

Studies on Acupuncture and Sperm Health

Acupuncture proven to improve quality of sperm penetrating egg

Objective: To evaluate the ultramorphologic sperm features of idiopathic infertile men after acupuncture therapy.

Design: Prospective controlled study.

Setting: Christian-Lauritzen-Institut, Ulm, IVF center Munich, Germany, and Department of General Biology, University of Siena, **Siena, Italy**.

Patient(s): Forty men with idiopathic oligospermia, asthenospermia, or teratozoospermia.

Intervention(s): Twenty eight of the patients received acupuncture twice a week over a period of 5 weeks. The samples from the treatment group were randomized with semen samples from the 12 men in the untreated control group.

Main Outcome Measure(s): Quantitative analysis by transmission electron microscopy (TEM) was used to evaluate the samples, using the mathematical formula based on submicroscopic characteristics.

Result(s): Statistical evaluation of the TEM data showed a statistically significant increase after acupuncture in the percentage and number of sperm without ultrastructural defects in the total ejaculates. A statistically significant improvement was detected in acrosome position and shape, nuclear shape, axonemal pattern and shape, and accessory fibers of sperm organelles.

However, specific sperm pathologies in the form of apoptosis, immaturity, and necrosis showed no statistically significant changes between the control and treatment groups before and after treatment.

Conclusion(s):

The treatment of idiopathic male infertility could benefit from employing acupuncture. A general improvement of sperm quality, specifically in the ultrastructural integrity of spermatozoa, was seen after acupuncture, although we did not identify specific sperm pathologies that could be particularly sensitive to this therapy.

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A prospective randomized placebo-controlled study of the effect of acupuncture in infertile patients with severe oligoasthenozoospermia.

In this first prospective, randomized, single-blind, placebo-controlled study, 28 infertile patients with severe oligoasthenozoospermia received acupuncture according to the principles of traditional Chinese medicine (TCM) and 29 infertile patients received placebo acupuncture.

A significantly higher percentage of motile sperm (World Health Organization categories A-C), but no effect on sperm concentration, was found after acupuncture compared with placebo acupuncture.

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In the study, 28 men who were diagnosed with idiopathic infertility received acupuncture twice a week over a period of 5 weeks. The following acupuncture points were used as main points: Guan yuan (Ren 4), shen shu (UB 23, bilateral), ci liao (UB 32, bilateral), tai cong (Liv 3, bilateral), and tai xi (KI 3, bilateral). Secondary points included zhu san li (ST 36, bilateral), xue hai (SP 10, bilateral), san yin jiao (SP 6, bilateral), gui lai (ST 29, bilateral), and bai hui (Du 20). Needles were inserted to a depth of between 15 and 25 millimeters, depending on the region of the body being treated. Needles were manipulated for 10 minutes to achieve de qi, then left in place for another 25 minutes before being removed.

Semen samples were collected from each of the men after a 3-day period of sexual abstinence. Two samples were collected from each patient: one obtained the day before treatment began, the other after the last acupuncture treatment. Samples from the treatment group were then randomized with semen samples from 12 untreated control patients and analyzed.

Compared to the control group, motility levels increased significantly in semen samples in the men receiving acupuncture. While median motility levels increased from 32% to 37% in the control group, they increased from 44.5% to 50% in the acupuncture group.

The number and percentage of healthy sperm also increased dramatically in the acupuncture patients. At baseline, only 0.06% the sperm among men in the acupuncture group was considered "healthy," while the median number of healthy sperm calculated in

ejaculate was 0.04×10^6 (40,000). After 10 sessions of treatments, the median percentage of healthy sperm had increased more than four-fold, to 0.26%, while the median number of healthy sperm per sample had reached 0.2×10^6 (200,000).

In addition, significant changes in sperm structure and quality were seen in the samples from the acupuncture group. Before treatment, only 22.5% of the sperm samples in the acupuncture patients contained normal-shaped acrosomes, a cap-like structure that develops over the anterior portion of a sperm cell's nucleus. After treatment, the median percentage of normal acrosome shapes showed a "statistically significant improvement" to 38.5%.

Similarly, the percentage of sperm with a normal axoneme pattern increased significantly among men receiving acupuncture. (The axoneme is a microscopic structure that contains a series of tubules arranged in a distinct pattern, and is believed to aid in sperm motility.)

Prior to the start of the study, the correct axoneme pattern was present in 52% of sperm in the control group, but only 46.1% in the acupuncture group. After 5 weeks of therapy, the median percentage increased to 52.2% in acupuncture patients, but actually decreased to 38.2% in the control group.

While acupuncture appeared able to improve the overall quality and structural integrity of sperm, it was ineffective against some common sperm pathologies. Apoptosis levels (programmed cell death) in sperm samples were reduced slightly, but not to a statistically significant degree. Median percentages of necrosis (unprogrammed cell death) and sperm immaturity also decreased slightly in the acupuncture group, but not to a level considered statistically significant.

The authors concluded that despite the inability of acupuncture to significantly reduce some sperm abnormalities, the treatment could be used to improve overall sperm quality, leading to the possibility of increased fertility. "In conjunction with ART or even for reaching natural fertility potential, acupuncture treatment is a simple, noninvasive method that can improve sperm quality," the authors concluded. "Further research is needed to demonstrate what stages and times in spermatogenesis are affected by acupuncture, and how acupuncture causes the physiologic changes in spermatogenesis."

References

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