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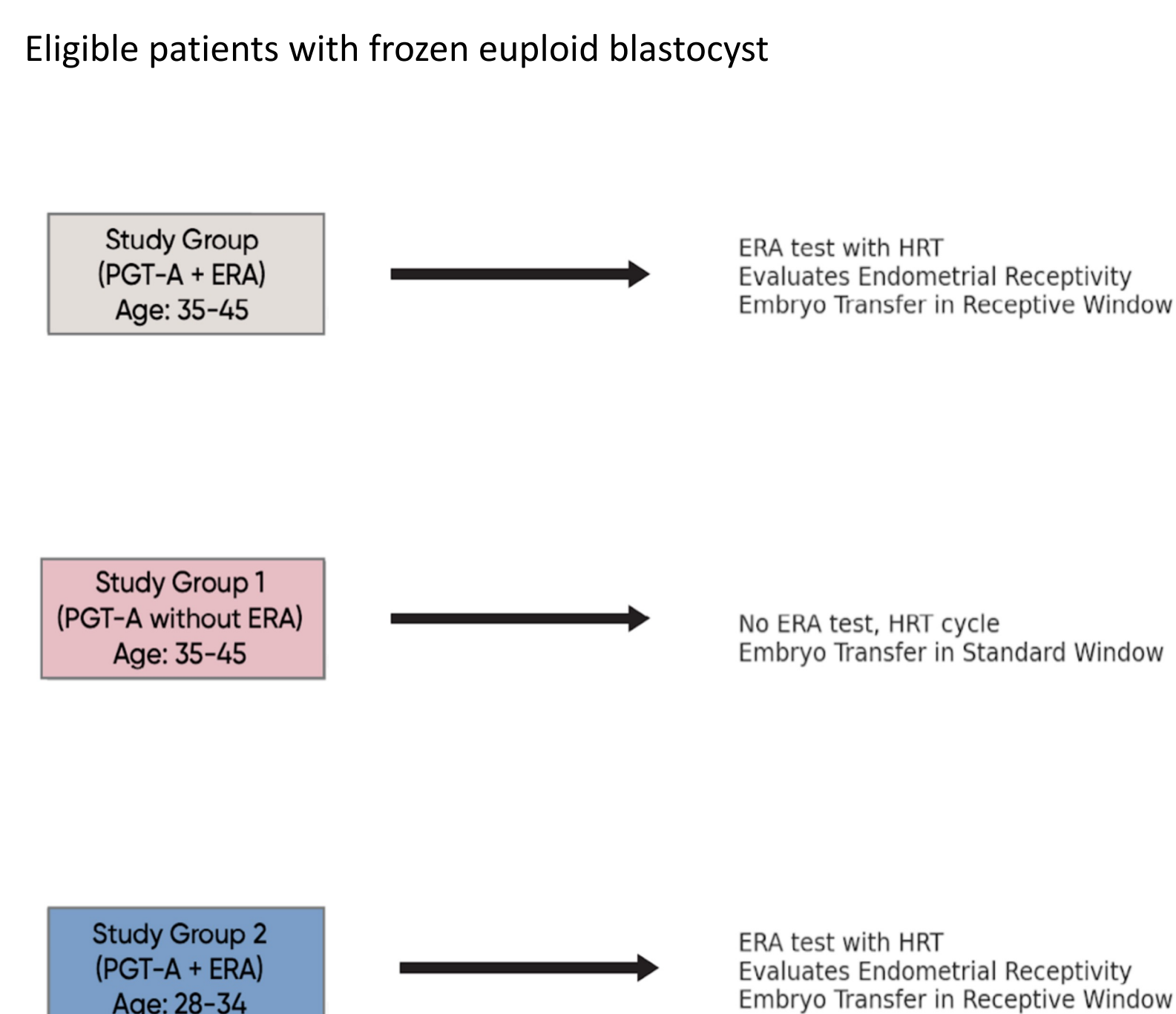
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INTRODUCTION

Contemporary socially active women defer their fertility to a later stage in life. Reproductive outcomes in advanced-age patients, even with egg donation, are typically suboptimal due to endometrial aging. Recurrent implantation failure (RIF) poses a significant challenge for assisted reproductive technology (ART) in older adults. Favorable results require high-quality, euploid embryos and synchronization between the embryo and endometrial lining. The implementation of personalized embryo transfer (pET) based on endometrial receptivity analysis (ERA) in older patients with complex reproductive histories and recurrent implantation failure (RIF), utilizing donor oocytes and preimplantation genetic testing for aneuploidy (PGT-A), aims to enhance assisted reproductive technology (ART) outcomes.

MATERIALS & METHODS

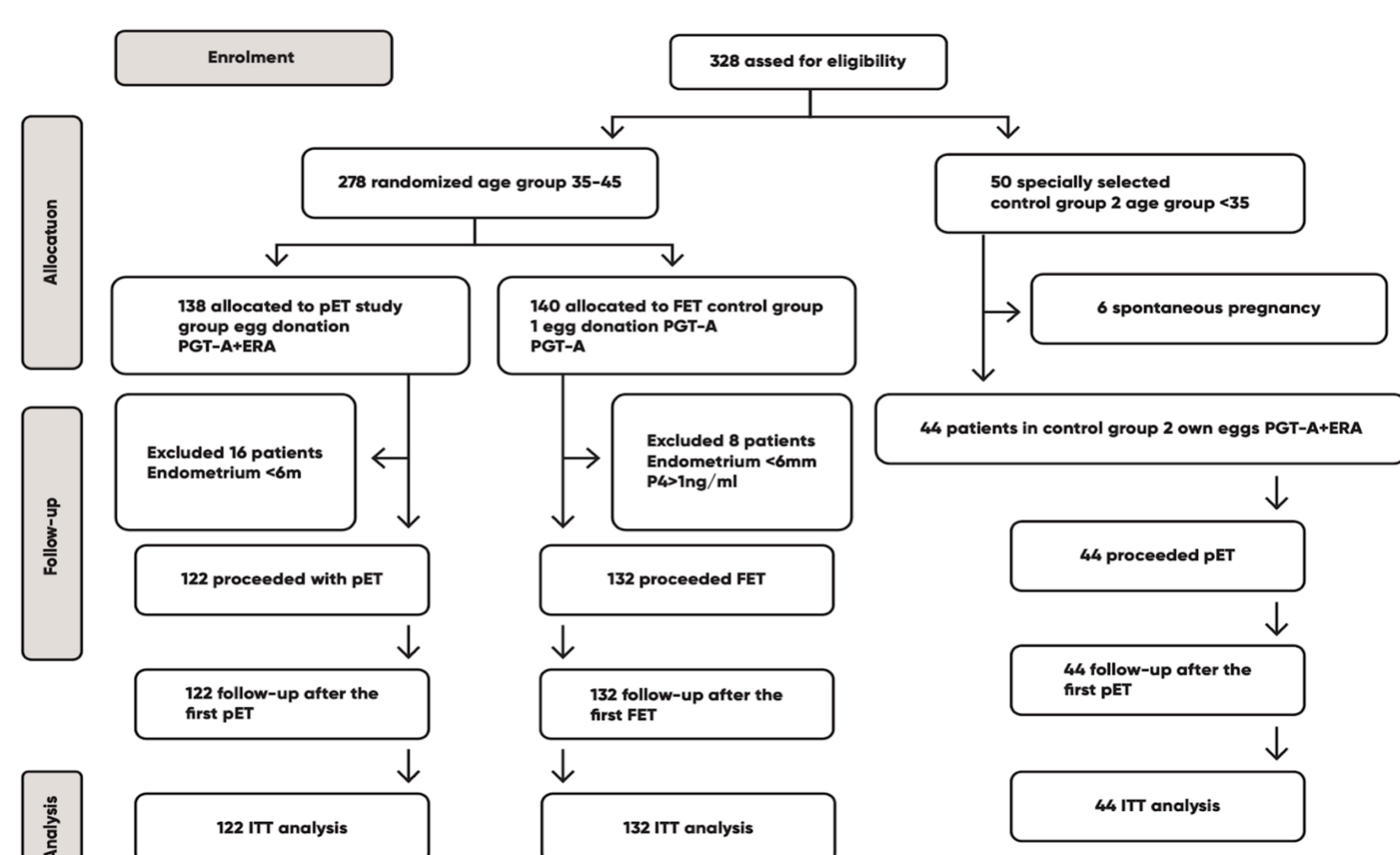
A 2020–2023 randomized, controlled observational follow-up research was conducted. Following informed consent, 320 RIF patients were selected. Patients were allocated to the study group and control group 1 using consistent randomization, while control group 2 was chosen independently. The study comprised patients aged 35 to 45 years undergoing PGT-A and ERA, with a mean age of 40.5±3.7 years. Participants in control group 1 were aged 35 to 45 years and had PGT-A, with a mean age of 40±4.2 years. Control group 2 comprised patients under 35 years of age who underwent PGT-A and ERA, with a mean age of 31.6±2.2 years.



RESULTS

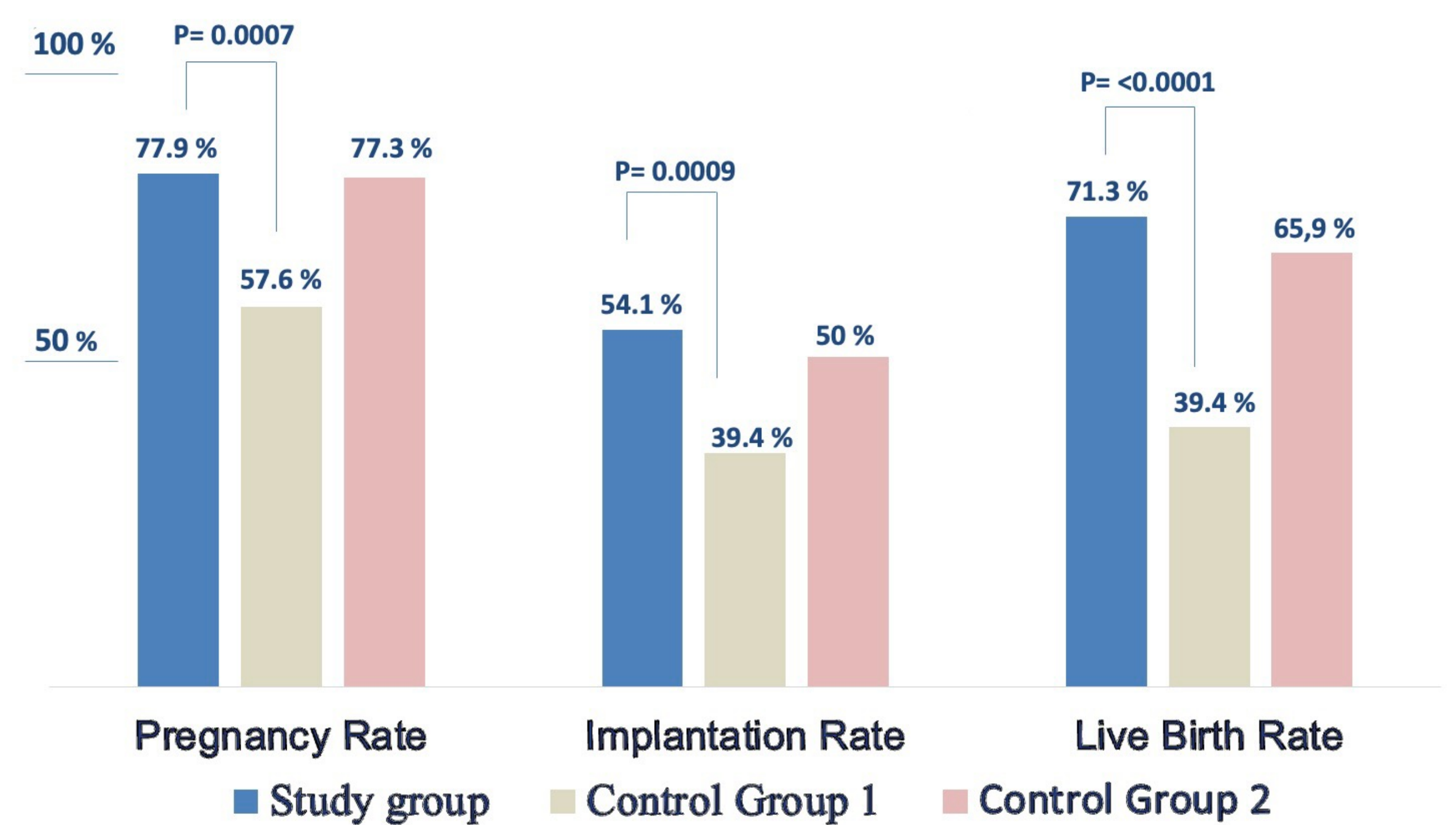
Results: ERA may improve implantation and pregnancy outcomes in advanced-age individuals, especially RIF patients. The study group had a greater pregnancy rate (77.9%) than control group 1 (57.6%) (p=0.0007) and no difference from control group 2 (77.3%) (p=0.94). The study group had a higher implantation rate (54.1%) compared to control group 1 (39.4%) (p=0.0009), but there was no significant difference between the study group and control group 2 (50%, p=0.87). The study group had a higher live birth rate (71.3%) compared to control group 1 (39.4%) (p<0.0001). The study group and control group 2 were similar (65.9%, p=0.50).

CONSORT flow diagram



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Compare: Implantation Rate, Pregnancy Rate, Live Birth Rate



CONCLUSION

ERA-guided pET improves pregnancy, implantation, and live birth rates in advanced-age individuals with challenging reproductive histories. ERA-guided pET yields comparable ART outcomes for both advanced-age and younger patients. Impact statement: Endometrial receptivity analysis-guided pET enhances implantation, pregnancy, and live-birth rates in older patients with recurrent implantation failure, achieving levels comparable to younger groups. These data illustrate the therapeutic imperative of endometrial-embryo synchronization for the efficacy of assisted reproductive technologies.

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