Letter to Editor

Testicular Sperm for Intracytoplasmic Sperm Injection in Oligozoospermic Men with High Sperm DNA Fragmentation, To Do or Not To Do

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Dear Editor,

Several etiological aspects have been suggested in the impairment of sperm DNA part, including lifestyle factors, accessory gland infections, and varicocele (1-4). Sperm DNA fragmentation (SDF) has emerged as an biomarker for assessing male fertility possibilities (5) and may be informative for Intra-Uterine Insemination, In Vitro Fertilization and intracytoplasmic sperm injection (ICSI) outcomes (6). Spermatozoa recoup from the testis of patient with abnormal ejaculated sperm DNA integrity are believed to have superior DNA character (5). In a study presented by Zini et al, among strategies proposed to get better SDF in couples undergoing ICSI, applying Testicular Sperm Extraction (TESE) in favor over ejaculated sperm has gained increased attention owing to reports of better ICSI outcomes (7).

After institutional review board approval was obtained, couples were subjected to history of idiopathic oligozoospermia (<15 million/mL), sperm morphology >4%, high SDF level in TUNEL test (>30%) in two semen analysis, and one or more unsuccessful ejaculated sperm ICSI rounds, candidate for TESE- ICSI. All interventions were done under local anesthesia on an outpatient set up. Successful retrieval was described as the existence of a sufficient amount of sperm for injections. Injections were done with fresh specimens. Managed ovarian stimulation was performed with recombinant Follicle Stimulating Hormone, starting on 2nd day after beginning of menstrual cycle, with doses ranging from 150 to 300 IU/day as stated by the case ovarian reserve. Recombinant Human Chorionic Gonadotropin (rec-hCG 250 mg; Ovidrel or Pregnyl 10000 IU; Merck Serono) was delivered subcutaneous for final oocyte maturation when at least two follicles gained the mean diameter of 17 mm. 36 hours after rec-hCG injection all cases were subjected to transvaginal ultrasound-guided oocyte pick-up. The fertilized oocytes were cultured, and embryo quality was evaluated. Abdominal ultrasound-guided embryo transferred (on 3rd day) after oocyte pick-up was done, and all cases started luteal phase assist by vaginal Progesterone administration (200 or 400 µg/ daily; Merck Serono).

Due to the conception and pregnancy failure in all of the first 18 couples and according to the Ethics Committee protocol, the investigation did not continue. Patient and clinical characteristics are presented in Table 1.

According to the report of previous investigations, testicular sperm appears favorable for ICSI in terms of lower DNA destruction, especially for couples with repeated Assisted Reproductive Technology failures (5, 8, 9). However, this potential benefit could be offset by the higher aneuploidy rates in testicular spermatozoa (10).

Table 1: Demographic and clinical characteristics of the couples with TESE-ICSI

Variable	Mean ± SD
Male age, year	37.8 ± 5.01
Female age, year	35.62 ± 5.38
Infertility duration, year	7.22 ± 4.58
BMI¶ of women	25.9 ± 3.56
Basal FSH levels, IU/L	6.59 ± 3.27
AMHß	1.94 ± 1.03
SDF	37.53 ± 4.09
Oocytes Retrieved, number	6.1 ± 3.3
Oocytes Metaphase II, number	4.37 ± 2.9
Embryos, number	1.68 ± 2.24
High quality Embryos on day 3 (%)	23.2 ± 18.01
Implantation, number	1.02 ± 2.79

Clinicians should balance these risks; like as intratesticular hemorrhage and reduction in testosterone production prior to the recommendation of TESE-ICSI on the result of a semen analysis or sperm DNA test (7). According to our result and Meta analyses conducted in this issue, it is proposed to perform TESE-ICSI in selected normospermia cases.

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2. Conflict of interest:

All authors declare that there is no conflict of interest in this study.

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4. Author's contributions:

All authors have the same contribution.

5. Reference

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