Prefreeze and postthaw semen quality in men with testicular cancer. J Hallak, VS Sekhon, AJ Thomas, Jr. and A I Agarwal. Andrology Research and Clinical Laboratories, Department of Urology, The Cleveland Clinic Foundation, Cleveland, OH.

Objectives: Testicular cancer is the most common malignancy in young men between the ages of 15 to 35 years. Alkylating agents, such as the cisplatin, can cause either transient or permanent azoospermia in 70% to 90% of patients. We examined the relationship between prefreeze and postthaw sperm characteristics, the stage of disease and the histologic diagnosis to determine which of these factors influence the quality of postthaw sperm.

Design: Retrospective review of sperm bank results from patients with testicular cancer who cryopreserved their semen specimens prior to treatment.

Materials and Methods: The study was approved by institutional review board. Records of 157 men with testicular cancer were reviewed. At orchiectomy, 81 had stage I disease, 42 had stage II, 20 had stage III. Histologic diagnoses were: seminoma (41%), mixed germ cell (42%), embryonal (12%), choriocarcinoma (1.5%), teratoma (0.9%), large cell tumor (0.9%), and smooth muscle tumor (1.7%). Stage and histologic classification were not available on 14 patients. Semen specimens from 50 normal men were used as control. Sperm motion characteristics were measured with a computer-assisted semen analyzer. The samples were frozen in TEST-yolk buffer with glycerol. Cryopreserved semen was thawed at 37°C, and motion characteristics were measured.

Results: Prefreeze and postthaw sperm motion characteristics (including total motile sperm, percent motility, curvilinear velocity, and linearity) were significantly below the control group (P < 0.002). Stage of disease and histologic diagnosis did not affect prefreeze or postthaw semen quality (P = 0.33). Patients with seminoma had higher total motile sperm count in postthaw specimens compared to non-seminomatous germ cell tumors (P = 0.04). The percentage change in sperm motion characteristics from prefreeze to postthaw condition in all patients was comparable to controls.

Conclusions: Patients with seminoma had better postthaw sperm quality. Stage and histology do not affect postthaw sperm quality. Sperm banking should be offered to all patients with testicular cancer who may wish to preserve their future fertility.