

**LONG-TERM DISEASE FREE SURVIVAL IN PATIENTS UNDERGOING  
PERMANENT INTERSTITIAL PROSTATE BRACHYTHERAPY: THE CHICAGO  
EXPERIENCE**

*Brian J. Moran MD, Michelle H. Braccioforte BS, Michael A. Stutz MD, Dean J. Conterato  
MD and Jeffrey P. Shafer MD*

**Prostate Cancer Foundation of Chicago, Westmont, Illinois USA**

**Purpose:** Prostate brachytherapy (PB) continues to be an excellent treatment option for patients diagnosed with prostate cancer. This study reports prostate cancer disease free survival in a large cohort of patients treated at a single outpatient institution.

**Materials and Methods:** 12,908 patients were evaluated at a single out-patient institution between October 1997 and October 2008. 9,137 (70.8%) of these patients underwent interstitial permanent PB. Median patient age, total PSA and prostate volume were 68.9 years, 9.39 ng/ml, 48.8 cm<sup>3</sup>, respectively (Table 1). According to D'Amico risk stratification 67.5% of patients were low risk, 29.36% were intermediate risk and 1.01% were defined as high risk. 89.8% received PB as monotherapy, while 10.2% received a combination of external beam radiation therapy and PB. Regarding isotope use, 82.1% received I<sub>125</sub> (144 Gy) implant, 15.5% received Pd<sub>103</sub> (135 Gy) and 2.3% received Cs<sub>131</sub> (115 Gy). 70.3% of patients were hormone naïve, while 22.7% received LHRH agonist only and 6.8% underwent total neoadjuvant androgen blockade (TAB). Time to follow-up after undergoing PB ranged from 1 – 134 months (median 54.3 months). A pre-planned, pre-loaded implant technique was used on all patients.

**Results:** Overall PSA disease free survival, as defined by the Phoenix definition of nadir + 2 ng/ml was 96%, 84% and 75% for low, intermediate and high risk patients, respectively (Figure

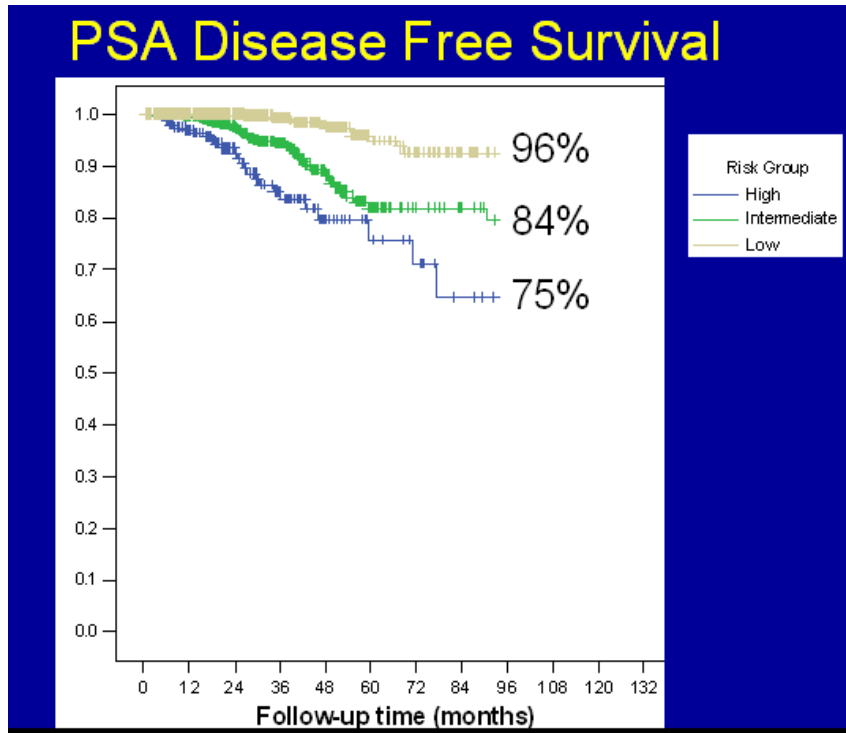
1). In low-risk patients, there was no significant difference for patients that received androgen deprivation therapy (p=0.5235) (Figure 2). Both intermediate and high risk patients demonstrated significantly better outcomes when a combination approach using external beam radiation therapy was utilized (p=0.0381 and p=0.05, respectively) (Figures 3 and 4).

**Conclusions:** PB is efficacious for the treatment of prostate cancer and should be offered to all patients desiring effective, yet minimally invasive treatment modalities for prostate cancer. Further analyses of this patient population stratified by characteristics such as Gleason score, PSA kinetics and volume of disease will contribute to a better understanding of long-term outcomes of various subsets of patients.

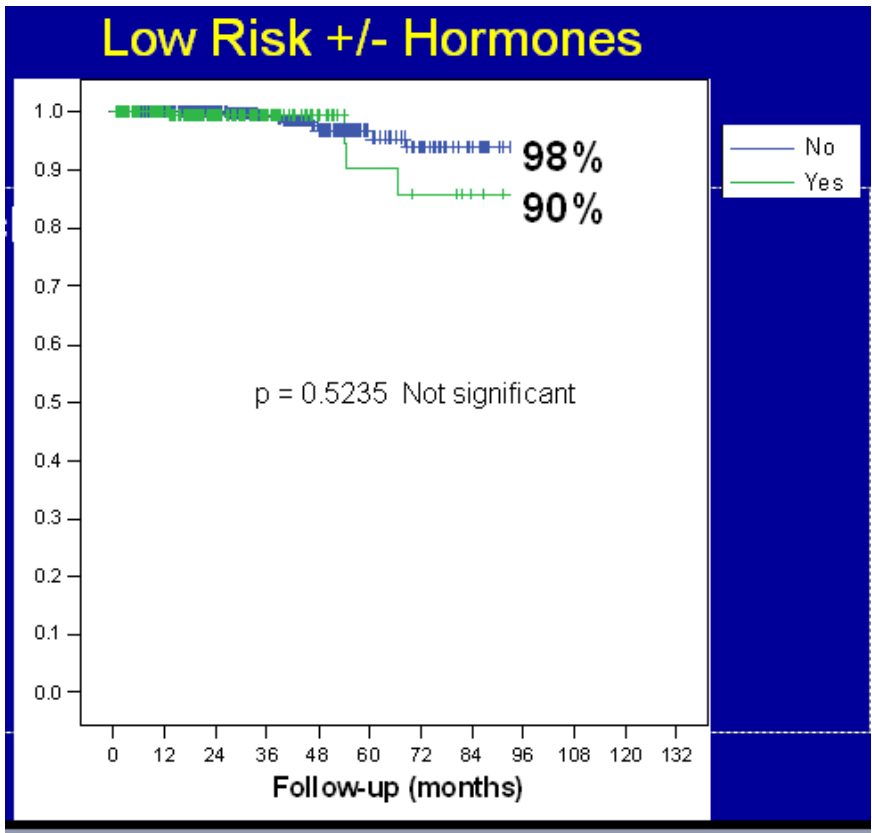
**Table 1: Patient Characteristics**

|                                | <b>MEAN ±<br/>SD</b> | <b>MEDIAN</b> | <b>RANGE</b> |
|--------------------------------|----------------------|---------------|--------------|
| <b>Age (years)</b>             | 68.9 ± 7.6           | 69.7          | 40.55 – 92.6 |
| <b>PSA (ng/ml)</b>             | 9.39 ± 10.6          | 7.34          | 0.1 - 505    |
| <b>Volume (cm<sup>3</sup>)</b> | 48.8 ± 16.9          | 46.6          | 9 – 117      |
| <b>IPSS Score</b>              | 7.79 ± 6.14          | 6.0           | 0 – 35       |
| <b>Follow-up Time (months)</b> | 57.82 ± 36.64        | 54.25         | 1 – 134.1    |

*Figure 1: Overall Risk Groups*



*Figure 2: Low Risk ± Androgen Deprivation Therapy*



*Figure 3: Intermediate Risk Group ± XRT*

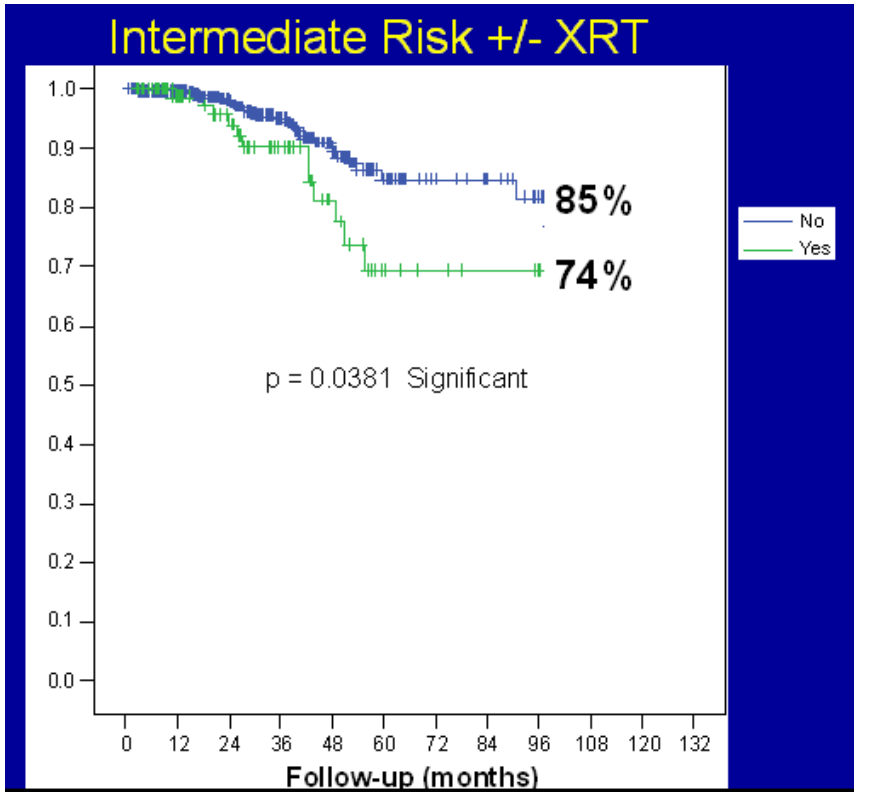


Figure 4: High Risk Group  $\pm$  XRT

