

The effect of pentoxifytline on motility and morphology of spermatozoa from epididymal and testicular samples of infertile men

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Abstract

There are generally three factors involved in male infertility: low count, weak motility, and abnormal morphology of spermatozoa. Currently, it is impossible to improve the quality of sperm count and morphology *in vitro*. However, it may become possible to improve the sperm motility with the application of motility enhancer medicine. The objective of this study was to evaluate the effect of pentoxifylline (PX) on sperm motility and morphology of asthenozoospermic epididymal and testicular samples. The specimens were retrieved with percutaneous epididymal sperm aspiration (PESA) and testicular sperm extraction (TESE) from men with obstructive azoospermia. A total of 40 PESA and 40 TESE samples were allocated to this prospective study. Following preliminary evaluation, each sample was processed with swim up procedure and then divided into two aliquots of control (non-PX) and PX (3.5 mM PX). Following 45 min of incubation at 37°C, the percentages of motility and normal morphology of spermatozoa were evaluated using Mackler chamber and papaniclau staining technique, respectively. The mean sperm counts in the PESA and TESE groups were $7.4 \pm 7.3 \times 10^6$ and $2.43 \pm 1.3 \times 10^6$, respectively. The percentages of normal morphology in the above groups were 22.67 ± 11.6 and 14.9 ± 9.2 which were respectively changed to 23.2 ± 15.7 and 9.5 ± 1.9 with PX incubation. In addition, the percentage of control progressive motility in the PESA and TESE samples were $13.9 \pm 4.2\%$ and $0.26 \pm 0.6\%$ which were increased to $20.1 \pm 9.7\%$ ($p < 0.001$) and $0.95 \pm 0.03\%$ ($p < 0.05$). These results strongly suggest that PX was successful in enhancing sperm motility particularly in the PESA group. It also did not have any significant side effect on sperm morphology. PX is considered to be safe and cheap, with easy application which may be used for improving the male infertility treatment program. With its dual role as motility enhancer and vitality detector of spermatozoa, it can be used safely for the ICSI treatment of severe cases of asthenozoospermia.

Keywords: Infertile men, Pentoxifylline, Motility, Morphology

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