19: VARIANT OF FSHB GENE AFFECT HUMAN REPRODUCTION OUTCOMES

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Objective
FSH is essential on the hypothalamic-pituitary-gonadal axis exerting a key play in human reproduction. The β-subunit, encoded by FSHβ gene, is responsible to ensure the binding specificity to FSHR. A promoter polymorphism in this gene, c.-211G/T (rs10835638), is associated to decreased gene transcription in gonadotroph cells. We aimed to investigate the possible effects of FSHβ c.-211G/T polymorphism on hormonal profile and in vitro Fertilization (IVF) outcomes in normoovulatory infertile Brazilian women.

Design
Cross-sectional study.

Material and Methods
140 infertile women (32.4±3.5 years old) mainly caused by male or tuboperitoneal factors underwent IVF treatment were studied. FSH, estradiol, LH, progesterone, prolactin and AMH levels, as well as antral follicle counting were evaluated on the 2nd-3rd day of menstrual cycle. Genotyping was performed using TaqMan methodology by real time PCR.

Results
The polymorphic allele T was found in 13.6% of women, only observed in heterozygose. The age, BMI, menarche, menstrual cycle interval, infertility duration and daily dose of rFSH to controlled ovarian hyperstimulation to IVF treatment were not different between women carrying GG or GT genotype. However, carriers of GT presented almost double of poor response to controlled ovarian hyperstimulation (47.4% versus 26.5%, p=0.010), higher LH levels (3.1 IU/mL vs. 2.4 IU/mL, p=0.0002) and lower antral follicle counting (8.0 vs. 10.0, p=0.03), oocytes retrieved (3.0 vs. 5.0, p=0.03), MII (3.0 vs. 4.0, p=0.02) and embryos (2.0 vs. 3.0, p=0.02). Despite this, no difference was observed in pregnancy rate.

Conclusions
The increased LH levels, despite being within the normal range, may have interfered in the follicular growth and oocyte maturation, and consequently IFV outcomes observed in women with GT genotype. FSHβ c.-211G/T polymorphism may alter some aspects of the female reproductive system and reproductive outcomes.

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