PROVIDER EXPERIENCE DOES NOT INFLUENCE PREGNANCY OUTCOMES FOLLOWING INTRAUTERINE INSEMINATION

Blaire Scott, M.D.[1], Cecilia Rosenbaum, M.D.[1], Jennifer D. Peck, Ph.D.[2], LaTasha B. Craig, M.D.[1]

(1) Section of Reproductive Endocrinology & Infertility, Dept of Ob/Gyn, The University of Oklahoma Health Sciences Center, Oklahoma City, OK,

(2) Department of Biostatistics and Epidemiology, University of Oklahoma Hudson College of Public Health, Oklahoma City, OK

BACKGROUND AND OBJECTIVE

- Intrauterine insemination (IUI) is a widely utilized fertility treatment traditionally performed by physicians.
- Advanced practice providers (APPs) and registered nurses (RNs) are performing IUIs, yet the influence of provider experience on clinical outcomes remains unclear.
- Ensuring consistent, high-quality care across provider types and experience levels is critical to optimizing patient outcomes.

Our objective was to evaluate whether clinical pregnancy rates (CPR) following IUI differ by providers' years of experience.

METHODS

Study type: Retrospective cohort study

Inclusion criteria: Patients undergoing ultrasound-guided IUI at a single academic institution from November 2017 to September 2022.

Exclusion criteria: Canceled cycles, cycles with missing provider or outcome data

Primary outcome: CPR, defined as the presence of an intrauterine gestational sac with cardiac activity on ultrasound.

Secondary outcome: Biochemical pregnancy rate, defined as a serum hCG ≥10 mIU/mL.

Provider experience: Categorized as <6 months, >6 to 12 months, >1 to 2 yrs, >2 to 5 yrs, >5 to 10 yrs, and >10 yrs

Statistical analysis: Generalized estimating equations (GEE) with cluster-weighted modified Poisson regression and robust standard errors were used to estimate risk ratios (RRs) and 95% confidence intervals (CIs).

RESULTS

6181 cycles → **Excluded:** • **Canceled cycles** • **Missing data** → **6129 cycles**

Table 1. Association between IUI provider experience and clinical pregnancy rates*

Provider Experience	Number of Cycles	Number of Pregnancies	Pregnancy Rate (%)	Unadjusted RR (95% CI)	Adjusted RR (95% CI)
<6 months	453	50	11.0	1.32 (0.93, 1.87)	1.26 (0.87, 1.83)
>6 to 12 months	625	76	12.2	1.43 (1.05, 1.94)	1.33 (0.96, 1.85)
>1 to 2 years	883	86	9.7	1.07 (0.79, 1.45)	0.99 (0.71, 1.38)
>2 to 5 years	2119	247	11.7	1.28 (0.99, 1.65)	1.19 (0.90, 1.57)
>5 to 10 years	1201	148	12.3	1.33 (1.02, 1.75)	1.22 (0.91, 1.63)
>10 years	843	82	9.7	1.00 (Ref)	1.00 (Ref)

Table 2. Association between IUI provider experience and biochemical pregnancy rates*

Provider Experience	Number of Cycles	Number of Pregnancies	Pregnancy Rate (%)	Unadjusted RR (95% CI)	Adjusted RR (95% CI)
<6 months	453	67	14.8	1.15 (0.85, 1.54)	1.07 (0.77, 1.47)
>6 to 12 months	625	102	16.3	1.26 (0.97, 1.64)	1.17 (0.88, 1.55)
>1 to 2 years	886	127	14.3	1.07 (0.83, 1.38)	0.97 (0.73, 1.28)
>2 to 5 years	2120	318	15.0	1.14 (0.92, 1.41)	1.06 (0.84, 1.35)
>5 to 10 years	1202	205	17.1	1.25 (1.00, 1.57)	1.14 (0.89, 1.46)
>10 years	843	119	14.1	1.00 (Ref)	1.00 (Ref)

*Adjusted model controls for patient age, BMI, prior pregnancy, donor sperm, IUI difficulty, IUI provider (registered nurse, nurse practitioner/physician assistant, fellow, physician), infertility diagnoses (male factor, unexplained, PCOS, tubal factor, other diagnosis), and ovulation induction medication (unstimulated, clomiphene citrate, letrozole, follicle stimulating hormone)

RESULTS

Total cycles included: 6129 cycles across 2077 patients

Average patient age: 33.5 ± 4.8 years

Primary outcome: CPR ranged from 9.7% to 12.3%. Pregnancy rates for providers with <6 months experience compared to >10 years showed no statistical difference (RR 1.26, CI 0.87, 1.83). See Table 1.

Secondary outcome: Biochemical pregnancy rate ranged from 14.1% to 17.1%. Pregnancy rates for providers with <6 months experience compared to >10 years showed no statistical difference (RR 1.07, CI 0.77, 1.47). See Table 2.

DISCUSSION

Adjusted analysis revealed no statistically significant differences in clinical or biochemical pregnancy rates when compared by provider experience ranging from <6 months to >10 years performing IUIs.

These findings support the continued education and safe expansion of IUI procedural responsibilities to trained fellows, APPs, and RNs, potentially improving clinical efficiency and access to care without compromising success rates.

CONTACT INFORMATION

REFERENCES