

IMPORTANCE OF SEMEN BANKING IN PATIENTS WITH SYSTEMIC DISEASES.

P Ranganathan*, AM Mahran*, J Hallak*, and A Agarwal, Center for Advanced Research in Human Reproduction and Infertility, Urological Institute and Department of Gynecology and Obstetrics, The Cleveland Clinic Foundation, Cleveland, OH.

Chronic non-testicular illnesses and immunosuppressive/cytotoxic therapy for non-malignant diseases can permanently suppress spermatogenesis. The problem is on the rise among young men receiving treatment for systemic diseases with therapies that can alter their fertility status. The objective of this study was to determine the usefulness of cryopreservation in a group of patients with non-malignant, non-testicular conditions who may require immunosuppressive or cytotoxic therapy. Their pre-treatment semen quality was assessed and compared to the pre-freeze and post-thaw semen parameters of a group of healthy donors. Semen specimens were obtained from 25 donors and 23 patients with varying clinical diagnoses [autoimmune disorders (n = 11), kidney diseases (n = 4), diabetes (n = 3), and others (n = 5)]. All specimens were cryopreserved by a standard freezing procedure. Pre-freeze and post-thaw sperm motion characteristics were measured. Patients and donors matched in age and ejaculate volume. Patients' pre-freeze and post-thaw sperm count and motility, though significantly lower than donors ($p = 0.001$), matched the WHO reference range for semen parameters. Semen quality (pre-freeze and post-thaw) was similar among patient groups divided by their diagnoses. Thirty percent of patients (7/23) had greater than 40 million motile sperm after freezing (mean \pm SD 120.6 ± 155 , range $41 - 448 \times 10^6$). These patients can pursue a simple intrauterine insemination procedure for assisted reproduction. The remaining patients had adequate motile sperm count for *in vitro* fertilization or intracytoplasmic sperm injection methods (6.0 ± 0.38 , $0.5 - 25.3 \times 10^6$). We recommend semen cryopreservation in these patients prior to their treatment to enable future pregnancies.