Assessment of an optimum abstinence time for cryopreservation of semen in cancer patients

A Agarwal, M Shekarriz, AJ Thomas and RS Sidhu
Andrology Laboratory, Department of Urology, Cleveland Clinic Foundation, Cleveland, OH 44195, USA, Department of Physiology, Medical College, Amritsar, India

This study was designed to investigate the correlation of abstinence period with the pre-freeze and post-thaw motion parameters in semen specimens obtained for sperm banking.

Methods
Data from 79 patients which underwent therapeutic semen banking were evaluated for this study. Samples were divided into three groups with regard to abstinence period: group I, 1-2 days (n=12); group II, 2-3 days (n=45); group III > 3 days (n=22). Pre-freeze motile sperm count (MSC) and post-thaw MSC and motion parameters (motility, velocity, linearity, ALH, motility index), as well as percentage changes were analyzed and compared between the groups.

Results
There was no significant difference in semen volume and the pre-freeze MSC and motion parameters between the three groups. The post-thaw motility index was significantly higher in group I (p=0.04). No significant differences were found for other parameters. The percentage decrease in motility, linearity, ALH and motile sperm count were not significantly different between groups. The percentage changes in velocity and motility index in the group I were significantly less than in the group II (p=0.03), whereas group III showed no significant difference with the other groups.

Conclusion
Our results indicate that semen collection for cryopreservation after an abstinence period of 1-2 days results in post-thaw quality which is comparable to semen quality after an abstinence period of 2-3 days. Moreover, the post-thaw velocity and motility index in specimen collected after 1-2 days was significantly higher. Based on these data, an abstinence period of 1-2 days can be recommended for sperm banking in cancer patients to allow frequent semen sampling before proceeding with further specific therapy.