk factors (2), and women with just two pregnancy losses should be tested for genetic thrombophilia (3). Moreover, in women with recurrent pregnancy loss, the clinical management should not be influenced by the presence or lack of APO E polymorphisms. The presence of polymorphisms may occur without affecting the outcome of the gene product, as in the case of APO E in patients with RPL.

REFERENCES


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