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INTRODUCTION, OBJECTIVE, METHODS

Introduction: 'Unfavorable patients' (higher age, poor egg quality, multiple unsuccessful ART treatments, etc.) remain challenging.

Objective: To evaluate whether whole system treatment (SART) improves observed cumulative live birth rates (CLBR) in a cohort of predominantly unfavorable patients.

Methods: Analysis of database registry: all patients (n=212), who started SART because of infertility between January 2014 and December 2016, with a follow-up until May 2020.

Intervention: Integrative biopsychosocial approach with SART (psychotherapy with somatosensory stimulation (acupuncture, moxibustion), herbs, nutritional supplements) in order to release prior adverse life events and increase well-being; combined with ART (as needed).

Data collection: prospectively documented: diagnosis, history of infertility, prior ART treatments, mode of conception, and pregnancy outcome were retrieved via telephone interviews.

RESULTS

212 patients with mostly unfavorable prognosis

- high age at study entrance (36.4 ± 4.4 (SD) years)
- long average duration of infertility (4.1 ± 2.6 years)
- 65% of patients (127/212) with prior unsuccessful ART treatment, median number of trials 4 (IQR, 2-7)

CLBR: 71.7% (152/212) for the total cohort (81% pregnancies);

- CLBR by age group:
 - 79% (82/104) for patients ≤ 36 years
 - 62% (31/50) for patients 37-39 years
 - 67.2% (39/52) for patients ≥ 40 years
- CLBR according to disease: see Fig. 1

Methods of conception: see Fig. 2

Deliveries: 11 preterm deliveries (7.2%), 6 twins (3.9%)

Median duration of SART: 8 months (IQR, 3 to 20) with a median of 8 sessions (IQR, 4 to 15).

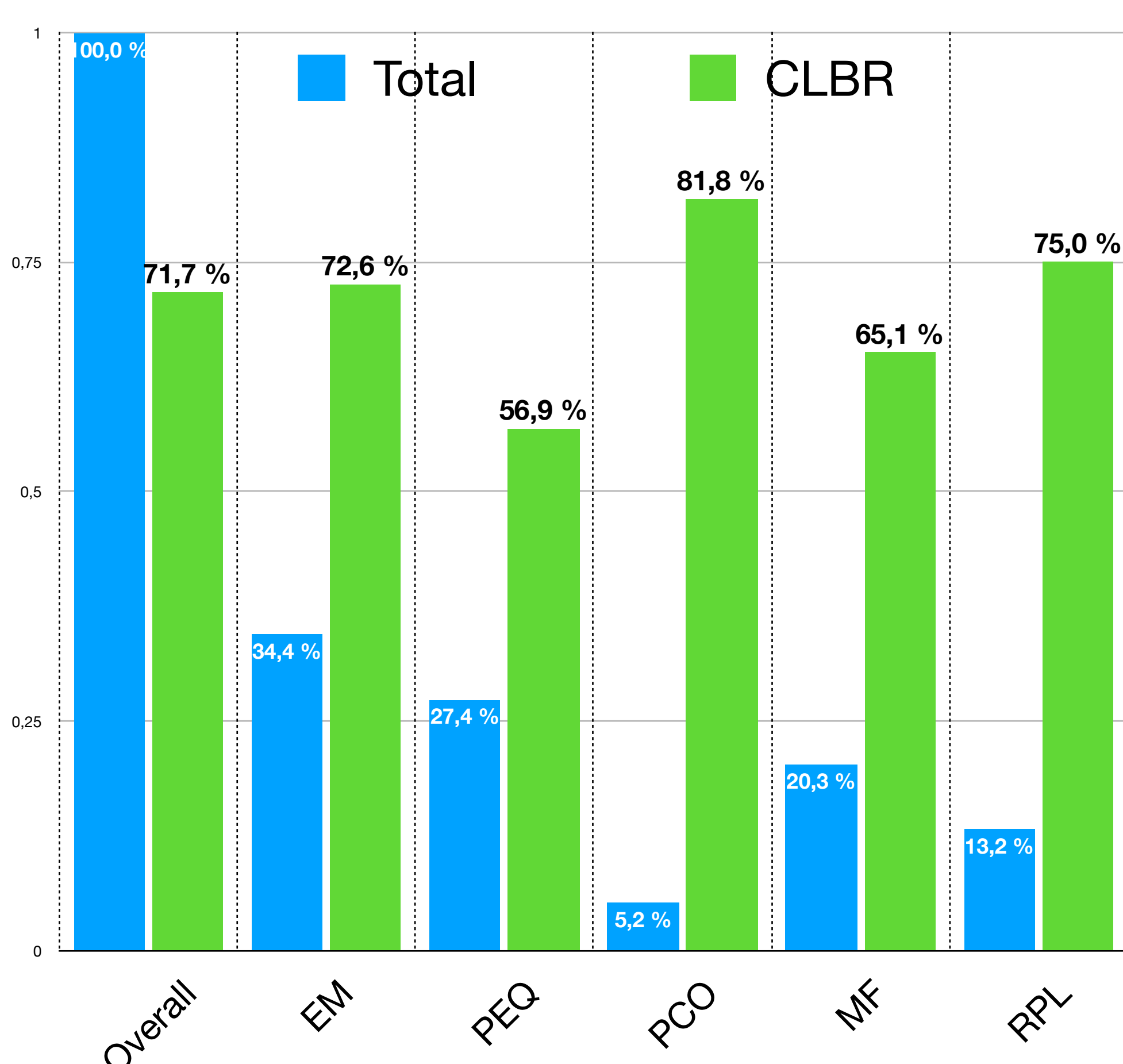
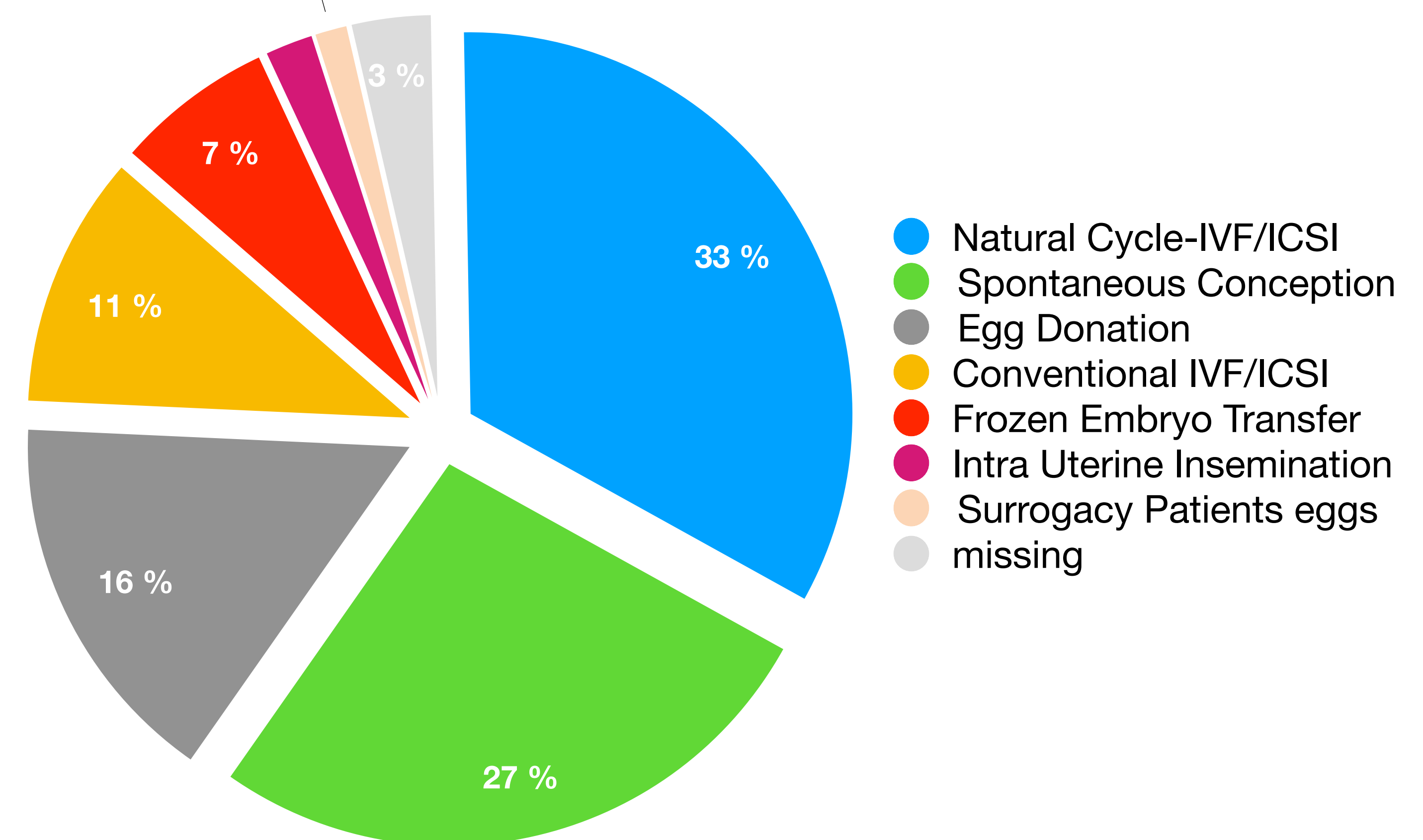


Fig. 1: CLBR according to disease (multiple answers possible)

Abbreviations: EM, Endometriosis; PEQ, Poor Egg Quality; PCO, Polycystic Ovary Syndrome; MF, Male Factor; RPL, Recurrent Pregnancy Loss

Fig. 2: Methods of conception



CONCLUSION

The SART treatment approach was associated with high observed CLBR in a cohort of mostly 'unfavorable patients'.

By extending the „effort to discern the underlying, unknown factors in each patient" (1) to the whole female personality and her individual history, whole system therapies like SART appear to successfully diminish factors that impede pregnancy. The hippocampus as a hub for stress response (2) is proposed as a gateway in the search for the unknown factors influencing IVF outcomes. Effects of SART on functional connectivity of the hippocampus have already been demonstrated by functional magnetic resonance imaging (fMRI) in our previous randomized-controlled trial on endometriosis (3,4).

In the light of recent publications about the impact of adverse childhood experiences on inflammation, neurobiological processes, and pregnancy outcome (5-7), statements like „live-birth rates approaching natural fecundity can be achieved by means of assisted reproductive technology when there are favorable patient and embryo characteristics" (8) appear tantamount to victim-blaming of unfavorable patients. Our data show that patients labeled unfavorable have a good chance for parenthood when offered integrative whole system treatment combined with ART.

REFERENCES

1. Koot YEM, Hviid Saxtorph M, Goddijn M, de Bever S, Eijkemans MJC, Wely MV, et al. What is the prognosis for a live birth after unexplained recurrent implantation failure following IVF/ICSI? *Hum Reprod.* 2019;34(10):2044-52.
2. McEwen BS, Nasca C, Gray JD. Stress Effects on Neuronal Structure: Hippocampus, Amygdala, and Prefrontal Cortex. *Neuropsychopharmacology.* 2016;41(1):3-23.
3. Beissner F, Preibisch C, Schweizer-Arau A, Popovici RM, Meissner K. Psychotherapy With Somatosensory Stimulation for Endometriosis-Associated Pain: The Role of the Anterior Hippocampus. *Biol Psychiatry.* 2018;84(10):734-42.
4. Meissner K, Schweizer-Arau A, Limmer A, Preibisch C, Popovici RM, Lange I, et al. Psychotherapy With Somatosensory Stimulation for Endometriosis-Associated Pain: A Randomized Controlled Trial. *Obstet Gynecol.* 2016;128(5):1134-42.
5. Baumeister D, Akhtar R, Ciufofolini S, Pariante CM, Mondelli V. Childhood trauma and adulthood inflammation: a meta-analysis of peripheral C-reactive protein, interleukin-6 and tumour necrosis factor-alpha. *Mol Psychiatry.* 2016;21(5):642-9.
6. Teicher MH, Andersen SL, Polcari A, Anderson CM, Navalta CP, Kim DM. The neurobiological consequences of early stress and childhood maltreatment. *Neurosci Biobehav Rev.* 2003;27(1-2):33-44.
7. Demakakos P, Linara-Demakakou E, Mishra GD. Adverse childhood experiences are associated with increased risk of miscarriage in a national population-based cohort study in England. *Hum Reprod.* 2020.
8. Luke B, Brown MB, Wantman E, Lederman A, Gibbons W, Schattman GL, et al. Cumulative birth rates with linked assisted reproductive technology cycles. *N Engl J Med.* 2012;366(26):2483-91.

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