

Effects of sperm morphology on pregnancy rate in IUI cycles

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Abstract

Introduction: One of the causes of infertility is due to male factors (Sperm count, sperm motility and morphology). Male factor infertility may be due to disorders in the number of spermatozoa, sperm motility or sperm morphology. Intrauterine insemination (IUI) is routinely used to help couples with male factor infertility. The criteria used to evaluate semen quality include sperm concentration, sperm motility and the percentage of sperm with normal morphology. Several studies have been done on motility and sperm concentration but few studies have been done on sperm morphology. In this study, we evaluated IUI success rates in normal sperm morphologies that were greater or fewer than 5% in the Northern part of Iran (Mazandaran).

Materials & Methods: This analytical study was performed on patients referred to two infertility centers in Babol after ovulation induction. After collecting sperm specimens from the cases, the samples were kept in sterile tubes and then they were washed and swum up before performing IUIs. Sperm concentration, motility and morphology were evaluated according to NAFA and ESHRE-SIGA criteria (2002). Statistical analysis was done by SPSS software using logistic regression, paired t-tests and Fisher's exact test. A p-value < 0.05 was considered significant.

Results: Out of 561 patients, IUIs were successful in 103 (20.2%) patients with normal sperm morphology greater than 5% and in 4 (7.7%) patients with normal sperm morphology fewer than 5%; the difference being statistically significant ($p < 0.05$). In 504 cases with sperm concentrations greater than 20 million/ml, IUI success rates in subjects with normal sperm morphology greater than 5% were significantly higher than cases with normal sperm morphology fewer than 5% (21.4:5.6), ($p < 0.01$). In 543 cases with sperm motility greater than 50%, IUI success rates were significantly higher in patients with normal sperm morphology greater than 5% compared to the cases with normal sperm morphology fewer than 5% (20.5:8.3), ($p < 0.05$).

Conclusion: It seems that normal sperm morphology >5% is an important and effective factor in IUI outcomes and normal sperm morphology, alongside sperm counts and normal motility, has an essential role in increasing pregnancy rates. Therefore, it is suggested that in addition to sperm counts and motility, evaluations of sperm morphology be included in the work up too.

Key Words: Semen analysis, IUI, Sperm motility, Sperm morphology, Sperm count, Infertility, ART.

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