

The comparison of nitric oxide production and motion characteristics of sperm after cryopreserved in three different preparations

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PURPOSE: To look for the best quality of sperm after cryopreserved, we compared of three different spermatozoa preparation during the sperm cryopreservation: semen treated with cryoprotectant were cryopreserved 48 hours then used swim-up method to prepare, using swim-up method to prepare sperm and then cryopreserved 48 hours or using 60% one layer puresperm to prepare sperm then cryopreserved 48 hours.

MATERIALS AND METHODS: Semen specimens were obtained from 10 volunteer after at least 3 days of abstinence. The 3CC of semen specimens were divided into three aliquots for each preparation procedures: semen treated with cryoprotectant were cryopreserved 48 hours then used swim-up method to prepare, using swim-up method to prepare sperm and then cryopreserved 48 hours or using 60% one layer puresperm to prepare sperm then cryopreserved 48 hours. The motile sperm recovery, motility percentage and motion parameters were evaluated for each semen specimen before cryopreservation and after thaw. And the nitric oxide was measured using the chemiluminescence method after centrifugation.

RESULTS: Recovery rate was higher in the puresperm group than the swim-up group, and the swim-up group was higher than semen treated with cryoprotectant before group. The motility ratio between swim-up group and puresperm group had no significant difference, but they are higher than semen treated with cryoprotectant before group in motility ratio. NO produced in the puresperm group was significantly lower than swim-up group and swim-up group was lower than semen treated with cryoprotectan group.

CONCLUSION: Our data suggest to prepared sperm with use 60% one layer puresperm before cryopreservation has the best recovery rate and motility ratio after thawing. The lower level of NO produced in the puresperm method may suggest that better sperm quality achieved is due the decreased NO production.