Study on Visceral Fat Area (VFA) and IVF-ET Assisted Pregnancy Outcomes

Kun Liu\textsuperscript{a}, César Martín Plagaro\textsuperscript{b}, Bairong Shen\textsuperscript{c}

\textsuperscript{a} Reproductive Medicine Center of Lanzhou University First Hospital, Lanzhou, 730030, China
\textsuperscript{b} Biochemistry and Molecular Biology Department, University of the Basque Country UPV/EHU, 48940, Leioa, Biscay, Spain.
\textsuperscript{c} Institutes for Systems Genetics, West China Hospital, Sichuan University, Chengdu, 610000, China

Graphical Abstract

None

Abstract

Objective To examine the effect of visceral fat area (VFA) on pregnancy outcomes in in vitro fertilization and embryo transfer (IVF-ET). Methods We performed a single-center prospective observational study using female infertility patients with normal ovarian reserve undergoing IVF-ET. Endocrine abnormalities and autoimmune disease were excluded. Participants were divided into three groups based on VFA composition: lean (VFA≤50cm²), normal (50 cm² <VFA≤70 cm²), and overweight (VFA> 70 cm²). Result There were statistically significant differences in infertility years (P = 0.033), total ampules of gonadotropin used (P = 0.019), and clinical pregnancy rate (\(\chi^2 = 396.0, P <0.001\)) in the three VFA groups. Infertility years and total ampules of gonadotropin used in the overweight group increased significantly as compared to lean and normal group. Clinical pregnancy rate decreased significantly with VFA reduction. However, there was no significant difference in down-regulation duration of Gonadotrophin-releasing hormone (GnRH) agonists (GnRHa) (P = 0.762), total ampules of GnRHa (P = 0.378), days of ovulation (P = 0.285), E\textsubscript{2} level on trigger day (P = 0.130), number of eggs retrieved (P = 0.953), two pronuclei (2PN) rate (P=0.415), and good-quality embryos (P=0.149). Conclusion An
increased risk of adverse pregnancy outcome associated with increased or decreased of VFA.

**Key word** Visceral Fat Area; In Vitro Fertilization and Embryo Transfer; Pregnancy Outcomes

References


