# Real World Reproductive Outcome and Gynecologic Comorbidities In Women with Endometriosis in a non-IVF Setting: A Retrospective Study

Maryam Al Shukri, Al Shimaa Al Riyami , Wadha Al Ghafri, **V. Gowri** | Sultan Qaboos University | Hospital and College of Medicine and Health Science | Oman

## Background

The chronicity of endometriosis and its recurrent nature requires a lifelong cost-effective approach to preserving reproductive capacity for women. Managing endometriosis-related infertility is a challenge to the patients, the health care systems, and the scientific community. As evidence accumulated over time, there has been a noticeable shift in the recommendations for the management of women with endometriosis from surgery being the gold standard for diagnosis and management to become selective and prioritized if medical management failed. ART is becoming the best option for the management of endometriosis-related infertility in cases of severe disease, deep infiltrating endometriosis, women with low fertility index Endometriosis-related infertility is a disease associated with significant morbidity and distress to the couple and requires timely, multidisciplinary, and often high-cost care involving assisted reproductive technologies (ART). Many health care systems in the Middle East do not provide financial coverage for ART.

## Objectives

This study aims to describe the reproductive outcome in a form of a clinical pregnancy rate in women with endometriosis-related infertility in a health care system that does not provide coverage for ART. It also assess the prevalence of different gynecologic conditions co-exist with endometriosis in this subgroup of women.

## Methods

This is a retrospective observational cohort study on women who attended the gynecologic outpatient department at SQUH with endometriosis as a diagnosis over 9 years period from Jan 2011 to December 2019. The electronic medical record system of the hospital were reviewed for the demographic features, obstetrics and gynecologic history/findings, management plans and pregnancy outcomes. The data was analyzed using Statistical Package for Social Sciences IBM- SPSS software, version 23. Ethical approval was granted by the Research and Ethical approval committee at college of medicine and Health sciences. Women of reproductive age seeking pregnancy were included in the analysis The sample includes those who were managed somewhere else with or without surgery before presenting to our hospital and those who had first presentation to our clinic. The couple seeking fertility is further evaluated for ovarian reserve, uterine, tubal, and male factors. Those who were considered candidates for ovulation induction (OI) with or without intrauterine insemination (IUI) were referred to the infertility team for assessment and further management. Those judged to be candidates for higher-level fertility management options like IVF/ICSI were advised to seek help in private health institutions that provide ART services.

## Results- Overall Pregnancy Rate

Women of reproductive age seeking pregnancy were 144. with a mean age of 31.10±5.73 years. The mean duration of follow-up was 30.18 months and 43/144 (29.9%) had a follow-up > 60 months. Based on surgical staging, 11.8% had mild disease, 70.1% had moderate to severe disease and 18.1% were not operated. After a thorough assessment, (30.2%) were advised to seek IVF as a primary treatment for infertility but 23.08% declined the advice. Of the 144, 24.3% achieved a clinical pregnancy. (16/144),11% conceived spontaneously. (11/144) 7.6% conceived with OI+/- IUI and the rest conceived with a self-sponsored IVF. The overall clinical pregnancy rate was not statistically different between those who had surgery and those did not have surgery (P-value 0.474).

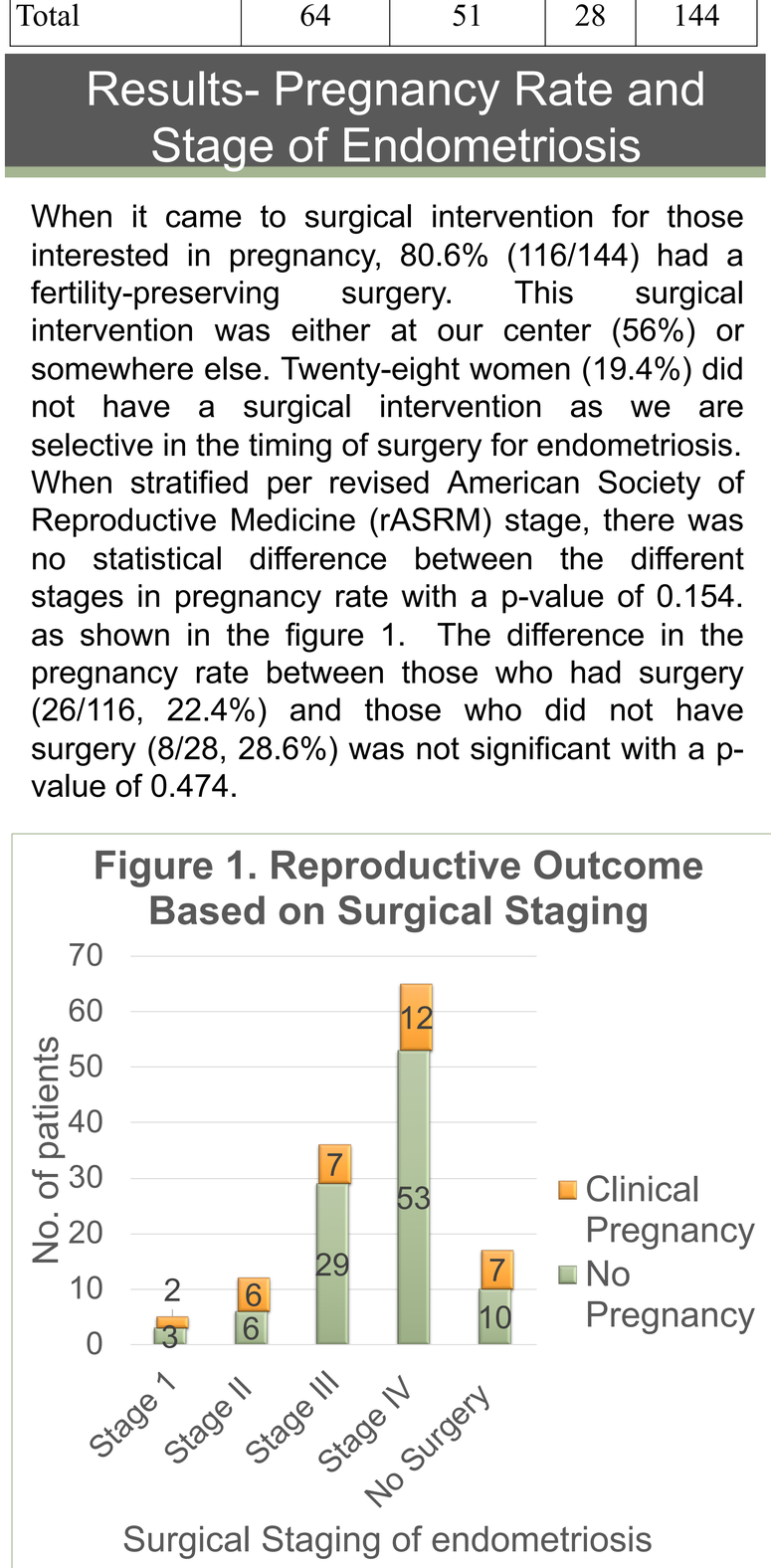
**Table1:** Reproductive outcome and type of fertility treatment

| | Attempted Fertility treatment | | | Total |
|---|---|---|---|---|
| | None | OI+/- IUI | IVF | |
| Pregnancy after attending SQUH | 48 | 40 | 21 | 109 |
| | 16 | 11 | 7 | 34 |
| Total | 64 | 51 | 28 | 144 |

## Results- Pregnancy Rate and Stage of Endometriosis

When it came to surgical intervention for those interested in pregnancy, 80.6% (116/144) had a fertility-preserving surgery. This surgical intervention was either at our center (56%) or somewhere else. Twenty-eight women (19.4%) did not have a surgical intervention as we are selective in the timing of surgery for endometriosis. When stratified per revised American Society of Reproductive Medicine (rASRM) stage, there was no statistical difference between the different stages in pregnancy rate with a p-value of 0.154. as shown in the figure 1. The difference in the pregnancy rate between those who had surgery (26/116, 22.4%) and those who did not have surgery (8/28, 28.6%) was not significant with a p-value of 0.474.

**Figure 1. Reproductive Outcome Based on Surgical Staging**




## Results- Co-existing Gynecologic Morbidity

A significant proportion (63/144) 43.8% of those interested in pregnancy had another gynecologic morbidity as shown in Table 2. the frequency of these reported pathologies is less compared to what is reported in the literature. We do strongly believe that especially adenomyosis is underdiagnosed in our group of endometriosis patients which reflects the clinical ignorance of the disease and the lack of agreed criteria for diagnosis.

**Table2:**: Coexisting gynecologic conditions

| Co-existing gynecologic condition | Pregnancy after treatment at SQUH | | Total No. | % of 144 |
|---|---|---|---|---|
| | No | Yes | | |
| None | 60 | 21 | 81 | 56.3 |
| Other ovarian cyst | 1 | 2 | 3 | 2.1 |
| Fibroids | 18 | 2 | 20 | 13.9 |
| Adenomyosis | 5 | 1 | 6 | 4.2 |
| [1]PID/TOA | 9 | 1 | 9 | 6.3 |
| [2]RPL | 2 | 1 | 3 | 2.1 |
| Mullerian Anomalies | 8 | 4 | 12 | 8.3 |
| [3]PCOS | 1 | 2 | 3 | 2.1 |
| Biopsy proven endometritis | 2 | 0 | 2 | 1.4 |
| [4]FSH>20 | 4 | 0 | 4 | 2.8 |
| Endometrial hyperplasia | 1 | 0 | 1 | 0.9 |

[1]PID/TOA: Pelvic inflammatory disease/Tubo-ovarian Abscess
[2]RPL: Recurrent Pregnancy Loss
[3]PCOS: Polycystic Ovary Syndrome
[4]FSH: Follicle stimulating Hormone

## Conclusion

The reproductive outcome of patients with endometriosis in this study is generally poorer than what is reported in the literature with an overall pregnancy rate of 24.3% and a spontaneous pregnancy rate of 11.2%. Several causes can be noted for such an outcome, most of these patients have severe disease, and don't have an access to advanced fertility treatment. Also, a significant number of these women with endometriosis (43.8%) have co-existing gynecologic morbidity that is likely to play a role in impairing fertility. Surgery did not improve the reproductive outcome is likely because of the disease severity and because surgery was performed by surgeons with significantly variable level of skills in managing endometriosis.

## Main Reference

C. M. Becker *et al.*, "Endometriosis: European Society of Human Reproduction and Emberyology," *Hum. Reprod. Open*, no. 2, p. hoac009, Jan. 2022.