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# Association Between Advanced Parental Age and Implantation Failure: A Prospective Cohort Study in Anhui, China

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**Abstract :** Purpose: This study aimed to explore the interaction of male and female age on implantation failure from in vitro fertilisation (IVF)/ intracytoplasmic sperm injection (ICSI) treatments in couples following their first cycles using the Anhui Maternal-Child Health Study (AMCHS). Methods: The AMCHS recruited 2042 infertile couples who were physically fit for in vitro fertilisation (IVF) or intracytoplasmic sperm injection (ICSI) treatment at the Reproductive Centre of the First Affiliated Hospital of Anhui Medical University between May 2017 to April 2021. This prospective cohort study analysed the data from 1910 cohort couples for the current paper data analysis. The multivariate logistic regression model was used to identify the effect of male and female age on implantation failure after controlling for confounding factors. Male age and female age were examined as continuous and categorical (male age: 20-<25, 25-<30, 30-<35, 35-<40, ≥40; female age: 20-<25, 25-<30, 30-<35, 35-<40, ≥40) predictors. Results: Logistic regression indicated that advanced maternal age was associated with increased implantation failure (P<0.001). There was evidence of an interaction between maternal age (30-<35 and ≥ 35) and paternal age (≥35) on implantation failure. (p<0.05). Only when the male was ≥35 years of increased maternal age was associated with the risk of implantation failure. Conclusion: In conclusion, there was an additive effect on implantation failure with advanced parental age. The impact of advanced maternal age was only seen in the older paternal age group. The delay of childbearing in both men and women will be a serious public issue that may contribute to a higher risk of implantation failure in patients needing assisted reproductive technology (ART).

**Keywords :** parental age, infertility, cohort study, IVF
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