

CONCLUSIONS: Despite overall low fertility rates, IUI remains a common first step in the management of infertility given ease of treatment and low cost. Our device and study design failed to show a significant increase in sperm retention above conventional IUI technique. Notable, and not a surprising finding, is a frequent and measurable sperm reflux (sperm loss) after routine IUI, suggesting further research is warranted to improve IUI efficiency. Guiding future efforts, the finding of a significant correlation of sperm retention with extended device placement suggests a need to place and retain a therapeutic device for a prolonged period. Further, this study design suggests viability of using pre- and post-IUI vaginal washing technique for future studies.

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SUPPORT: NA.

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A MULTI-CENTRIC, PROSPECTIVE TEST OF CAP-SCORE'S™ ABILITY TO PREDICT A MAN'S PROBABILITY OF GENERATING PREGNANCY.

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OBJECTIVE: Semen analysis lacks an evaluation of fertilizing ability, and fails to diagnose many cases of male factor infertility. Previously, Cap-Score™, the percentage of sperm that can capacitate, showed strong correlations with male fertility (retrospective and cohort comparison studies), and prospectively identified low versus normal fertility using a simple cut-off. However, male fertility is a continuum; logistic regression based on clinical pregnancy outcomes revealed how Cap-Score relates to the probability of generating a pregnancy (PGP) in 3 cycles (Schinfeld et al, 2018; n=124; 5 clinics). Here, we prospectively tested the relationship between the predicted PGP and actual intrauterine insemination (IUI) outcomes.

DESIGN: A multicentric prospective test of the PGP model's ability to predict pregnancy. IUI was used as the experimental model to ensure collection of outcomes and provide control over number and timing of inseminations relative to ovulation. For inclusion, men had to have ≥ 3 million cells post-wash, and female partners could not have factors precluding IUI, e.g., tubal occlusion, hydrosalpinges.

MATERIALS AND METHODS: Studies approved by Weill Cornell's IRB (1210013187) or WIRB (20152233). Cap-Score and outcomes were obtained from 6 clinics (n=292). A total of 128 finished treatment (pregnant or ≥ 3 IUIs). The PGP model was tested in two ways. First, the new outcomes were added to the prior 124 and the model was recalculated to determine change. Second, the 128 new outcomes were divided into rank-ordered groups of roughly equal size. When split into 5 groups, each had 25-26 observations; when split into 6 groups, each contained 21-22 observations. The proportion of individuals successfully generating pregnancy within a group was compared to the average predicted PGP within a group (linear regression).

RESULTS: Only a slight change (average 2.6%) from the original model ($PGP = 1/[1 + \exp\{-2.86 + 0.08 * \text{Cap-Score}\}]$; n=124; p<0.01) was noted when new data were added ($PGP = 1/[1 + \exp\{-2.26 + 0.06 * \text{Cap-Score}\}]$; n=252; p<0.001), and fit improved. When predicted PGPs were compared to observed pregnancies, significant linear relationships were seen for n=5 ($y = 0.81x + 0.10$; $R^2 = 0.84$; p=0.03) and n=6 ($y = 0.69x + 0.14$; $R^2 = 0.86$; p<0.01). The slopes were not different from 1 and intercepts were not different from 0 (p>0.05; t-tests).

CONCLUSIONS: Despite the potential for introducing noise when using cases from diverse settings, there was no significant change upon doubling the data set. A 1:1 relationship was detected between predicted PGPs and the observed proportion of men generating pregnancy. These results further demonstrate the strong association between Cap-Score, sperm function/fertilizing ability, and the ability to generate pregnancy.

References: Schinfeld et al. A Cap-Score™ Prospectively Predicts Probability of Pregnancy. *Mol Reprod & Devel.* 2018;85 (8-9), 654-664

SUPPORT: Androvia LifeSciences performed the Cap-Score Male Fertility Assay.

LGBTQ REPRODUCTIVE ISSUES

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QUALITY OF LIFE AFTER FERTILITY PRESERVATION AMONG TRANSGENDER PEOPLE.

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OBJECTIVE: There are limited data on the quality of life among transgender people who sought fertility preservation or family building. This pilot study sought to describe the quality of life among transgender people who sought fertility services through the Gender Expansive Attitudes about Reproductive Health (GEAR) study.

DESIGN: Cross sectional survey.

MATERIALS AND METHODS: This survey queried transgender people who underwent ovarian stimulation or semen cryopreservation at an academic medical center between January 1, 2015 and March 31st, 2019. Enrollment is ongoing. Primary outcomes included the number of healthy days and depressed/anxious days as measured by the CDC health related quality of life survey and whether or not ovarian stimulation or semen cryopreservation was emotionally challenging. Primary outcomes were compared by gender identity and ease of gamete collection using a Fisher's Exact or Wilcoxon Rank-Sum test where appropriate.

RESULTS: Among 40 transgender people who presented for care, 18 initiated the survey and 16 completed the survey (n=12 transfeminine people, n=4 transmasculine people).

The median number of healthy days for the entire cohort was 21 (IQR 15.5-25.5). Transmasculine people experienced more healthy days than transfeminine participants (p=0.01). There were no associations between gender identity and the number of depressed or anxious days (p=0.09 and 0.14 respectively.)

Fourteen participants completed the survey about the ease of gamete collection. The majority of people, 64.3% (n=8 transgender women, n=1 transgender man) found the process of ovarian stimulation or sperm cryopreservation "not at all difficult" or "neither difficult or easy." Five participants (n=4 transgender women, n=1 transgender man) found the process "somewhat difficult" or "very difficult." The ease or difficulty of fertility preservation was not associated with either gender identity (p=0.604) nor the number of healthy days, depressed days or anxious days (p=0.688, 0.528 and 1.00 respectively).

CONCLUSIONS: In this pilot study, transmasculine people experienced more healthy days compared to transfeminine people. Gender identity was not associated with the number of depressed or anxious days. Whether or not participants found the process of ovarian stimulation or sperm cryopreservation emotionally difficult, was not associated with quality of life metrics.

SUPPORT: None.

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IUD CHOICE IN TRANSGENDER AND GENDER DIVERSE INDIVIDUALS.

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OBJECTIVE: Although use of the intrauterine device (IUD) is increasing, the appeal among transgender and gender diverse individuals is unknown. Our objective is to assess the reasons IUD users in this population are choosing one of the five FDA-approved devices available and if they are satisfied.

DESIGN: Cross-sectional, survey-based study.