

An NCDB analysis on the demographic, treatment, and survival of nonkeratinizing small cell squamous cell carcinoma.

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Background: Nonkeratinizing small cell squamous cell carcinoma (NSCSCC), ICD-O-3 code-8073, is a malignant epithelial neoplasm composed of small, basaloid-appearing squamous cells with high nuclear-to-cytoplasmic ratios and minimal cytoplasmic keratinization, lacking keratin pearl formation, retaining immunohistochemical evidence of squamous differentiation, and not exhibiting neuroendocrine features. Despite NSCSCC's rarity, it accounts for 5% of all squamous cell carcinomas (SCC). Given NSCSCC's rarity, evaluating diagnostic trends may provide important insights into its epidemiology. Therefore, the National Cancer Database (NCDB) was analyzed to characterize demographic factors among patients diagnosed with NSCSCC. **Methods:** A retrospective cohort study using the 2004–2020 NCDB identified patients with histologically confirmed NSCSCC (N = 934). Demographic and clinical variables including age, sex, race, household income, survival rate, and treatment method—were summarized using descriptive statistics, and incidence trends were evaluated using regression analyses. **Results:** Between 2004 and 2020, 934 patients with SCNSCC were identified in the NCDB with a decreasing incidence ($R^2 = 0.33$). The majority of patients are female (60.3%), with the racial breakdown as follows: 84.5% White, 11.3% Black, and 4.2% Other. The mean age at diagnosis is 64.6 years (SD = 0.442). Median household income for each patient is measured through the respective data for their zip code of residence, said data is then further categorized as quartiles based on equally proportioned income ranges among all US zip codes; 21.1% of patients are in Q1 (< \$46,277), 23.9% in Q2 (\$46,227 – \$57,856), 25.1% in Q3 (\$57,857 – \$74,062), and 29.9% in Q4 (\$74,063 or more). The most frequently observed primary sites is the upper lobe of the lung (27.7%), with the mean tumor size being 44.94mm (SD = 4.08). The majority of patients (62.5%) did not receive surgical procedures at the primary site, for those that did the vast majority (79.9%) had no residual tumor as the surgical margin; additional primary treatment methods include, 49.3% received at least chemotherapy, 51.5% had radiation, 0.5% had hormone therapy, and 1.2% had immunotherapy. The 2-, 5-, and 10-year survival rates are 52.5%, 37.0%, and 26.3%, respectively, with a mean survival time of 70.209 months (SD = 3.127). **Conclusions:** To our knowledge, this is the first NCDB analysis addressing SCNSCC, thus addressing a significant knowledge gap on the topic. This analysis shows that SCNSCC mainly affects the elderly, with surgery, chemotherapy, and radiation being the common treatments, consistent with previous published work on SCC, the broader category that includes SCNSCC. To better understand how demographic and socioeconomic factors influence diagnosis, treatment, and survival in SCNSCC, further research is needed. Research Sponsor: None.