

Normal Sperm Quality and Post-Thaw Survival is found in Cancer Patients Presenting for Cryopreservation Prior to Gonadotoxic Therapy

Omid Rofeim, Samuel A. Amukele, Bruce R. Gilbert
North Shore-Long Island Jewish Health System

Introduction: Prior studies have shown that more than half of the men of reproductive age with malignancies have impaired semen quality. Cancer treatment can further damage spermatogenesis. Recently, men have been presenting for cryopreservation soon after diagnosis. We present a comparative analysis of sperm quality and post-thaw survival in men with and without malignancies.

Methods: 212 men with cancer and 22 men without cancer who cryopreserved semen were evaluated. All cancer patients with total sperm count of 5 million or higher, and those with acute leukemia were compared to men without cancer. Mann-Whitney rank sum test was used for data analysis.

Results Of the cancer patients, 22.6% had nonseminomatous primary testicular cancer, 20.8% had Hodgkin's lymphoma, 18.8% had testicular seminoma, 12.3% had non-Hodgkin's lymphoma, 5.2% had prostate cancer, 4.3% had acute leukemia, and 16.0% had other types of cancer. 9.4% of the cancer patients had a total sperm count of less than 5 million. In the 22 men without cancer, 36.4% requested cryopreservation prior to vasectomy and the remainder had other benign conditions. There were no statistically significant differences noted between any of the cancer groups compared to men without cancer except for age.

(n)	Volume* (ml)	Conc.* (million/ ml)	Motility* (%)	Motile Fraction* (million)	Survival Motility* (%)	Survival Viability* (%)	Age** (years)
No Cancer (22)	2.83	67.1	48.36	101.41	76.40	78.03	35.23
All Cancers (212)	2.32	61.07	46.79	81.60	68.76	73.33	30.10
All Cancers >5 million (192)	2.43	67.17	49.77	90.03	72.35	76.05	30.34
Acute Leukemia (9)	2.31	76.29	35.67	149.97	60.18	62.26	24.78

All p values are compared to men without cancer. * p value was not significant, ** p <0.05.

Conclusions: The semen quality of patients with cancer did not differ significantly from men without cancer in this study. In addition, less than 10% of the patients had severe oligozoospermia. This change from prior studies might be related to the more rapid diagnosis and referral for sperm banking in cancer patients. Men who present critically ill and need urgent chemotherapy, such as those with acute leukemias, should be encouraged to cryopreserve sperm soon after diagnosis and prior to beginning gonadotoxic therapy.