

The effect of pentoxifylline on the ICSI program of severe asthenozoospermia

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OBJECTIVE: Intracytoplasmic sperm injection (ICSI) is now widely used for male factor treatment in human IVF-ET program. Although poor sperm parameters including count, sperm motility and morphology has been reported not important in ICSI program, sperm motility is a prerequisite indicator to find viable spermatozoa in the treatment of severe asthenozoospermia. Pentoxifylline (PF) and other methylxanthines are known to influence sperm metabolism and motility. Because of its enhancing effect on sperm motility and its role in facilitating the acrosome reaction, the agent is now commonly used in human ICSI program to easily find motile spermatozoa. It has been postulated that PF, being a phosphodiesterase inhibitor, increase sperm kinetic parameters and the number of spermatozoa exhibiting hyperactivated motility by raising the intracellular content of cAMP, a molecule involved in the generation of sperm energy. The aim of study was to evaluate the effect of PF on the conventional ICSI program undergone in severe asthenozoospermia.

DESIGN: A study was undertaken at the Infertility Medical Center, CHA General Hospital. Comparing the clinical results of ICSI between PF-treated and PF-untreated group.

MATERIALS AND METHODS: Total 348 cycles of ICSI program were undertaken at CHA General Hospital from January, 1996 to September, 2000, were divided into two groups – injected with PF-treated sperm(PFT, 204 cycles) or non-treated sperm(NPFT, 144 cycles) and the clinical results of PFT group were compared with those of NPFT.

RESULTS: PF-treatment on sperm increased their motility of normozoospermia and severe asthenozoospermia. Fertilization rate of PFT group was higher than those of ICSI programs undertaken using sperm of NPFT (69.7% vs. 62.9%, $p<0.01$). And, embryo transfer and pregnancy rates of PFT were slightly higher than those of NPFT (93.1%, 44.2% vs. 90.3%, 36.2%).

CONCLUSION: These results showed that treatment of PF has a beneficial role on selection of viable spermatozoa in severe asthenozoospermia.