**Quality of Life Outcomes: ASCENDE-RT a Multicenter Randomized Trial of Radiation Therapy for Prostate Cancer**

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**Purpose/Objective(s):** The objective of this study is to report health related quality of life outcomes (HQOL) in a phase three randomized trial evaluating the safety and efficacy of two different techniques for dose escalation.

**Materials/Methods:** Three hundred fifty-seven men with NCCN intermediate risk or high risk localized prostate cancer were accrued at 6 centers, stratified by risk group and randomized to one of two treatment arms. Both arms received 12 months of androgen deprivation therapy, 8 months of which was given prior to starting whole pelvic irradiation (46 Gy/23/fr). Patients randomized to dose escalated external beam arm (DE- EBRT, N = 180) continued with a 3-D conformal boost to the prostate 32 Gy/16fr. Patients randomized to low dose rate prostate brachytherapy arm (LDR-PB, N = 177) had a 125 Iodine implant (MPD = 115 Gy). There were 12 cross over events and 12 received neither protocol interventions. Patient reported quality of life using SF36 questionnaire was collected prospectively. It has items on physical function, role physical, bodily pain, general health, vitality, social functioning, emotional and mental health. Furthermore we added 4 items for urinary function, 4 for bowel, and 6 for sexual function. Scales were scored from 0 to 100. Based on the participant scores for each domain, mean scores were obtained for both groups. Follow up time for quality of life study was calculated from 4 months from the start of LHRH agonist injections. The primary end point of the trial was disease free survival. Results will be presented based on intent to treat analysis. Longitudinal analysis of the results was performed using area under the curve (AUC) methodology. Cross sectional outcomes at 2 and 5 years as well as frequency of clinically significant changes for patients are also being analyzed.

**Results:** The median follow up was 6.5 years. Overall questionnaire compliance was in the range of 84%e94%. The incidence of PSA relapse for LDR-PB was less than half that seen with DE-EBRT HR Z 0.49 (P = 0.004). Mean domain scores at base line were well balanced between two treatment arms. Difference in the AUC scores favored DE-EBRT over LDR-PB for bodily pain (P = 0.04), general health (P = 0.01), sexual function (P = 0.02), and urinary function (P = 0.006). There was no difference in the Hqol between two arms for other domains.

**Conclusion:** LDR-PB arm is associated with improved progression free survival when compared to DE-EBRT. However, this treatment arm is associated with negative Hqol effects for urinary and sexual function, general health, and bodily pain. The clinical magnitude and timeline of these effects will be shown.