

# Effect of Body Mass Index on the Outcome of *In-Vitro* Fertilization/ Intracytoplasmic Sperm Injection in Women

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## ABSTRACT

**Background:** Obesity, a known epidemic, is a leading cause of various reproductive disorders. Association of body mass index (BMI) with pregnancy outcomes, either ovarian or endometrial, is controversial and least elucidated. **Aim:** This study aimed to analyze the effect of BMI on *in-vitro* fertilization (IVF)/intracytoplasmic sperm injection (ICSI) outcome in women using self-oocytes, embryos prepared from donor oocytes (DE), or vitrified/frozen embryos (VE) obtained from both the SE and DE groups. **Materials and Methods:** A 9-month retrospective study was conducted on women undergoing IVF/ICSI. The women were grouped according to the World Health Organization classification of BMI ( $<18.50$ ,  $18.50\text{--}24.99$ ,  $25.00\text{--}29.99$ , and  $\geq 30.00\text{ kg/m}^2$ ). They were further subcategorized as SE, DE, and VE groups. Ongoing pregnancy rate (OPR) was recorded as primary, whereas pregnancy rate (PR), clinical PR (CPR), implantation rate (IR), and clinical abortion rate (CAR) were secondary endpoints. Age, number of mature eggs, usable embryos, and embryos transferred were also measured. The data were statistically analyzed using chi-square and analysis of variance.  $P$ -value  $<0.05$  was considered statistically significant. **Results:** OPR was statistically insignificant across all the groups. Secondary outcomes were statistically insignificant in all the groups except in VE, where IR ( $P=0.008$ ) and CAR ( $P=0.0002$ ) were statically significant. Other parameters were statistically insignificant among all the groups. However, in the SE and VE groups, the mean age was statistically significant (SE,  $P=0.0001$ ; VE,  $P=0.0191$ ). **Conclusion:** This study showed marginal/no effect of BMI on oocyte quality/endometrial receptivity and, subsequently, on the pregnancy outcome. However, well-designed, larger prospective studies are needed to clarify the role of BMI in pregnancy outcome in women undergoing IVF/ICSI.

**KEYWORDS:** Assisted reproductive technology, BMI, clinical abortion rate, implantation rate, obesity, ongoing pregnancy rate, pregnancy rate