

Sex selection by using albumin gradient technique for sperm separation in IUI cycles

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Abstract

Introduction: One of the primary desires of couples, especially in Asian countries, is to have a male offspring. This wish is generally higher in fertile than infertile couples. One of the techniques used in infertility centers for separating the spermatozoa containing Y or X chromosomes, is the Ericsson method that is simple, cheap and practical with application of no toxic material. The goal of this study was to evaluate the results of sex selection with sperm separation using albumin gradient technique in fertile and infertile couples under IUI treatment cycles.

Materials & Methods: This was a descriptive-analytical study. A total of 32 couples (30 fertile and 2 infertile couples) were enrolled for sex selection techniques (31 asking for male and one for female offsprings) using Ericsson method. Following sperm evaluation, the sperm samples were prepared with Ericsson technique in less than 2 hours. Through a transfer catheter 400-500 μ l of the fluid, containing more than 1×10^6 spermatozoa, was transferred into uterine cavity. All candidates had been super-ovulated for IUI cycles. The data were analyzed using χ^2 , t-test and Wilcoxon nonparametric tests.

Results: Out of 32 couples under study, 30 individuals already had one child. The rate of pregnancy after IUI plus albumin gradient was 34.4%. The pregnancies of 4 couples were aborted. The live birth rate was 21.8% and achieving the desirable offspring was 71.4% among the born babies. The findings also showed that two sperm parameters of fast and slow motilities and normal morphology, following sperm separation with albumin gradient, were significantly increased ($p < 0.001$, $p < 0.05$ and $p < 0.05$, respectively). In addition, the rate of sperm progressive motility and normal morphology was higher in subjects who gave birth to male offsprings than other candidates. Only one couple had asked for a female offspring, but the process resulted in a normal male infant.

Conclusion: The separation of spermatozoa by albumin gradient technique, which was introduced by Ericsson, is a suitable technique for sex selection of offsprings. However, the applicability of this technique for infertile couples needs further studies. The aforementioned technique is considered safe, since it neither requires toxic materials during sperm separation, nor involves embryo manipulation.

Key Words: Sex selection, Albumin gradient, IUI, Sperm, Sperm motility, Sperm morphology.

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