158 Provider Volume and Outcomes Following Prostate Brachytherapy

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Purpose/Objective(s): We assessed the relationship between provider volume and outcomes following brachytherapy in a population-based cohort of men over age 65.

Materials/Methods: We analyzed claims of Medicare-enrolled men over age 65 living in SEER surveillance areas diagnosed with prostate cancer from 1991–1999 who had brachytherapy as initial treatment. Men with T4 or M1 disease were excluded. Recurrences and two-year complications were identified by ICD-9 diagnosis and procedure codes and CPT codes through 2001. Deaths were identified from SEER data through 2002. Brachytherapy case volume was calculated for each radiation oncologist and hospital from 1991–2001. Generalized estimating equations and Cox models were used to evaluate the relationship between provider volume and outcomes following brachytherapy.

Results: We identified 5595 men treated with brachytherapy for whom both a radiation oncologist and hospital provider could be identified. The number of brachytherapy cases performed ranged from 1 to 357 cases for physicians and 1 to 725 cases for hospitals. Men who were older ($p = 0.01$), non-white ($p < 0.01$), lower income ($p < 0.01$), unmarried ($p = 0.02$), living in non-urban areas ($p < 0.01$), or had more comorbidities ($p < 0.01$) were significantly more likely to see lower volume physicians. After adjusting for patient and treatment covariates, higher physician volume was not associated with a decreased rate of complications (OR = 1.04 per 100 cases, $p = 0.56$). However, higher volume hospitals had a slightly lower rate of combined complication diagnoses and procedures (OR = 0.94 per 100 cases, $p < 0.01$). As shown in the table, men treated by higher volume physicians had lower rates of recurrence ($p = 0.01$) and prostate cancer death ($p = 0.03$), and the reduction in all deaths was borderline significant ($p = 0.05$). There was no significant association between hospital volume and recurrence, prostate cancer death, or any cause death.

Conclusions: Men treated with brachytherapy by higher volume radiation oncologists had a significantly lower risk of recurrence and prostate cancer death, with a borderline reduction in total deaths. We did not observe a clear relationship between provider volume and complications following treatment.

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