



Can We Benefit From Ozone to Improve Female Reproductive Health?

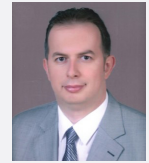
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Female fertility may be affected by vaginal, endometrial, tubal, or ovarian factors. Ozone therapy is emerging as a potential therapeutic adjunct to improve reproductive health of women. Ozone may achieve this by decreasing reactive oxygen species, interleukin 6 (IL-6) and tumor necrosis factor-alpha (TNF- α) while increasing glutathione peroxidase, superoxide dismutase and antibacterial activity with its antioxidant and anti-inflammatory effects (1). In the literature, most of the data on the potential role of ozone in female reproduction belongs to the veterinary medicine or experimental animal studies and very few of the researches has been conducted on humans.

On infertile women with inflammatory etiology, ozone therapy had a potential to improve fertility by treating genital inflammatory diseases (1). Preventive intrauterine application of ozone (especially in the foaming spray form) during the early puerperal period has been associated with better reproductive potential in dairy cows with a possible mechanism of diminished inflammation leading to a healthier endometrial environment (2). In a human study, ozone therapy has been suggested as a potential therapeutic agent for women with tubal infertility (3). It was shown to be beneficial in the treatment of pelvic inflammatory disease by alleviating the inflammatory reactions and inhibiting endometrial epithelial cell necrosis in female rats (4). Ozone was found to be very useful in the treatment of ischemia/reperfusion related injury in the ovarian tissue and therefore, it might offer an ovary-sparing approach to ovarian torsion (5). In an experimental rat model, postoperative uterine adhesions could be attenuated with altered oxidative state and modulated TNF- α levels by ozone therapy (6). The observations by De Simone et al showed that the oxygen-ozone therapy may be used as an adjuvant to in vitro fertilization (IVF) treatment (7).

As a result, ozone therapy might decrease vaginitis and pelvic adhesions, protect ovarian and endometrial tissues, and shorten time to conception, all of which may lead to

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improvement in female reproduction. Future prospective human studies are warranted to be performed to elucidate its potential role as an adjunct therapy on every aspect of human reproduction and especially for women with unexplained recurrent pregnancy loss, poor response to IVF, thin endometrial lining, and poor ovarian reserve.

Conflict of Interests

The author has no conflicts of interest to disclose.

Ethical Issues

Not applicable.

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