

Higher Risk of Cerebrovascular Mortality Radiotherapy

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PERSPECTIVE

The goal of this study was to see if there was a link between radiotherapy (RT) and the risk of cerebrovascular mortality (CVM) among survivors of head and neck cancer (HNC). The Surveillance, Epidemiology, and End Results database was used to find HNC survivors aged 65 years old who were diagnosed between 2000 and 2012. For statistical analysis, Kaplan-Meier analysis, Log-rank tests, and Cox proportional hazards regression models were used. In HNC patients, getting RT increases the risk of cerebrovascular disease (CVD) or cerebrovascular mortality (CVM), and the excess risk of CVD among HNC survivor's increases with age. It could be attributed to the long-term effects of RT just on vasculatures in the head and neck region. As a result, once RT is performed, physicians, patients, and even insurance providers should assess the risk of CVD or CVM together. Several previous studies have evaluated the CVD or CVM risk following RT, but these studies have several limitations, including no distinction between definitive and adjuvant RT, short follow-up time for survivors, and the exclusion of laryngeal cancer patients. To reflect the present link between RT and CVD or CVM, a well-designed study with long-term follow-up is required. In light of this, we examined the link between RT and the risk of CVM using a large contingent of HNC survivors from the Surveillance, Epidemiology, and End Results (SEER) project.

MATERIAL AND METHODS

Patients and the SEER database

The SEER database is the most reliable source of information on cancer incidence and survival. In the United States (US), this encompasses around 35% of the population of the United States. The research Patients who had survived HNC made up the cohort. Between 2000 and 2012 who were 65 years old and received surgery, RT, or surgery with adjuvant RT. Patients were excluded if they had no positive histology, died from causes apart from cancer (non-cerebrovascular mortality), had no anti-cancer local treatment or had no knowledge of the local treatment status, had non-beam RT technologies such as radioisotopes and

radioactive implants, and had a follow-up time of less than 12 months.

The current study was exempt from clearance by the Institutional Review Board because this SEER program incorporates de-identified patient data.

Measurements

Each patient's demographics, clinic pathological, and survival results were included in study-Age, gender, race/ethnicity, tumor stage, and histology are all factors to consider. Stage of SEER, tumor site, and marital status. Surgery, definitive RT, adjuvant RT, and other variables Chemotherapy and other treatments were also mentioned. The fundamentals the study's outcome was CVM, which was defined as the time it takes for a person to die after being diagnosed with HNC for the first time as a result of CVD.

Statistical analysis

The risk of CVM was evaluated between both the three treatment groups: surgery alone, RT alone, and surgery + RT. Pearson's chi-squared test was used to see if there were any differences in categorical data between the three treatment cohorts. The Kaplan-Meier method was used to determine the CVM frequency, which was then, compared using the log-rank test. The risk factors linked with CVM were determined using multivariate Cox proportional hazards models.

Sensitivity analyses were carried out on age, gender, tumor locations, and marital status. SPSS statistical was used to conduct the statistical analyses. A statistically significant P value of 0.05 has been used.

CONCLUSION

Finally, our results indicate that definitive RT might raise the incidence of CVM in older HNC survivors.

For HNC patients who got definitive RT, long-term follow-up and regular CVD screening are required to reduce the risk of CVM. It is vital to improve the RT technology and the target delineation.

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