

Impact of LDR Prostate Brachytherapy on erectile function: a sub-group analysis of 417 patients with normal pre-treatment erectile function

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Introduction

Low dose rate (LDR) brachytherapy is an established treatment for localised low and intermediate risk prostate cancer.

Brachytherapy is considered to have a favourable side effect profile compared to radical prostatectomy. Erectile dysfunction (ED) is still common after brachytherapy and further understanding of this relationship would enable enhanced patient counselling.

Aim

To assess the incidence and severity of ED following LDR Brachytherapy monotherapy for prostate cancer in men with normal baseline function in a tertiary referral centre

Method

A retrospective observational cohort study was conducted. Patients who underwent LDR Brachytherapy as monotherapy in our institution between 2002 -2020 were included.

We interrogated our prospectively kept database to identify patients with normal erectile function, defined as IIEF-5 > 22 at baseline.

We analysed change in erectile function over time for up to 8 years (n87). Our primary outcome was mean difference between IIEF-5 score at baseline and at regular time intervals.

A secondary outcome was the proportion of patients in each IIEF-5 category at each timepoint: severe ED (<12), moderate ED (12-16), mild ED (17-21) and no ED (22-25).

Results

The median age of our cohort was 63 (40-84). We identified 1017 patients with baseline IIEF-5 scores recorded. Of these, 431 patients had IIEF-5 >22, with a mean score of 23.9.

During follow up the mean IIEF-5 score was 15, 14.3, 15.7, 15.9, 15.2, 15.1 and 15.2, at 6 weeks, 6 months, 1 year, 2 years, 3 years, 5 years and 8 years respectively.

A mean reduction of 8.9 was seen at 6 weeks, 9.6 at 6 months, and between 8 and 8.8 at each time point for up to 8 years. These results are illustrated in Table 1.

The proportion of men who maintained normal erectile function was 34.6% at 6 weeks, 25.6% at 6 months and between 29.2% and 34.5% for the remainder of the follow up period.

The proportion of men with severe ED was 34.35% at 6 weeks, 37.6% at 6 months, and between 28.9 to 31.5% for the remainder of the 8-year follow up. The proportion of men with varying degrees of ED is illustrated in Figure 1.

Timepoint	n	Mean difference in IIEF
6 weeks	329	-8.9
6 months	316	-9.6
Year 1	294	-8.2
Year 2	238	-8.0
Year 3	178	-8.6
Year 5	166	-8.9
Year 8	87	-8.8

Table 1 - differences between IIEF at baseline and at follow up

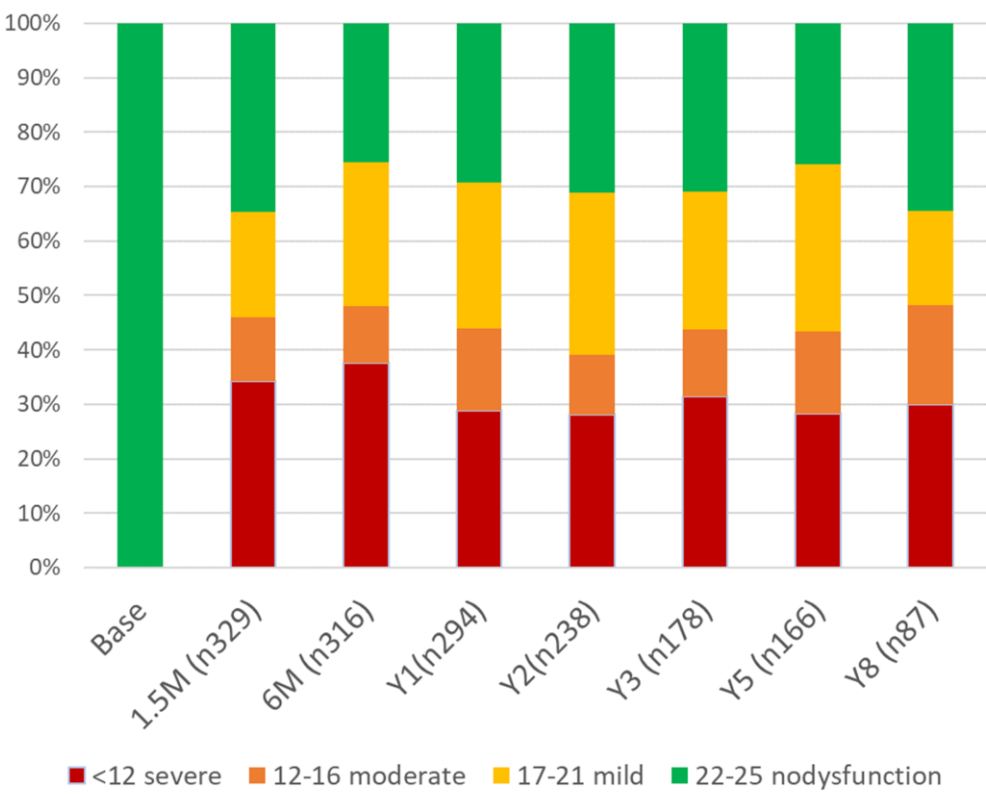


Figure 1 – Proportion of patients with ED over time

Conclusions

Patients who underwent LDR brachytherapy experienced an early decline in sexual function, which may be explained by the implantation procedure. There is a peak of dysfunction at 6 months, and a small degree of functional recovery at 1 year which does not change significantly for the remainder of the follow up period.

At 8 years, approximately half of men retained erectile function with only mild impairment or no impairment. Patients should be counselled accordingly.