

Use of IVF procedure for male infertility has doubled; not linked with improved outcomes

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The use of an assisted reproduction technique known as intracytoplasmic sperm injection (ICSI) doubled between 1996 and 2012, although compared with conventional in vitro fertilization (IVF), use of ICSI was not associated with improved reproductive outcomes, according to a study in the January 20 issue of *JAMA*.

Intracytoplasmic sperm injection is an IVF procedure in which a single sperm is injected directly into an egg. The introduction of ICSI in 1992 revolutionized the treatment of couples with male factor infertility (infertility due to abnormal semen characteristics, abnormal sperm function, or surgical sterilization), and made paternity possible for a large proportion of men with no measurable [sperm](#) count. In contrast to conventional IVF, ICSI bypasses natural barriers to fertilization, thereby increasing the possibility of the transmission of genetic defects compared to conventional IVF. In addition, the procedure is also considerably more expensive than conventional IVF and adds to financial burdens already experienced by many couples undergoing fertility treatment, according to background information in the article.

Sheree L. Boulet, Dr.P.H., M.P.H., of the Centers for Disease Control and Prevention, Atlanta, and colleagues assessed national trends and [reproductive outcomes](#) of fresh IVF cycles (embryos transferred without being frozen) associated with the use of ICSI compared with conventional IVF. The researchers used data on fresh IVF and ICSI cycles reported to the U.S. National Assisted Reproductive Technology Surveillance System during 1996-2012.

Of the 1,395,634 fresh IVF cycles from 1996 through 2012, 908,767 (65.1 percent) used ICSI and 499,135 (35.8 percent) reported male factor infertility. Among cycles with male factor infertility, ICSI use increased from 76.3 percent to 93.3 percent; for those without male factor infertility, ICSI use increased from 15.4 percent to 66.9 percent.

During 2008-2012, male factor infertility was reported for 35.7 percent (176,911/494,907) of fresh cycles. In the absence of male factor infertility, ICSI use was associated with small but statistically significant decreases in implantation, pregnancy, live birth, multiple live birth, and low birth weight rates compared with conventional IVF.

"Although such differences may be a function of the large sample size and thus not clinically relevant, our findings suggest that use of ICSI may improve fertilization rates but not implantation or pregnancy rates in the setting of unexplained infertility, advanced maternal age, and low oocyte [a cell from which an egg develops] yield," the authors write.

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