

Multivariate Analysis of Causes of Death among Hepatocellular Carcinoma Patients: A Seer-Based Study

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Abstract : Objective: To identify cancer and non-cancer causes of death in hepatocellular carcinoma (HCC) patients over different time periods after diagnosis and to compare the mortality risk of each cause in HCC patients with the general population. Methods: In this retrospective cohort study, data of 67,637 HCC patients from 1975 to 2016 were collected from the Surveillance, Epidemiology, and End Results (SEER) database. We investigated the association between different causes of death and the following variables: age, race, tumor stage at diagnosis, and treatment (surgery, chemotherapy, and radiotherapy); each according to the periods of <1 year, 1-5 years, 5-10 years, and >10 years following the diagnosis. Standardized mortality ratios (SMRs) and their 95% confidence intervals (CIs) were calculated for cancer and non-cancer deaths in each of the mentioned periods following diagnosis. Results: Data of 67,637 patients, of whom 50,571 patients died during the follow-up period, were analyzed. Most deaths were due to HCC itself (35,535, 70.3%), followed by other cancers (3,983, 7.9%). Common causes of non-cancer mortality included infectious and parasitic diseases including HIV (2,823 patients, SMR=105.68, 95% CI: 101.82-109.65), chronic liver disease (2,719 patients, SMR=76.56, 95% CI: 73.71,79.5), and heart diseases (1,265 patients, SMR=2.26, 95% CI: 2.14-2.39), with higher mortality risk in HCC patients than in the general population. Conclusion: Cancers stand for most deaths in patients with HCC. Besides, infectious, and parasitic diseases including HIV represent the commonest non-cancer cause of mortality.

Keywords : hepatocellular carcinoma, seer, causes of death, mortality

Conference Title : ICAGSO 2023 : International Conference on Advancements in General Surgical Oncology

Conference Location : London, United Kingdom

Conference Dates : May 15-16, 2023