Survival and secondary malignancy rates for adjuvant radiation therapy versus observation in stage I testicular seminoma: A Surveillance, Epidemiology, and End Results (SEER) analysis.

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Abstract:

**Background:** The standard adjuvant treatment for men with stage I testicular seminoma remains controversial within the literature. We analyzed survival and secondary malignancy rates in men with stage I seminoma who underwent adjuvant radiation therapy (RT) or observation (OB) following orchiectomy. **Methods:** Data was obtained from the Surveillance, Epidemiology, and End Results program (SEER) of the U.S. National Cancer Institute from 1973 - 2003. The primary end points were overall survival (OS) and cause-specific survival (CSS). Multivariate Cox regression models were utilized to study the significance of clinical variables: age at diagnosis, laterality of primary disease, race (white, black, American Indian, Asian/pacific islander) and radiation group. Standardized incidence ratios (observed-to-expected [O/E] ratio) and absolute excess risks of secondary malignancies were also assessed for each subgroup. **Results:** Out of 6,764 patients eligible for analysis, 5,265 were treated with RT and 1,499 with OB. After a median follow up of 7.6 years, the 5-, 10- and 20- year OS rates for the
RT versus OB were 97.9 vs. 95.0; 92.2 vs. 92.2; and 83.6 vs. 84.1 (p= 0.005), respectively. The CSS rates for the same time periods were 99.6 vs. 98.7; 99.2 vs. 98.7; and 99.2 vs. 98.7 (p= 0.002), respectively. Adjuvant RT was associated with improved CSS on multivariate analysis with HR 0.37 (CI 0.19-0.70, p= 0.002). Overall, 312 patients developed secondary malignancies which was significantly higher than the endemic rate (O/E 1.43, p<0.05). RT patients had an increased rate of secondary malignancies when compared with the OB population (O/E 1.93, p<0.05). RT population were at excess risk for contralateral testicular, pancreatic, and hematologic malignancies (p<0.05). **Conclusions:** Within this large United States population analysis, adjuvant RT was associated with improved CSS for men with stage I testicular seminoma. The incidence of secondary malignancies was also found to be significantly increased for the RT group. Further studies are needed to determine if modern RT techniques and field-size reductions may lead to improvements in the therapeutic ratio.

**Abstract Disclosures**

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**Associated Presentation(s):**

1. Survival and secondary malignancy rates for adjuvant radiation therapy versus observation in stage I testicular seminoma: A Surveillance, Epidemiology, and End Results (SEER) analysis.

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