

## **ONE YEAR RESULTS OF IODINE-125 VS. CESIUM-131 PROSPECTIVE RANDOMIZED TRIAL ON URINARY FUNCTION FOLLOWING BRACHYTHERAPY**

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**Purpose/Objectives:** Cesium-131 (Cs-131) has been available for the treatment of early stage prostate cancer using permanent interstitial prostate brachytherapy since 2004. This analysis describes pre and post-treatment urinary function/bother as estimated by repeat Expanded Prostate Cancer Index Composite (EPIC) surveys following I-125 and Cs-131 monotherapy.

**Methodology:** 142 patients were prospectively randomized on an I-125 (n=71) vs. Cs-131 (n=71) monotherapy protocol evaluating acute and long term urinary morbidity as measured by the EPIC survey. Prostate target volume prescription dose was 144 Gy for I-125 and 115 Gy for Cs-131. EPIC scores range from 0-100, with higher scores representing better outcomes. Eligibility criteria included low to intermediate risk prostate cancer (Stage T1/T2 prostate cancer, PSA <20 ng/ml and Gleason 7 or less), International Prostate Symptom Score (IPSS)  $\leq$  15, age  $\leq$  70 years, prostate volume  $\leq$  60 cm<sup>3</sup> and no androgen deprivation therapy or external beam radiation. Median IPSS, patient age, PSA and prostate volume were 5 (range 0 – 15), 62.1 years (range 44.5 - 70 years), 5.5 ng/ml (range 0.68 - 20 ng/ml) and 46.25 cm<sup>3</sup> (range 19.5 – 60 cm<sup>3</sup>), respectively.

**Results:** At least 52 patients have complete baseline, 2 month, 6 month and 1 year EPIC urinary quality of life (QOL) scores (Table 1). Both patient groups demonstrated slight decreases in EPIC score at 2 months, with a trend toward resolution by 6 months. There were no statistically significant differences at any time point between the two isotopes.

### **Conclusion:**

Randomized data from our institution reveal similar urinary function/bother symptoms between I-125 and Cs-131 as measured by the EPIC QOL instrument at 2, 6 and 12 months. Continued follow-up of patients on this protocol will evaluate differences in urinary morbidity between the two isotopes.

**Table 1: EPIC Urinary Quality of Life Scores**

	<b>Follow-up</b>	<b>Isotope</b>	<b>n</b>	<b>mean ± SD</b>	<b>p-value</b>
<b>Urinary</b>	Pre-Implant	I <sup>125</sup>	28	94.85 ± 5.65	0.716
		Cs <sup>131</sup>	27	96.02 ± 15.93	
	2 Months	I <sup>125</sup>	28	76.45 ± 15.88	0.224
		Cs <sup>131</sup>	27	70.74 ± 18.42	
	6 Months	I <sup>125</sup>	28	85.18 ± 12.46	0.559
		Cs <sup>131</sup>	27	83.09 ± 13.86	
	12 Months	I <sup>125</sup>	28	89.17 ± 10.31	0.126
		Cs <sup>131</sup>	27	84.14 ± 13.55	