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JOURNAL ARTICLE

The effect of follicle-stimulating hormone therapy on sperm quality: an ultrastructural mathematical evaluation

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We investigated the effect of follicle-stimulating hormone (FSH) administration on the ultrastructure of spermatozoa in order to evaluate the potential of FSH therapy for improving sperm quality.

Forty-six patients exhibiting idiopathic oligoasthenoterato-zoospermia who attended the intrauterine insemination (IU), in vitro

fertilization (IVF), or intracytoplasmic sperm injection (ICSI) program at our clinic received FSH in daily dosages of 150 IU over a period of 12 weeks. Using transmission electron microscopy, the ultrastructural analysis of spermatozoa was performed prior to the start of FSH therapy, after the treatment had been finished, and 6 weeks posttherapy. Applying a mathematical formula based on submicroscopic characteristics, we calculated the number of morphologically normal spermatozoa. After the FSH treatment, the examined subcellular organelles achieved a higher percentage of integrity. Follicle-stimulating hormone treatment leads to a higher number of morphologically normal spermatozoa. The electron microscopic findings indicate that treatment with pure FSH may be an effective way to improve sperm quality in cases with oligoasthenoterato-zoospermia. Applying the mathematical analysis based on the whole complex of the selected sperm characteristics, we obtained a way to evaluate the success of therapy for the first time.

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