

## Effect of Aging and Long Term Erectile Function Following I-125 Prostate Brachytherapy

Mira Keyes <sup>1</sup>

1. Radiation Oncology, BC Cancer Agency, Vancouver Centre, University of British Columbia

✉ **Corresponding author:** Mira Keyes, mkeyes@bccancer.bc.ca

**Categories:** Radiation Oncology

**Keywords:** ldr prostate brachytherapy, erectile function, effects of aging

**How to cite this poster**

Keyes M (2014) Effect of Aging and Long Term Erectile Function Following I-125 Prostate Brachytherapy. *Cureus* 6(8): e.

### Abstract

**Purpose:** To evaluate long term post-treatment erectile function in men treated with iodine-125 permanent prostate brachytherapy and to determine factors predictive for erectile dysfunction (ED).

**Materials and Methods:** Of 3,811 patients treated with iodine-125 permanent prostate brachytherapy between July 1998 and June 2012, 2,929 had EF (erectile function) documented before and after treatment and >10 months follow-up. 2,312 (78.9%) patients had adequate EF pre-treatment (including 7.9% partial EF) and are included in the analysis. EF was assessed on a physician reported three-point scale; 1 - unimpaired erections, 2 - sub-optimal erections 3 - inadequate erections. Poisson regression with generalized estimating equations to account for repeated EF measures was used to assess the relationship between patient, clinical and treatment factors and EF K-M curves were generated to examine time to ED. The effect of aging on EF is calculated from the baseline EF for each age group of patients, prior to treatment, and additional analyses factoring in this effect is presented as well as factoring data from the Massachusetts male aging study.

**Results:** The median age at implant was 66 years (mean 65, range 39-85) and median follow-up 3.5 years (range 0.1-14.1); 39% (n=1142) of patients have >5 years follow up and 43% had received six months of androgen deprivation therapy (ADT). There is a recovery of EF after the implant from 41% at six weeks to 55% at 24 months. The five-year (n=493) and seven-year (n=246) actuarial rates of physician-documented potency preservation were 54% (CI 51.6,56.7) and 44% (CI 41.2,47.2). In patients aged <55, 56-59, 60-64, 65-69 and ≥70 years, the five-year rates of potency preservation were 82%; 73%; 58%; 39% and 23%. Comparisons of the age-related natural decline of EF and treatment-related decline of EF with five years follow-up is shown in the graph format for different age groups, with the control baseline group rate showing the aging effect. Estimation from the Massachusetts male aging study is also presented. On univariate and multivariate analysis, age at implant, length of follow up, hypertension diabetes and use of ADT (all p<0.01) were significant predictors of ED.

**Conclusions:** Young men have very favourable rates of long term potency preservation of over 80% with LDR brachytherapy. Age at treatment is highly predictive of long-term erectile preservation. Use of short-term ADT, history of hypertension and the natural decline in EF all have negative impact on long-term EF after prostate brachytherapy.

Open Access

Published 08/25/2014

Copyright

© Copyright 2014

Keyes. 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

