SPERM QUALITY IN THE VARIOUS STAGES AND HISTOLOGIC TYPES OF TESTICULAR CANCER. M. Tolentino Jr., I. Ayzman*, A. J. Thomas Jr., and A. Agarwal, Andrology Research & Clinical Laboratories, Department of Urology, Cleveland Clinic Foundation, Cleveland, OH 44195.

Many patients with testicular cancer have low sperm density. In addition, cryopreservation techniques invariably lead to diminution of sperm quality. Thus, cryopreserved sperm from these patients produces lower pregnancy rates than sperm from fertile men. It is still unclear, however, whether sperm from these patients are inherently defective or if they lose their motility after thawing. This study was conducted to demonstrate whether differences in testis tumor histology following cryopreservation are related to the decrease in sperm quality and whether disease stage has any bearing on this effect. All testis cancer patients referred for semen cryobanking were retrospectively grouped according to histology and stage of disease. Records from 34 newly diagnosed patients were reviewed. Seventeen percent of patients presented at stage I, 29% stage II and 21% stage III. Semen analyses were done by using a computer-assisted semen analyzer before and after cryopreservation. The nitrogen-vapor technique using Test-yolk buffer with glycerol as a cryoprotectant was used for freezing. Various sperm motion characteristics (motility, curvilinear velocity [VCL], linearity, amplitude of lateral head displacement [ALH], and motility index [MI] together with the post-thaw motile sperm count (MSC) were evaluated. Mean age, semen volume and both pre-freeze and post-thaw semen characteristics were not statistically different between patients with stages I to III cancer. Pre-freeze semen quality tended to worsen as the disease stage progressed, especially with respect to MSC, VCL, and motility. Following thawing, the same trend was seen with MSC, motility and MI. Stage III patients also had the worst pre-freeze ALH and MI, and post-thaw VCL and ALH. With respect to tumor histology, improved semen quality was seen among patients with pure seminoma (28%) > pure embryonal (22%) > mixed germ cell tumors (50%). However, 71.4% of patients with mixed tumors presented with stage III disease, whereas all patients with seminoma presented with stage I disease. The disease stage at presentation may affect semen quality to a greater extent than tumor histology. With the availability of new micromanipulation techniques in assisted reproduction, improvements and continued research in cryopreservation of sperm from testis cancer patients is needed.