
ISFP – Newsletter

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Cryopreservation of oocytes in women with endometriosis

Oocyte vitrification for fertility preservation in women with endometriosis: an observational study.

Cobo et al., Fertil Steril 2020;113(4):836-844

Background

Fertility preservation is typically offered to women with malignancies undergoing gonadotoxic treatment. However, patients with endometriosis and especially those with an endometrioma are at risk for premature ovarian insufficiency. There is evidence to suggest that there is an intrinsic decrease in ovarian reserve by the presence of an endometrioma, with bilateral endometriomas having the most significant decrease. This is attributed to the chronic inflammatory nature of endometriosis.

Surgical intervention is associated with a significant drop in ovarian reserve. This decrease in ovarian reserve is attributed to the actual surgical technique of cystectomy. Endometriomas have a dense fibrous interface with the ovarian cortex. Excising the cyst will at times remove normal ovarian tissue. Ablative techniques without excision are associated with less effect on ovarian reserve but may be associated with a higher recurrence rate. The larger the cyst the higher the rate of recurrence with ablation. Other risk factors for decreased ovarian reserve are bilateral disease and repeat surgery.

Since the evidence for decreased ovarian reserve is compelling with surgical intervention, fertility preservation counseling should be undertaken. Oocyte vitrification is the most commonly used modality for fertility preservation in this group of patients. Since there is no urgency to proceed to intervention as we would see in patients with some newly diagnosed cancers ovarian, tissue cryopreservation is not as commonly used. Data on the success of elective oocyte freezing will help counseling.

Summary of paper content

In this observational report by Cobo and colleagues 1044 women with a history of endometriosis had their oocytes vitrified. The patients mean age at vitrification was 35.7 ± 3.7 years. The majority of patients had advanced disease and 47% of patients had ovarian surgery for an endometrioma before oocyte vitrification. Forty-six per cent of patients (N=485) returned to thaw and use their oocytes. A total of 218 patients failed to become pregnant after using all their vitrified oocytes. Among them 58 patients of a mean age of 36 years returned for a fresh IVF cycle. In this group, the clinical and ongoing pregnancy rates were 51% and 38%, respectively.

In the 260 patients under 35 years of age, a mean of 10.7 ± 7.9 oocytes per patient were preserved. In the 225 patients over 35 years of age, a mean of 8.0 ± 4.9 oocytes per patient were preserved. The clinical pregnancy rate, the ongoing pregnancy rate and cumulative live birth rate (CLBR/patient) was significantly different between the two groups. The CLBR/patient was 61.9% in patients under 35 years of age and 28.4% in patients over 35 years of age.



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In women under 35 years of age, surgical excision of an endometrioma before oocyte cryopreservation decreased CLBR/patient: 72.5% in women that had no surgery versus 52.8% in women that had surgery. In women over 35 years of age, the CLBR/patient was 27.8% in women who did not have surgery versus 29.3% in women that had ovarian surgery.

Critical Evaluation of the Paper

This paper has the largest published experience on oocyte vitrification in women with endometriosis. There are several observations:

1. The high return rate of patients to use their oocytes is not observed in patients with elective fertility preservation programs, where the rate is between 12%-18%. The rate is much lower in onco-fertility patients. One explanation is that these patients had planned for a pregnancy in the immediate future and cryopreserved before surgery. This is not typical of an elective population.
2. Surgical intervention in women under 35 years of age before oocyte cryopreservation dramatically decreases CLBR/patient.
3. In women over 35 years of age CLBR/patient is not affected by surgery. In other words, age masks the effect of surgery.
4. The number of oocytes obtained from women that had previous surgery for an endometrioma is less than those without previous surgery.

Conclusion

Surgery for an endometrioma has a major effect on ovarian reserve and therefore fertility preservation counseling should be offered on all patients prior to surgery. If they are at high risk for reduced ovarian reserve such as in patients with bilateral endometriomas, repeat surgery on the same ovary or contralateral side or reduced AMH then proceeding to ART before surgery is highly suggested. ART can be for the purposes of oocyte or embryo cryopreservation for immediate pregnancy, if socially desired or future pregnancy. In patients proceeding to oocyte cryopreservation, the number of oocytes required to obtain a pregnancy should be discussed.

References

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*Please note: The newsletter reflects the opinion of the author and not of the ISFP.