DOES STRESS AFFECT IVF OUTCOMES? A PROSPECTIVE STUDY ASSESSING CORTISOL LEVELS AND STRESS QUESTIONNAIRES FOR WOMEN UNDERGOING THROUGH IVF TREATMENTS

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Objective: Fertility treatments are known to be related to emotional stress. Yet, it remains unclear whether stress has an effect on in vitro fertilization (IVF) cycle outcomes. The aim of this study was to evaluate the effect physiological and emotional stress on fertility outcomes for women going through IVF treatments. Methods: A prospective cohort of 73 women undergoing IVF treatment was conducted. Physiological stress evaluation included saliva cortisol measurements and emotional stress included stress questionnaires (HADS Hospital Anxiety and Depression Scale, 1-10 Stress scale). These were measured at 3 time points: 1. prior to IVF treatment starting, 2. At day of oocyte pick up (OPU) 3. At day of embryo transfer (ET). In addition, cortisol level in the follicle was also measured on the day of OPU. Association between stress levels (cortisol and questionnaires) and fertility outcomes, including: number of retrieved oocyte, number of embryos, embryo quality, fertilization rate and pregnancy rate were measured. Results: Salivary cortisol levels were the highest on day of OPU compared to cortisol level prior to treatment and to the level at ET day (See Fig 1,2). Emotional stress level measured by HADS prior to IVF treatment, was associated with lower maximal estrogen level (p=0.034) and lower number of fertilized oocytes (p=0.032). Salivary cortisol was not related to fertilization rate, embryos quality and clinical pregnancy rate. However, follicle cortisol level was negatively correlated with number of eggs retrieved (p=0.018) and lower endometrium thickness (p=0.05). Conclusion: Though emotional and physiological increase during IVF treatment are highest on day of OPU, this elevation was not associated with pregnancy rate. These findings might reassure women who are afraid that their stress level will affect their IVF outcomes.