

# Effects of in-vitro application of pentoxifylline on the morphology of human spermatozoa after vitrification in asthenozoospermic patients

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Cryopreservation of human spermatozoa is widely used in many assisted reproduction units to preserve male fertility [1]. Vitrification is based on the ultrarapid freezing and is routinely assayed for cryopreservation in assisted reproductive technology. Mohamed [2] showed that cryopreservation significantly affects progressive motility, viability and mitochondrial membrane potential of spermatozoa. Pentoxifylline (PX) is a phosphodiesterase considered to be a sperm movement enhancer, hyperactivation agent, inhibitor of reactive oxygen species and acrosome reaction-improving agent. The aim of our study was to evaluate the effect of in-vitro application of PX on sperm parameters and ultrastructure after vitrification. A total of 30 asthenozoospermic semen samples were selected and divided into two groups after vitrification: control (without PX) and experimental (with PX). A significant decrease in sperm motility, morphology and viability was observed post vitrification, but sperm motility was increased significantly following application of PX. On the other hand, PX did not exert any significant effect on the ultrastructure of the acrosome, plasma membrane and tail of vitrified spermatozoa.

## References

- [1] Esteves et al. (2007) Effects of pentoxifylline treatment before freezing on motility, viability and acrosome status of poor quality human spermatozoa cryopreserved by the liquid nitrogen vapor method. *Braz J Med Biol Res* 40:985-992.
- [2] Ali Mohamed (2015) Slow cryopreservation is not superior to vitrification in human spermatozoa; an experimental controlled study. *Iran J Reprod Med* 13:633-644.

## Keywords

Spermatozoa, pentoxifylline, vitrification, human, ultrastructure