



## ONGOING PREGNANCY RATES (OPR) FROM 30,000 SINGLE VS. DOUBLE INTRAUTERINE INSEMINATION (IUI) CYCLES ACCORDING TO SPERM SOURCE, SEXUAL ORIENTATION AND PARTNER STATUS

B. C. Monseur, J. M. Franasiak, L. Sun, R. T. Scott, Jr., D. J. Kaser

**OBJECTIVE:** Despite several small randomized controlled trials, the role of single vs. double IUI remains uncertain. Less is known about the utility of a second IUI among patients with undocumented fertility, such as lesbian and single women. The purpose of this study was to assess OPR in patients electing single vs. double IUI, stratified by sperm source, sexual orientation and partner status.

**DESIGN:** Retrospective cohort study

**MATERIALS AND METHODS:** All patients undergoing their first natural or medicated IUI at our practice from 11/1999 to 3/2017 were included. IVF cycles cancelled to IUI were excluded. T-tests and Wilcoxon rank-sum tests were used for continuous data, and chi-square for categorical data. Multivariable logistic regression was used to model the association between IUI number and OPR (fetal cardiac activity at  $\geq 7$  weeks) according to sperm source (autologous vs. donor), adjusted for patient age, BMI, day 3 FSH, number of lead follicles  $\geq 17$ mm, peak E2 and post-wash total motile counts. Subanalyses according to sexual orientation and partner status were performed to compare heterosexual couples with proven infertility to lesbian couples and single women with undocumented fertility. Given our sample size we had 80% power ( $\alpha=0.05$ ) to detect a 2.3% difference in autologous OPR and a 5.5% difference in donor OPR.

**RESULTS:** During the study period 30,835 patients met inclusion criteria (single IUI: 2,245 vs. double IUI: 28,690). Mean patient age ( $33.7 \pm 5.5$  vs.  $34.6 \pm 4.5$  y) and BMI ( $25.9 \pm 6.5$  vs.  $26.1 \pm 6.6$ ) were similar. Autologous sperm OPR were significantly higher with double IUI (12.0% vs. 14.1%; Table). A similar direction and magnitude of effect was observed for donor sperm OPR, though this did not reach statistical significance. Most patients (59.8%) undergoing donor IUI self-identified as lesbian or single. Lesbian and single women were significantly more likely to undergo single IUI (RR 1.35, 95% CI 1.11-1.65;  $P=0.003$ ). In subanalysis donor OPR were higher for heterosexual, but not lesbian and single, patients undergoing double IUI (Table).

**CONCLUSIONS:** Double IUI is associated with significantly higher OPR for heterosexual couples using an autologous or donor sperm source. The benefit of a second IUI is less clear in patients with undocumented fertility using donor sperm, such as lesbian couples and single women, though this study was underpowered to detect a statistically significant difference in this subgroup. These data add to a growing literature of reproductive outcomes in the LGBTQ population.

Table. OPR according to IUI number, sperm source, sexual orientation and partner status				
	Single IUI	Double IUI	AOR (95% CI)	P-value
<b>Autologous sperm</b>	211/1,757 (12.0)	3,700/26,189 (14.1)	1.24 (1.03-1.51)	0.029
<b>Donor sperm</b>	52/388 (13.4)	395/2,501 (15.8)	1.17 (0.76-1.88)	0.488
• Heterosexual	13/129 (10.1)	173/1,032 (16.8)	2.62 (1.01-8.7)	0.047
• Lesbian or single	39/259 (15.1)	222/1,469 (15.1)	0.91 (0.56-1.56)	0.732