Assessment of an Optimum Abstinence Time for Cryopreservation of Semen in Cancer Patients.

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Objectives: Although, an abstinence period of 2-3 days is the most recommended (WHO) and commonly prescribed period for diagnostic semen analysis, the correlation of the abstinence period with the sperm quality after cryopreservation of human semen has not been identified. The urgency of surgical, chemotherapy or radiation therapy in patients with malignant diseases who are consulting for semen banking indicate the necessity to define the shortest abstinence period which allows frequent semen collection in a limited time interval and the best post-thaw sperm quality. 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.

Design: Retrospective comparison of pre-freeze and post-thaw semen analysis results in patients with different malignancies with three different abstinence intervals.

Materials and Methods: Data from 79 patients who underwent therapeutic semen banking were evaluated for this study. Samples were divided into three groups with regard to abstinence period: group 1, 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.

Conclusions: 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 specimens 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.