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P-210 A new insight into the effects of systemic lupus erythematosus on oocyte and embryo development and female fertility

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Study question: Does SLE affect oocyte and embryo development and female fertility in female patients?

Summary answer: Patients with SLE present worse outcomes in oocyte and embryonic development, thus yielding compromised female fertility and clinical pregnancy.

What is known already: Systemic lupus erythematosus (SLE) is often associated with adverse reproductive outcomes. However, it’s currently unclear regarding the role of SLE in oocyte and embryonic development. Also, it’s controversial whether SLE hurts fertility. There is a lack of comprehensive understanding and assessment of fertility in patients with SLE.

Study design, size, duration: This study retrospectively investigated oocyte and embryo development, ovarian reserve, and clinical outcomes in SLE patients who underwent in vitro fertilization (IVF) treatment from January 2013 to September 2022 at the University Hospital.

Participants/materials, setting, methods: In this study, we collected data from 34 SLE patients who were previously diagnosed and in remission for a total of 44 IVF cycles and matched 102 infertile women with a total of 148 IVF cycles by Propensity Score Matching (PSM) of 1:3 ratio. We then evaluated baseline characteristics, ovarian reserve, IVF laboratory outcomes, and clinical outcomes between the two groups.

Main results and the role of chance: After PSM matching, baseline characteristics including age, infertility types, and duration, as well as infertility causes overall coincided between the two groups. Anti-mullerian hormone (AMH) was significantly lower in the SLE group vs comparison (1.9 vs. 3.3 ng/mL, P=0.001). The SLE group performed a significant reduction in available embryo rate (76.6% vs. 86.0%, P=0.001), good-quality blastocyst formation rate (35.1% vs. 47.0%, P=0.003), and blastocyst formation rate (51.0% vs. 67.7%, P=0.001) compared to the comparison. As for clinical outcomes, the implantation rate in the SLE group was notably lower (37.9% vs. 54.9%, P=0.022). The CLBR following every embryo-transfer procedure was distinctly lower (41.2% vs 68.6%, P=0.016) in the SLE group vs comparison. Also, the conservative and optimal CLBRs following every complete cycle procedure were significantly reduced in the SLE group vs the comparison (P=0.001, both)

Limitations, reasons for caution: It’s a retrospective and single-center study, which is relevant to an inevitable risk of bias. Due to its special population selection, the sample size of this study is quite small.

Wider implications of the findings: This study provides data support to explore further the impact of SLE or other autoimmune diseases on female fertility, and it also calls for more attention to be given to these special patients by reproductive physicians. Comprehensive fertility assessment and individualized fertility guidance are recommended for patients with SLE.

Trial registration number: TJ-IRB2021 I 280