GONADOTROPIN-RELEASING HORMONE (GNRH) AGONIST VERSUS GNRH ANTAGONIST PROTOCOL – DIFFERENTIAL EFFECTS ON FROZEN-THAWED EMBRYO TRANSFERS.

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Abstract Body

Both GnRH-agonist and GnRH-antagonist protocols are used in combination with "freeze-all" strategy to prevent ovarian hyperstimulation syndrome (OHSS) in women at risk and make the frozen-thawed embryo transfers an important tool of present days IVF/ICSI treatment. The aim of the study was to compare the outcome of frozen-thawed embryo transfers after GnRH-agonist vs GnRH-antagonist protocols of previous fresh cycles.

In the present prospective cohort study were included 113 women (25-42 years old), undergoing controlled ovarian stimulation and allocated to a GnRH-agonist (37) vs GnRH-antagonist protocol (76), with embryo cryopreservation, regardless fresh embryo transfer, between 01/2016-12/2016. Embryos were graded according to the established criteria and vitrified on day 2, 3 or 5. All women had one-three frozen–thawed embryo transfers (FETs) in hormonal artificial cycles.

There were no significant differences between the two groups with respect to: age, day of embryotransfer and embryo quality ($p>0.05$). The proportion of chemical pregnancies after the first FET was 45.9% in the GnRH-agonist group and 44.7% in the GnRH-antagonist group ($p=0.904$). Similarly, the proportion of chemical pregnancies after all FETs was not significantly different between the two study groups (54.1% vs. 51.3%, $p=0.784$). 27.0% of the women in the GnRH-agonist group had a clinical pregnancy after the first FET and the correspondence proportion was 36.8% in the GnRH-antagonist group ($p=0.300$). Concerning all FETs, the rate of clinical pregnancy was 35.1% in the GnRH-agonist group and 42.1% in the GnRH-antagonist group ($p=0.542$). The comparison between the two study groups provided similar results when subgroup analysis according to the quality of the embryo was conducted. Subgroup analysis for women aged more than 35 and women less than 35 revealed that the clinical pregnancy rate after all FETs was significantly greater in the GnRH-antagonist group (51.7%) as compared with the GnRH-agonist (22.2%) group ($p=0.046$) only in women aged 35 or less.

Concluding, we found similar pregnancy rates after FETs given the improvement of embryo freezing-thawing methods. However, women less than 35 years old, may benefit from the GnRH-antagonist protocol, which is as effective as the GnRH-agonist protocol, with lower OHSS risk and higher clinical pregnancy rates after FETs.