

Section: MONOGRAPH

Abstract: MON-07

***In vitro* fertilization and the economic impacts on women with diminished ovarian reserve**

Camilla Farias, Heloisa Beloto, Marina Teixeira, Roberta Saraiva, Paola Biazzi, Estela Bettini, Julia Jaruche, José Roberto Lambert, Luciano de Melo Pompei
Centro Universitário FMABC, Santo André, Brazil

cabitencourt@gmail.com

INTRODUCTION: Infertility affects 17.5% of the world's adult population, and diminished ovarian reserve (DOR) represents one of the greatest challenges in *in vitro* fertilization (IVF). Defined according to the Bologna criteria, POSEIDON classification, or laboratory markers (AMH, AFC, FSH), DOR is associated with reduced follicular quantity and quality, negatively impacting success rates and increasing treatment costs. Beyond its clinical limitations, women with DOR face significant economic barriers that are often underestimated in reproductive medicine. **METHODS:** A literature review was conducted based on the PICO strategy and registered under PROSPERO number 1295939. The population: women aged ≥ 18 years with DOR undergoing IVF/ICSI. Interventions: different ovarian stimulation protocols. Comparators: women with normal ovarian reserve or pre- and post-treatment evaluations. Outcomes: assessed were socioeconomic impacts, including direct costs, indirect costs, and financial toxicity. Cohort studies published between 2005 and 2025 in English, Portuguese, or Spanish were included. Case reports, reviews, and studies without a clear definition of DOR were excluded. Searches were performed in PubMed and the Cochrane Library. Nine articles were identified, and three met all inclusion criteria. **RESULTS:** Busnelli et al. (2015) reported a live birth rate of only 6% per cycle and a cost per QALY above accepted cost-effectiveness thresholds, highlighting substantial financial toxicity. Liu et al. (2021) demonstrated that the GnRH antagonist protocol, although more expensive in the first cycle, resulted in a shorter time to live birth and a cumulative cost comparable to that of multiple minimal stimulation cycles. Zhu et al. (2024) showed that even among women aged ≤ 35 years, DOR reduced blastocyst formation, clinical pregnancy, and live birth rates, without increasing perinatal risks. **CONCLUSION:** DOR significantly compromises the effectiveness and cost-effectiveness of IVF, increasing the risk of financial toxicity. Individualized treatment protocols, particularly GnRH antagonist regimens, may optimize both treatment duration and costs. Important gaps remain regarding psychosocial impacts, underscoring the need for multidimensional and patient-centered approaches that consider not only clinical outcomes but also patients' quality of life.

KEYWORDS: Diminished ovarian reserve; *In vitro* fertilization; Cost-effectiveness.