Impact of Endometriosis Diagnosis on Endometrial Receptivity (usER) and IVF Outcomes

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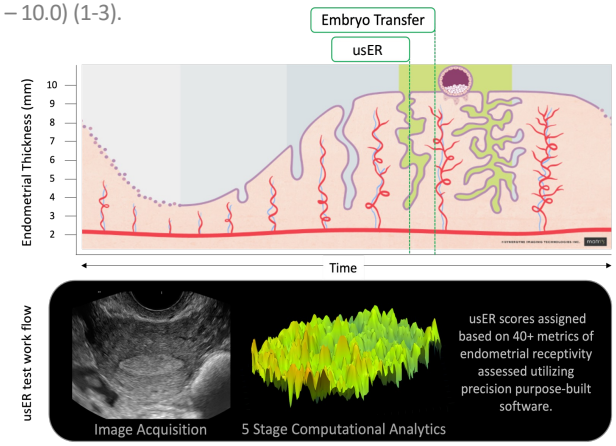
Background

Endometriosis & Endometrial Receptivity

Endometriosis has been implicated as a primary cause of female infertility; however, the impact of endometriosis diagnosis on both endometrial receptivity and IVF cycle outcomes relative to the general fertility-care population remains unclear. usER testing (Matris, Synergyne Imaging Technology Inc, Saskatoon, SK) provides a novel opportunity to evaluate the quality of endometrial preparations in patients undergoing routine IVF therapy and is uniquely positioned to address how endometriosis diagnosis may influence endometrial receptivity.

usER Testing for Endometrial Receptivity

usER testing is a non-invasive per-cycle approach to assess the quality of endometrial preparations ~48 hours ahead of embryo transfer. The usER test scores are on a 10-point scale and the test has been demonstrated to improve IVF outcomes and conserve embryos through selection of cycles with 'optimal' usER scores (7.0 – 10.0) (1-3).



Study Objectives

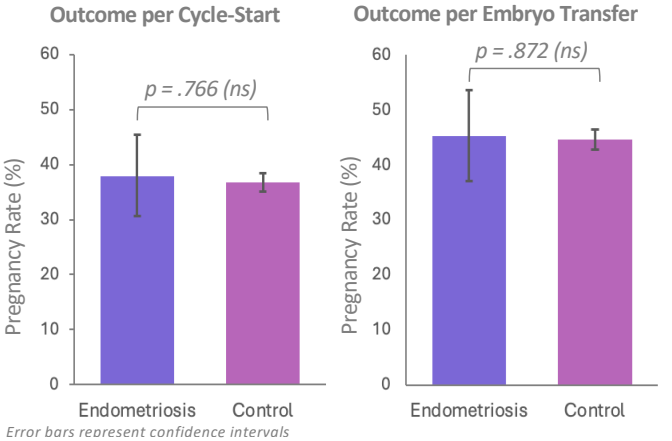
To determine if endometriosis diagnosis impacts endometrial receptivity and/or IVF cycle outcome.

Study Design & Duration

Retrospective non-interventional analysis including 3736 IVF cycles conducted at a Canadian multi-clinician fertility care centre. Data were acquired from a chart review of deidentified patient files from 2014 – 2023. Endometriosis diagnoses were interpreted in a binary fashion (present or absent): No staging/grading or notation of severity was provided in the patient charts.

Results

Endometriosis diagnosis was not predictive of endometrial receptivity or cycle outcome.



	Endometriosis	Control	*p*-value
Number of records (n)	177 (4.7% of cases)	3559 (95.3% of cases)	--
usER Score Range	0.5-9.5	1.0-9.5	--
Mean usER Score	7.45	7.41	$p = .643$
Mode usER Score	8.0	8.0	--
% of cycles with 'optimal' usER score	79 %	78 %	$p = .319$
Mean patient age	35.84	36.72	$p = .0005$*
Pregnancy Rate % (Cycle Start / per ET)	37.9 % / 45.3 %	36.8 % / 43.7%	$p = .766$ / $p = .872$

Conclusions

- There were no significant differences in usER score ($p = .319$), or in pregnancy outcome ($p = .766$ / $p = .872$) between the endometriosis and comparator cohorts, even though average patient age was significantly lower in the endometriosis cohort.
- Endometriosis diagnosis did not appear to have a significant impact on endometrial receptivity assessment or IVF outcomes relative to the general infertility population.
- Future analyses are required to determine if the degree of endometriosis may affect usER scores or pregnancy outcomes.

References & Resources:

1) Pierson R. et al (2012) Fertil Steril *98*, S225.
2) Cadesky K. et al (2019). Proceedings of the CFAS *19-21*, p121.
3) Pierson H. et al (2021). Fertil Steril. 116, E- 312