DOUBLE INSEMINATION DOES NOT IMPROVE PREGNANCY IN ORAL OVULATION INDUCTION INTRAUTERINE INSEMINATION CYCLES

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Background
Some infertility clinics perform two inseminations within a single intrauterine insemination (IUI) cycle, instead of a single insemination, to increase the chance of pregnancy. This practice is thought to expose an oocyte to increased amounts of sperm, and to account for variability in ovulation time after taking an ovulatory trigger. Prior IUI studies investigating pregnancy outcomes in double *vs*. single insemination have included patients on both oral medication and gonadotropins for ovulation induction, with mixed results.[1,2]

Objective
To determine whether double insemination during IUI cycles using letrozole and/or clomiphene for ovulation induction improves pregnancy outcomes when compared to single insemination.

Materials and Methods
A retrospective multicenter cohort study was conducted. Patients treated with letrozole and/or clomiphene as the ovulation induction agent who underwent single or double insemination during a single IUI cycle from January 1, 2017 to December 31, 2023 were collected. Cycles using gonadotropins for ovulation induction were excluded. Only the first IUI cycle for a single patient was included if the patient underwent multiple cycles. A total of 6,082 IUI cycles met inclusion criteria. Patients were stratified based on whether they underwent a single (n=5,562) or double (n=520) insemination within a single cycle. Pregnancy outcomes (including positive pregnancy test, clinical intrauterine pregnancy, and ongoing pregnancy) were evaluated with Chi-square analyses to determine statistical significance between groups. An independent T-test was performed to determine statistical significance for continuous variables.

Results
Ongoing pregnancy was not significantly different between cycles that underwent double *vs.* single insemination (12.1% *vs.* 11.8%, p=0.828). Positive and clinical intrauterine pregnancies also were not significantly different (15.6% *vs.* 17.4%, p=0.283; 14.0% *vs.* 13.6%, p=0.777, respectively) between the two groups. The total motile sperm count during the insemination was not significantly different between double *vs.* single insemination groups (31.6 *vs.* 28.4 million; p=0.073). Prior to ovulatory trigger for insemination, the serum luteinizing hormone and progesterone levels were clinically similar between double *vs*. single insemination (9.7 *vs.* 12.9 mIU/mL and 0.44 *vs.* 0.54 ng/ml, respectively).

Conclusions
Double insemination does not significantly improve pregnancy outcomes compared to single insemination in IUI cycles using letrozole/clomiphene for ovulation induction. The decision to proceed with double insemination should not be a routine practice given lack of proven benefit.

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References:

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