# MALIGNANT STEROID CELL TUMORS: AN ANALYSIS OF DEMOGRAPHICS, DIAGNOSIS AND TREATMENT

**Authors:** Daniel Lee (1), Michael Demangone (1), Karam Abi Karam (2), Dylan Langland (1), Caitlyn Voth (3), Beau Hsia (3), Craig Heise MD (1), Peter T. Silberstein (4)

**Affiliations:** (1)University of Arizona College of Medicine – Phoenix, Phoenix, AZ (2)Kansas City University College of Medicine, Kansas City, MO (3)Creighton University School of Medicine-Phoenix, Phoenix, AZ (4)Creighton Hematology Oncology, Omaha, NE

**Background:**
Steroid cell tumors (SCTs) are a subtype of rare sex cord stromal tumors that demonstrate androgenic manifestations, which demonstrate malignancy in 25-40% of cases. Though the median age of diagnosis was at 48 years, malignant SCTs were diagnosed as early as 15 to as late as 88 years of age. Steroid cell tumors are extremely rare, comprising close to just 0.1% of all ovarian tumors, suggesting that further investigation of diagnostic patterns may shed light on unknown epidemiological variables. This study utilized the National Cancer Database (NCDB) to explore relationships between demographic factors and patients diagnosed with malignant SCTs.

**Materials and Methods:**
This is a retrospective cohort analysis of demographic factors provided in the NCDB for patients diagnosed with malignant SCTs, confirmed with histology, from the years 2004-2020. 124 patients were isolated. Using regression analysis and descriptive statistics, incidence trends for SCT are discussed for demographic factors such as race, age of diagnosis, Charlson-Deyo score, insurance status, and measures of rurality versus urban influence.

**Results:**
The annual incidence of SCT displayed an upward trend (R2 = 0.9863). Most patients identified as Caucasian (57%), while a substantial number of patients identified as Black (37%). The mean age of diagnosis was 50 years (SD = 18.032, Range = 73, CI = 46.84 - 53.20). 66% of patients had a Charlson-Deyo Score of 0. The majority of patients were stage 1 at diagnosis (64%). The average size of the tumor at detection was 90 mm (SD = 67, Range = 4 - 314mm). Most patients were covered by private insurance (55%), while 25% of the cohort utilized Medicare for coverage. The primary treatment approach was surgical tumor resection, accounting for 98% of cases. Chemotherapy was administered to 69% of patients, and radiation therapy was utilized in 4% of instances. The average survival time following diagnosis was 11 years.

**Conclusion:**
Following a thorough review of existing literature, we identified a significant knowledge gap regarding malignant SCTs and concluded this is the first NCDB analysis of tumors of this nature. 54.8% of patients with malignant SCT lived in metropolitan counties of greater than 1 million population, and coincidentally an equal percentage of patients with this diagnosis were insured through private insurance or prepaid health plans as the primary payor. This study marks the first incidence in literature to evaluate socioeconomic factors of malignant SCT: Though only 13.6% of the US population self-identify as black, black patients comprised nearly 40% of those diagnosed with this malignancy. Continued investigation is encouraged to further evaluate how demographic and socioeconomic data affect patients with SCT.

**Support:** none