

RANDOMIZED CONTROLLED STUDY ON THE EFFECT OF A DIETARY INTERVENTION IN AMELIORATING FERTILITY PARAMETERS IN WOMEN WITH ENDOMETRIOSIS UNDERGOING IVF: THE DANTE STUDY PROTOCOL

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BACKGROUND

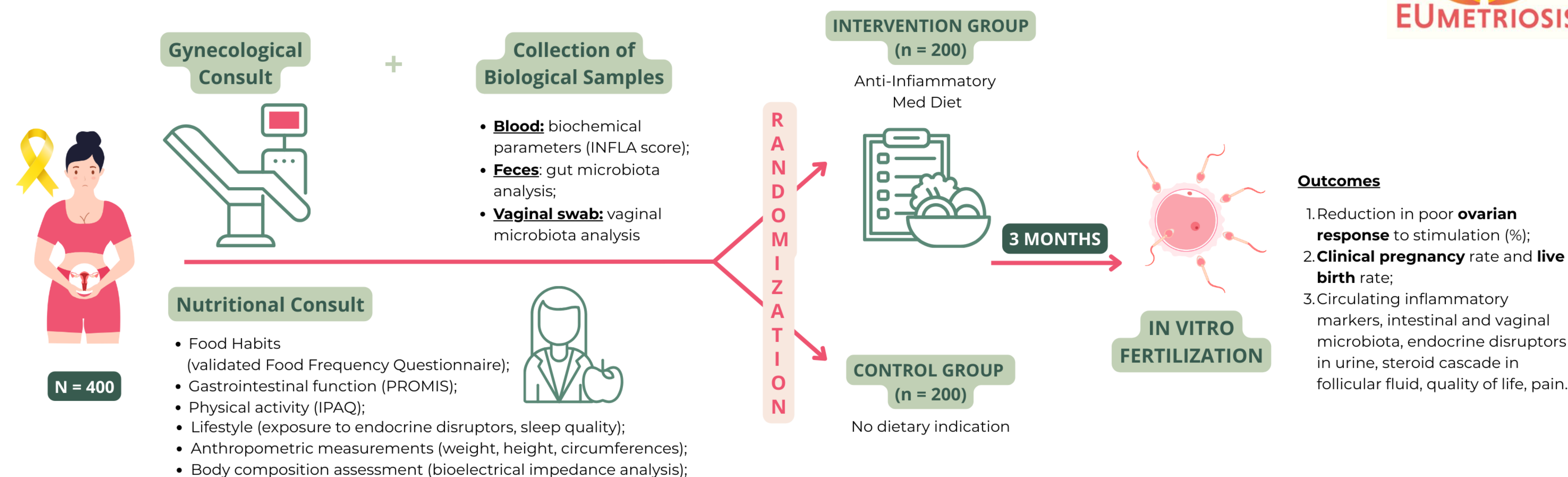
Endometriosis is a chronic inflammatory disorder commonly associated with pelvic pain, dyspareunia, dysmenorrhea, and infertility. In the absence of a definitive cure, many individuals turn to self-management approaches, including dietary changes, to mitigate symptoms and enhance fertility outcomes. While interest in nutrition as a complementary strategy is growing, there are currently no evidence-based dietary guidelines specific to endometriosis. Emerging biological data suggest that nutritional interventions targeting inflammation and oxidative stress may offer therapeutic benefits. Higher consumption of red meat, saturated fats, and trans fats may be associated with an increased risk of endometriosis. Only limited intervention studies are available and include supplementation and effects on clinical symptoms. Nonetheless, these findings are constrained by methodological limitations, such as small sample sizes, retrospective study designs and heterogeneity of interventions.

OBJECTIVES

The DANTE study aims to evaluate the effectiveness of an anti-inflammatory dietary intervention on in vitro fertilization (IVF) outcomes in women with endometriosis, as part of the Horizon Europe project "EUmetriosis: Transforming endometriosis care in Europe: an integrated approach to enhance understanding, diagnosis, tailored management and patient empowerment".

MATERIALS AND METHODS

We are conducting an RCT involving 400 women with endometriosis diagnosed via laparoscopy or ultrasound. Clinical evaluations at baseline and outcomes are presented in the Figure. Dietary plans will be personalized based on energy needs, gastrointestinal symptoms, body composition, and food preferences. General anti-inflammatory indications include daily use of olive oil, ≥2 fruit portions/day, ≥2 vegetable portions/day, ≥2 fish portions a week, especially omega-3 rich variants, ≤2 portions of red meat a month, organic food supply, use of anti-inflammatory spices as ginger and garlic. Indications to avoid ultra-processed foods, processed meat, sugar-sweetened and alcoholic beverages are provided. Adherence will be monitored through food diaries and 24-hour dietary recalls.



THE EUMETRIOSIS PROJECT: TRANSFORMING ENDOMETRIOSIS CARE

"EUmetriosis" is the project funded by the European Union aimed at addressing the major gaps in endometriosis management, with the goal of achieving significant progress in clinical care for affected individuals. It seeks to improve the diagnosis, treatment, and overall management of endometriosis through an integrated, patient-centered approach. By combining research in epigenetics, microbiome, immunology, and metabolomics, the EUmetriosis project aims to develop personalized, minimally invasive, and evidence-based diagnostic and therapeutic strategies. The active involvement of patient associations enables the project to place the real needs of women with endometriosis at the core of the care pathway, fostering greater awareness, participation, and effectiveness of interventions.

EXPECTED RESULTS AND CONCLUSION

The study has already received approval from the Territorial Ethics Committee Lombardia 3, and participant recruitment began in March 2025. The study was registered in ClinicalTrials.gov (NCT06885125). The study will compare ovarian response, embryological parameters, reproductive outcomes, and inflammatory markers between intervention and control groups. It is hypothesized that the dietary intervention group will demonstrate improved ovarian response, higher pregnancy and live birth rates, and reduced systemic inflammation. If confirmed, these findings could offer high-quality evidence supporting anti-inflammatory nutrition as a complementary strategy in the management of endometriosis-related infertility.