Letter to Editor

Dear Editor,

I read with considerable interest the original article “Study of human sperm motility post cryopreservation” by Oberoi et al. published in *Med J Armed Forces India* 2014;70: 349–353.¹ Having gone through the article I would like to add the following:

The study for the first time, compares cryopreserved sperm motility at 40 min Vs 20 min post thaw. The exact cause of increase in motility after thawing for 40 min is not clear. Do the authors have a probable explanation for it?

The samples were cryopreserved for 60 min. Will the longer cryopreservation which will be the case in clinical setting have the same effect?

The clinical significance of change in motility in pregnancy rate in IUI/IVF cycles can be studied by undertaking an RCT with more patients in near future.

REFERENCE

1. Oberoi B, Kumar S, Talwar P. Study of human sperm motility post cryopreservation. *Med J Armed Forces India*. 2014;70:349–353.

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Reply

Dear Editor,

We thank the reader for showing keen interest in our recently published Original article in MJAFI. We are grateful for the comments.

The scientific community did think about this phenomenon earlier but assumed that it may be occurring inside the bio incubator – the uterus after the insemination. Most biologist were happy with moderate recovery of sperm motility and number at 20 min post thaw interval as the number was adequate for fertilization and attaining clinical pregnancy. We also thought that prolonged culture of sperms in vitro may harm the sperm function or have unknown effects and thus were programmed to wait for 20 min before recovering the motile sperms with swim up method and inseminated the eggs with this moderately recovered semen sample thereafter.

Our group carried out this experiment to assess these semen factors at 40 min post thaw interval and deduced that motility does increase substantially after longer

incubation period of 40 min. This increase, supports our hypothesis that majority of the immotile sperms are infact alive and those with reduced motility does recover better after prolonged incubation period. Thus we believe that sperms are in a state of cold shock which is affecting their membrane permeability and early recovery. This phenomenon is reversible on longer incubation in appropriate culture media and temperature. This deduction makes us think that better sperm motility and number will help us in improving outcome in assisted reproductive technologies. Such experiments will be further supported by the vitality studies using eosin and carrying out hypo osmotic test post thaw which we are carrying out at our reproductive unit presently. Regarding the duration of freezing our team worked on the scientific fact that suspending the semen sample in liquid nitrogen for 60 min is enough to stabilize it at –196 °C. Thereafter the sample may lie in a suspended animation for times immemorial if we don't alter any other factor such as temperature, external radiation and light. As per the principles of cryobiology it is now known that the

primary damage to the sperm membranes and mitochondrial complex is caused during freezing/cooling step and storage phase is relatively safer.

Presently the study gives us confidence that we can visually see increase in the sperm motility over prolonged incubation of 40 min and this fact gives us lot of confidence as motile sperm number does finally correlate well with higher fertilization rate and pregnancies. We have to corroborate this with clinical outcome in terms of clinical pregnancy rate and foremost of all take home baby rate for which more clinical multi centric studies have to be undertaken. We also suggest carrying out advanced sperm function test for assessing the sperm function before and after the cryo-freezing procedure.

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Letter to Editor

Dear Editor,

I read with extreme interest the original article titled “Study of human sperm motility post cryopreservation” by Oberoi et al published in *Med J Armed Forces India* 2014;70: 349–353.¹

It is a good article and throws light on much ignored aspect of insemination. In order to improve the post thaw results I would like the comments of author on the following:

- (a) The raw semen samples could be washed with density gradient media, which would yield better sperm quality before cryopreservation and increase post thaw yield.²
- (b) Increasing the height of media column for post thaw swim up to prevent Reactive Oxygen Species (ROS) formation when incubating for longer period.

2. Brugnon F, Ouchchane L, Pons-Rejraji H, et al. Density gradient centrifugation prior to cryopreservation and hypotaurine supplementation improve post-thaw quality of sperm from infertile men with oligoasthenoteratozoospermia. *Hum Reprod.* 2013;28:2045–2057.

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REFERENCES

1. Bhavni Oberoi, Sushil Kumar, Pankaj Talwar. Study of human sperm motility post cryopreservation. *Med J Armed Forces India.* 2014;70:349–353.