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ARTICLE

MTHFR polymorphisms C677T and A1298C and associations with IVF outcomes in Brazilian women

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Abstract The aim of this study was to investigate the association between *MTHFR* gene polymorphisms and IVF outcomes in Brazilian women undergoing assisted reproduction treatment. A prospective study was conducted in the Human Reproduction Department at the ABC University School of Medicine and the Ideia Fertility Institute between December 2010 and April 2012. The patient population was 82 women undergoing assisted reproduction cycles. The *MTHFR* polymorphisms C677T and A1298C were evaluated and compared with laboratory results and pregnancy rates. The C677T variant was associated with proportions of mature ($P = 0.006$) and immature ($P = 0.003$) oocytes whereas the A1298C variant was associated with number of oocytes retrieved ($P = 0.044$). The polymorphisms, whether alone or in combination, were not associated with normal fertilization, good-quality embryo or clinical pregnancy rates. This study suggests that the number and maturity of oocytes retrieved may be related to the *MTHFR* polymorphisms C677T and A1298C.

KEYWORDS: assisted reproduction, embryos, genetic, ICSI, *MTHFR*, polymorphism

Introduction

Currently, more than 70 million couples are affected by infertility problems worldwide. To help these couples, assisted reproduction treatment has been an essential tool ever since 1978, when the first assisted reproduction baby, Louise Brown, was born in the UK. Over the last 35 years, great strides have been made in assisted reproduction,

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