Disparity in Cancer Treatment: Delay in Time from Surgery to Adjuvant Radiotherapy in Incarcerated Patients

(Poster ID – 1552)

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Introduction

• Prisoners who have cancer are less likely to receive adequate care.

• This study is a retrospective study seeking to address the effect of incarceration on cancer treatment and outcome.
  
   • **Hypothesis:** Compared to general populations, prisoners would experience an increase in time between surgery and adjuvant therapy.
Methods

Study Population and Sample
- Adults (>18 years old) who were diagnosed with cancer that require surgery and adjuvant radiation as treatment at UNC (2000-2019)
- 76 cases selected:
  - 31 incarcerated
  - 45 non-incarcerated

Data Collection
- Demographic data
  - Age, race, sex
- Treatment-related:
  - Surgery-radiation time interval (in days)
  - Treatment duration (from day of surgery to end date of radiation) (in days)
  - Pre- and post-treatment scores of Karnofsky Performance Status

Analysis
- Negative binomial regressions
  - $\alpha = 0.05$
  - SAS 9.4
Results

- Majority were men ($n=57, 74\%$) and white ($n = 57, 74\%$).
- Average age: 56.6 years
- Incarcerated patients: $n = 32$
- 29\% of all treatment cases ($n = 22$), a >10-point change in KPS scores post-treatment, as compared with pre-treatment scores.

Figure 1. Cancer Types Included in the Study.
Results

Figure 2. Interval/Duration Ratio with 95% Confidence Interval for Incarceration Status. (B) and (M) denote bivariable and multivariable analyses, respectively. Surgery-radiation interval was 54% longer in incarcerated patients as compared with non-incarcerated patients.
Discussion

• $T_{SR}$ for treatment of cancers of head and neck and of the CNS should be no longer than 42 days (NCCN). The mean and median $T_{SR}$ in the incarcerated group were 156.1 and 56 days.

• $T_{SR} \geq 50$ days was associated with the worst survival outcome (Harris et al. 2018)

• Among 5 prisoners who did not complete radiotherapy, reasons cited were:
  • Lack of access to transportation
  • Poor communication
  • Ill-treatment received in prison.

• Unable to identify an association between incarceration status and KPS/survival outcome, probably due to small sample size
Summary Points

• This is one of the first studies that examine the effect of incarceration on cancer treatment.

• We identified a delay in radiation treatment post operatively for cancer treatment in the incarcerated population.

• This allows providers and care teams to work on strategies to ensure proper care for incarcerated patients.
References