Journal of Andrology, Vol. 27, No. 1, January/February 2006

DOI: 10.2164/jandrol.05079

Clinical Use of Pentoxifylline for Activation of Immotile Testicular Sperm Before ICSI in Patients With Azoospermia

BORUT KOVAčIč, VELJKO VLAISAVLJEVIć AND MILAN RELJIč

From the Department of Reproductive Medicine and Gynecologic Endocrinology, Maribor Teaching Hospital, Maribor, Slovenia.

Correspondence to: Borut Kovačič, Department of Reproductive Medicine and Gynecologic Endocrinology, Maribor Teaching Hospital, Ljubljanska 5, SI-2000 Maribor, Slovenia (e-mail: borut.kov{at}sb-mb.si).

The testicular sperm from biopsy and frozen/thawed tissue are frequently immotile. The purpose of our retrospective study was to assess the effect of short exposure of testicular samples with only immotile sperm to pentoxifylline (PF)-sperm motility stimulator. In 77 of 294 (26.2%) testicular sperm ablation/testicular sperm extraction-intracytoplasmic sperm injection (TESA/TESE-ICSI) cycles in patients with azoospermia, only immotile sperm were found in biopsies even after 2 hours of incubation of tissue in the medium. These 77 cycles were divided into 2 groups. In group 1 (cycles between 1999 and 2001; n = 30), ICSI was performed with untreated immotile sperm. In group 2 (cycles between 2002 and 2004; n = 47), immotile testicular sperm were treated for 20 minutes with pentoxifylline (PF) (1.76 mM) before ICSI. Both groups had the same proportion of ICSI cycles with fresh, frozen/thawed, and aspirated testicular sperm. The overall pregnancy rate of TESA/TESE-ICSI did not vary during the study period. In 45 of 47 (95.7%) testicular samples with total immotility, the sperm started to move 20 minutes after PF treatment. The mean time required for ICSI was shortened in the PF group (30 minutes [minimum 10, maximum 90] vs 120 minutes [minimum 60, maximum 240]) due to easier identification of motile sperm. In comparison with the nontreated group, the PF group had a higher fertilization rate (66% vs 50.9%; $P < .005$) and mean number of embryos per cycle (4.7 ± 3.3 vs 2.7 ± 2.1; $P < .01$). The clinical pregnancy rate per cycle in PF and non-PF groups was 38.3% and 26.7%, respectively. By using PF in cases of only immotile testicular sperm we can cause movement of testicular sperm, allow easier identification of vital sperm, shorten the procedure, improve fertilization rates, and increase the number of embryos.

Key words: Testicular biopsy, human spermatozoa, phosphodiesterase inhibitors, motility stimulants, fertilization

Journal of ANDROLOGY HOME

J. Rajfer

Letter to the Editor: Is TESA Passe?

J Androl, July 1, 2006; 27(4): 491 - 491.

[Full Text] [PDF]