Semen quality before cryopreservation and after thawing in 543 patients with testicular cancer

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JORNAL BRASILEIRO DE REPRODUCAO ASSISTIDA


doi: 10.5935/1518-0557.20170009

Abstract

Objective

The main objective of this study was to assess semen characteristics of patients with testicular cancer before cryopreservation and after thawing, to evaluate the consequences of this technique on sperm quality in patients with testicular cancer.

Methods

Five hundred eighty-nine samples from 543 patients with testicular cancer were cryopreserved between 1995 and 2015, one aliquot per patient was used for a thawing test to assess the impact of cryopreservation on sperm motility; semen analysis was performed before cryopreservation and after thawing, the result interpretation was carried out using the 2010 World Health Organization (WHO) Laboratory Manual, and consent forms were signed by the patients for freezing and when sperm was used for reproductive purposes.

Results

Hypospermia was observed in 28.7% of samples, the median sperm concentration was 18 million/mL with 35% oligozoospermia; twenty-two patients (4.1%) had azoospermia and 12.7% had severe oligozoospermia, the median sperm count was 31.3 million and 261 semen samples (44.3%) were normal in all parameters according to the WHO; total motile sperm count before cryopreservation and after thawing was 12 (0-412.2) and 7 (0-303.9) million sperm, respectively ($p < 0.00001$, 95% CI 5.48-14.91), which represents a 32% reduction; concerning the utilization of cryopreserved semen samples, only twelve patients (2.2%) used their frozen sperm for reproductive purposes.

Conclusions

An impairment in semen quality was found in almost half of the samples from patients with testicular cancer, only few patients had azoospermia or severe oligozoospermia; sperm
cryopreservation significantly reduces sperm motility and total motile sperm count and very few patients use their frozen sperm for reproductive purposes.

**Keywords:** Testicular cancer, sperm cryopreservation, sperm banking