ABSTINENCE PERIOD LESS THAN 2 DAYS IMPROVES IUI OUTCOMES FOR PATIENTS UNDER THE AGE OF 35

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Background:

The optimal abstinence period before semen sample production remains debated. The World Health Organization (WHO) currently recommends a minimum abstinence period of 2 days before specimen collection for all assisted reproductive technology (ART) procedures, including intrauterine insemination (IUI). Differing days of abstinence (DOA) can impact semen parameters noted on semen analysis and may impact DNA fragmentation. While these changes have been investigated as to how they impact in vitro fertilization (IVF), the literature remains limited regarding IUI outcomes. Additionally, these recommendations have not undergone age stratified analysis to look for differences based on age of male producing semen sample.

Objective:

To evaluate the impact of abstinence period less than 2 days on pregnancy outcomes in patients undergoing IUI.

Materials and Methods:

Design: Retrospective cohort.

Setting: Academic fertility center.

Patients: 8,044 IUI cycles

Intervention: Days of abstinence (<2 days, 2-5 days, >5 days) within paternal age defined sub-groups (<35 years, 35-40 years, and >40 years of age).

Outcomes: Rates of positive pregnancy test, clinical pregnancy, and live birth

Statistics: Parametric and non-parametric tests were used. Logistic regression was performed to account for male and female age at time of IUI.

Results:

Male age ranged from 23-69 years old (mean 37 years) and abstinence periods ranged from 0.5-45 days (mean 2.8 days) before sample collection for IUI. The patients were then stratified by DOA (<2, 2-5, >5 days). There was no difference between DOA <2, DOA 2-5, and DOA >5 for positive pregnancy test (21%, 22.1%, 18.8%, p value = 0.24, respectively), clinical pregnancy (16.5%, 22.1%, 18.8%,

p=0.32, respectively), or live birth (14.1%, 13.4%, 11.3%, p=0.4, respectively). Next patients were stratified by age (<35, 35-40, >40 years old). In the <35 years old sub-group, a total of 367 patients had <2 DOA, 2587 patients had 2-5 DOA, and 90 patients had >5 DOA. Within the age <35 years sub-group, there was decreasing positive pregnancy tests (24.8% vs 23.9% vs 14.4%, p= 0.1), clinical pregnancies (19.6% vs 17.5% vs 10.5%, p= 0.1), and livebirths (17.3% vs 15.1% vs 10.5%, p= 0.3) with increasing DOA (<2, 2-5, and >5 DOA respectively). There was no consistent trend within the 35-40 years or >40 years sub-groups.

Unadjusted and adjusted analysis within the <35 year age group noted a statistically significant decrease in positive pregnancy test for >5 DOA (Unadjusted OR 0.54, 95%CI 0.297-0.975, p=0.04; adjusted for female age OR 0.54, 95%CI 0.297-0.976, p=0.04). There was a non-significant trend toward decreased clinical pregnancy (OR 0.55, 95%CI 0.28-1.1, p=0.095) and live birth (OR 0.67, 95%CI 0.327-1.33, p=0.24).

Conclusions:

This study supports that an abstinence periods less than 2 days does not have negative impacts on pregnancy outcomes for patients undergoing IUI across all age groups. Notably, there was a significant increase in positive pregnancy test for shortened abstinence period (<2 DOA) within the <35 years of age sub-group. These findings support reevaluating the WHO guidelines as they pertain to abstinence periods for IUI and recommend pursuing further age stratified investigation to optimize IUI guidelines and procedures.

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