

Mauro Cozzolino^{a,b}, Massaro Maria Giulia^a, Pietro Molinaro^a, Livia Pellegrini^a, Daniela Galliano^a, Annalisa Parisi^a, Antonio Pellicer^a

^aIVIRMA Global Research Alliance, IVI Roma, Rome, Italy.

^bIVIRMA Global Research Alliance, IVI Foundation - Instituto de Investigación Sanitaria La Fe (IIS La Fe), Valencia, Spain

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INTRODUCTION

Adenomyosis is driven by estrogen excess due to high tissue aromatase activity which leads in affected women to chronic inflammation, progesterone resistance and impaired fertility. Adenomyosis reduced the live birth rates and increased miscarriage rates especially in assisted reproductive technology (ART) cycles. GnRHa downregulation may help improve uterine receptivity by reducing inflammation, decreasing myometrial contractility and by lowering estrogen levels which are known to impair implantation in patients with adenomyosis. Small case series have explored IVF outcomes using a GnRH agonist/Aromatase Inhibitor for patients with adenomyosis.

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RESULTS

Result 1

There were no significant differences in mean age, BMI, donor age, sperm characteristics, number of embryos transferred, endometrial thickness and days of endometrial preparation before FET between aGnRH/AI cycles and other cycles. No statistical differences were found in the day of embryo transfer or embryo morphology/quality. Women with adenomyosis receiving PT-FET had higher ongoing pregnancy rate (47.06%, 95% CI 29.78-64.87) than those in the no-PT-FET (25.96%, 95% CI 17.86-35.48), $p=0.03$. The pregnancy rate was also higher in PT-FET (73.17%, 95% CI 57.06-85.78) compared to no-PT-FET (43.27%, 95% CI 33.59-53.35), $p=0.002$. The PT-FET had a higher clinical pregnancy rate (65.85%, 95% CI 49.41-79.92) than no-PT-FET (32.69%, 95% CI 23.81-42.59), $p<0.001$. The miscarriage rate was lower in the PT-FET without reaching statistical significance (27.27%, 95% CI 10.73-50.22) versus no-PT-FET (37.78%, 95% CI 23.77-53.46), $p=0.56$.

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PURPOSE & OBJECTIVES

Does pretreatment with GnRHa plus aromatase inhibitor improve the ongoing pregnancy rate in women with severe adenomyosis? Secondary outcomes were clinical pregnancy and miscarriage rates.

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MATERIAL & METHOD

Retrospective single-center study at IVI Roma involving patients with adenomyosis who underwent and didn't undergo a pretreatment protocol to compare frozen embryo transfer (FET) success. A total of 147 blastocyst-stage single embryo transfers (SETs) were analyzed: 105 SETs in the non-pretreatment FET (no-PT-FET) group (which included hormonal or natural cycles) and 42 SETs in the pretreatment FET (PT-FET) group. Women aged 30-49 who underwent blastocyst SET were included in the study. Adenomyosis was diagnosed according to the MUSA criteria with at least one direct sign of the disease. The pretreatment protocol consisted of GnRHa 3.75 mg for two months and AI (5 mg) for 21 days. FETs with natural or artificial cycles were included in the control group. Statistical analyses included chi-square and Student's t-tests for group comparisons. Logistic regression adjusting for confounders was used for LBR.

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CONCLUSION

The pretreatment with GnRH agonist (GnRHa) plus aromatase inhibitor (AI) may increase the ongoing pregnancy rate in patients with adenomyosis undergoing FET offering a new strategy. The pretreatment with GnRHa/AI decreased the hyperestrogenism improving the LBR in women with adenomyosis. Further research should explore the molecular mechanisms of uterine factor infertility related to estrogen suppression in adenomyosis to improve outcomes. The AI may increase the integrin expression in the endometrium improving endometrial receptivity.