Does Distance From a Radiation Facility Impact Patient Decision-Making Regarding Treatment for Prostate Cancer?

Fady M. Ghali1,2, Michael Laviolette2, Maria O. Celaya3,4, Judy R. Rees1,2, Elias S Hyams5

1Section of Urology, Dartmouth Hitchcock Medical Center, 2New Hampshire Division of Public Health Services, Bureau of Public Health Statistics and Informatics, 3New Hampshire State Cancer Registry, 4Geisel School of Medicine at Dartmouth, Department of Epidemiology.

ABSTRACT

Does Distance From a Radiation Facility Impact Patient Decision-Making Regarding Treatment for Prostate Cancer?

INTRODUCTION

Introduction. Decision-making in the treatment of prostate cancer is complex and often involves subjective patient concerns. We have anecdotally observed that distance from a radiation facility may deter patients from seeking this therapy; this relationship was previously shown for early stage breast cancer patients in New Hampshire. We sought to determine whether a similar relationship is present for prostate cancer patients in the state.

Methods. Patients with clinically localized prostate cancer diagnosed 2004-2011 were identified from the NHSCR, and categorized by age, D’Amico risk category, year of treatment, marital status, and estimated travel time to the nearest radiation facility, both in-state and out-of-state. A multivariable logistic regression model was created to determine the relationship between distance to a facility and choice of initial treatment.

RESULTS

• Decision-making regarding treatment for prostate cancer is complex and often involves subjective and objective patient concerns.
  – Objective concerns: risk category, age, health status
  – Subjective concerns: treatment side effects, logistical considerations

• Individualized concerns are particularly notable with prostate cancer treatment
  – Lack of a “gold standard”
  – Tradeoffs in risk and convenience are complex

• An important consideration is logistical ease or burden of therapy.

• Radiation treatment requires daily visits to a radiation treatment facility.

• New Hampshire is a rural state and patients may live more remotely.

• Hence, some patients may be deterred from XRT based on travel time and daily commute.

PURPOSE

• We evaluated the impact of travel time on treatment decisions for newly diagnosed prostate cancer in New Hampshire.

METHODS

• Data from the NHSCR were used for this study.

• We included clinically localized prostate cancer diagnosed in 2004-2011.

• Cases were categorized by age, D’Amico Risk, travel time to nearest radiation treatment facility

• Treatment was categorized by those requiring multiple trips (XRT and protons) and single trip (surgery or brachytherapy).

• Analysis was performed using SPSS and R.

DISCUSSION

• Our study found that travel time to nearest radiation treatment facility was not significantly associated with prostate treatment decisions.

• Higher risk categories were associated with a greater probability of choosing multiple trip radiation options

• Older age and being married or cohabiting were associated with multiple trip radiation options.

• Diagnosis after 2006 was associated with a greater likelihood of using treatments completed in a single trip, largely surgery.

• Multiple trip treatments were more likely during winter months among those living further from a radiation facility. This counterintuitive result is difficult to interpret and may be due to chance.

CONCLUSION

• Travel time to a radiation center did not independently affect decisions regarding XRT vs. alternative therapies for treatment of localized prostate cancer in the state of New Hampshire.

• Overall these findings are encouraging in that there are no significant travel barriers to access to all treatment options for prostate cancer in this rural state.

ACKNOWLEDGEMENTS

We acknowledge the Centers for Disease Control (CDC) and Prevention’s National Program of Cancer Registrars for its support of NHSCR. Development of this project was supported in part by cooperative agreement U58/DP003930 awarded to the NH Department of Health and Human Services (NH DHHS), Division of Public Health Services, Bureau of Disease Control and Health Statistics, Health Statistics and Data Management Section. Its contents are solely the responsibility of the authors and do not necessarily represent the official views of the CDC or NH DHHS.

Calculation of travel time was performed by Heather Carlos, Manager Spatial Analytic, at the Norris Cotton Cancer Center’s Geospatial Resource, which is part of the Biostatistics Shared Resource.