

## Use of Androgen Deprivation Therapy (ADT) with Stereotactic Body Radiation Therapy (SBRT) in Prostate Cancer

Alan Lee <sup>1</sup>, Chandan Guha <sup>2</sup>, Madhur K. Garg <sup>2</sup>, Rafi Kabarriti <sup>2</sup>, Julie Jiang <sup>3</sup>, Sujith Baliga <sup>1</sup>

1. Radiation Oncology, Montefiore Medical Center/Albert Einstein College of Medicine 2. Radiation Oncology, Montefiore Medical Center/Albert Einstein College of Medicine, Bronx, USA 3. Biostatistician, Montefiore Medical Center/Albert Einstein College of Medicine

✉ **Corresponding author:** Alan Lee, alanleeku@gmail.com

**Categories:** Radiation Oncology, Urology

**Keywords:** sbrt, stereotactic body radiation therapy, adt

### How to cite this abstract

Lee A, Guha C, Garg M K, et al. (November 02, 2017) Use of Androgen Deprivation Therapy (ADT) with Stereotactic Body Radiation Therapy (SBRT) in Prostate Cancer. Cureus 9(11): a215

## Abstract

**Objectives:** Androgen deprivation therapy (ADT) for prostate cancer has been shown to improve overall survival in high-risk and intermediate-risk patients in conjunction with standard fractionation radiotherapy. The usage of ADT with stereotactic body radiation therapy (SBRT) has not been well described and adoption rates are unknown. In this study, the goal was to elucidate adoption of SBRT + ADT as well as factors associated with its use.

**Methods:** The National Cancer Data Base was used to identify patients diagnosed with localized prostate cancer including low, intermediate, and high-risk groups from 2004 to 2014 in the United States. Percentage utilization per year overall and for each risk-group was obtained for SBRT, SBRT + ADT, EBRT, and EBRT + ADT. Chi Square was used to compare frequencies between groups. Multivariable logistic regression analysis (MVA) was used to assess factors associated with SBRT + ADT usage. Total doses were reported for SBRT.

**Results:** We identified 132,929 patients who were treated with radiotherapy from 2004 to 2014. 93,040 patients were identified as having received standard EBRT of which 44,114 received ADT. 5,461 patients were identified as having received SBRT of which 1,858 (34%) were low-risk, 2,814 (51.5%) were intermediate-risk, and 789 (14.4%) were high-risk. 739 of patients who received SBRT also received ADT. SBRT utilization increased steadily from 2.3% in 2008 to 5.5% in 2014. For low-risk patients SBRT compared to all types of radiation had a utilization of 4.3% in 2008, 4.6% in 2011, and 8.2% in 2014. For intermediate-risk patients SBRT compared to all types of radiation had a utilization of 2.1% in 2008, 3.9% in 2011, 6.5% in 2014. For high-risk patients SBRT compared to all types of radiation had a utilization of 0% in 2008, 2.2% in 2011 and, 2.5% in 2014. SBRT + ADT was used in 14% of patients compared to SBRT alone vs 48.4% for EBRT + ADT compared to EBRT alone ( $p < 0.001$ ). Utilization of SBRT + ADT compared to standard fractionation EBRT + ADT was 5.8% vs 15.9% for low-risk ( $p < 0.001$ ), 13.2% vs. 39.8% ( $p < 0.001$ ) for intermediate risk, and 34.1% vs 80.2% ( $p < 0.001$ ) for high-risk. Men who were treated with SBRT + ADT were more likely to be intermediate-risk (MVA Odds Ratio (OR) 2.79;  $p < 0.001$ ), high-risk (MVA OR 8.5;  $p < 0.001$ ), non-white race (MVA OR 1.35;  $p = 0.009$ ), and older age (MVA OR 1.04;  $p < 0.001$ ). Treatment at academic program vs non-academic, income, insurance, and region of facility did not predict for usage of SBRT + ADT. The most common SBRT doses were 35Gy (30.4%), 36.25Gy (48.5%), and 37.5Gy (8.5%). The median SBRT dose was 36.25Gy.

### Open Access

#### Abstract

Published 11/02/2017

### Copyright

© Copyright 2017

Lee et al. This is an open access article distributed under the terms of the Creative Commons Attribution License CC-BY 3.0., which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Distributed under

Creative Commons CC-BY 3.0

Conclusions: This is the largest study to date investigating ADT utilization with SBRT in prostate cancer. ADT usage with SBRT was considerably less than usage of ADT with EBRT for intermediate and high risk patients. As SBRT utilization continues to increase, prospective studies are needed to determine whether ADT can be omitted for the higher risk patients.