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## 2831

### Association between National Area Deprivation Index Rank on Disease Characteristics in Prostate Cancer

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**Purpose/Objective(s):** Social determinants of health (SDH) play a large role in an individual's health; in recent years, there has been a push to examine the impact of one's neighborhood or "place." Previous studies have showed that living in a disadvantage neighborhood is associated with worth health outcomes. We hypothesize that equal access care will diminish the effects of living in a disadvantaged neighborhood.

**Materials/Methods:** We identified non-Hispanic African American (AA) and White (NHW) men diagnosed with PC between 2012 and 2015 in the Veterans Health Administration (VHA). Patient SDH was measured using census tract level 2015 Area Deprivation Index (ADI) information. The ADI is a composite measure that includes factor such as housing quality, income, health care access etc. We measured both National and State ADI rank as a continuous variable from 1 to 10 with 10 being highest deprivation. Patient information was gathered at the census tract level while ADI is assigned at the census block group. In order to get all information on the same geographic level, we averaged the ADI to its corresponding census tract. Associations between ADI and disease characteristics at diagnosis were measured using multivariable logistic regression models including age, race, and marital status as covariates.

**Results:** The final cohort was composed of 25,222 men (8,384 AA and 16,838 NHW.) At the national level, there was no significant association between ADI and Gleason Score ≥8 (Odds Rations (OR) 0.99 [95% Confidence Interval (CI):0.98 − 1.00]), PSA >20 ng/mL (OR 0.99 [95% CI: 0.98 − 1.01]), and metastasis at diagnosis (OR 1.01 [CI: 0.98-1.04]).

**Conclusion:** Our results are consistent with our hypothesis that equal access care diminishes the impacts of living within a disadvantaged neighborhood. Future research should investigate the interaction between health care access and social and demographic factors.

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## 2832

### Androgen Deprivation Therapy Use among Intermediate Risk Prostate Cancer Patients Undergoing Radiation Therapy across a Statewide Radiation Oncology Quality Consortium

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**Purpose/Objective(s):** For men with intermediate (INT) risk prostate cancer, the addition of androgen deprivation therapy (ADT) reduces risk of PSA failure, distant metastasis, and cancer-related mortality. Moreover, the relative reduction in cancer-related adverse outcomes with ADT use appears consistent across all INT risk subgroups. The absolute benefit of ADT, however, varies by baseline risk. In contemporary practice, it is unknown which clinical factors are most strongly associated with intended ADT use. Therefore, we sought to identify such factors within the diverse practices of the Michigan Radiation Oncology Quality Consortium (MROQC).

**Materials/Methods:** Patients with localized prostate cancer undergoing definitive radiation therapy were enrolled from 6/9/20 to 11/4/22 (n = 599). Standardized patient, physician, and physicist forms were used to collect baseline and follow-up information. Intended ADT use, defined by the treating physician, was prospectively collected and is the primary outcome of this analysis. Univariable (UVA) and multivariable analyses (MVA) associations with patient (age, race, comorbidities), tumor (T stage, Gleason, percent cores positive, and PSA), and practice-related (academic vs private) factors were performed. In addition, advanced modality testing (PET, MRI, and genomic classifiers) was available as of March 2021, and subgroup analysis were performed where appropriate.

**Results:** A total 351 patients across 26 centers were enrolled with INT risk disease. ADT use was intended for 46% of men (n = 162/351) which differed by men with NCCN favorable INT (21%, n = 22/105) vs unfavorable INT risk disease (57%, n = 140/246), p<0.001. Sixty two percent (n = 100/162) had an intended ADT duration of 4-6 months and 21% (n = 34/162) had ≥12 months. Older age was associated with ADT use (70 vs 67, p < 0.01); there were no significant differences by race or comorbidities number. MVA showed Gleason 4+3 (OR 4.61 [2.91 − 7.42]) and > = 50% positive cores (2.56 [1.52 − 4.37]) were significantly associated with ADT use. No significant differences were noted based on practice setting. Pelvic MRI was obtained for 71% of men (n = 197/279), genomic classifiers in 47% (n = 130/279), and PET in 2% (n = 6/282). In the subset with MRI (n = 197), adverse features (ECE, SVI, or equivocal LNs) were associated with intended ADT use (OR 3.0 [1.4 - 7.1]) after adjustment for NCCN favorable/unfavorable INT risk classification.

**Conclusion:** Within a state-wide consortium, intended ADT use for intermediate prostate cancer is most strongly associated with Gleason score, ≥50% positive cores, NCCN unfavorable intermediate risk classification, and adverse features on MRI. Nearly half of men had genomic classifier testing underscoring the importance ongoing trials such as NRG/GU 010.

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## 2833

### Impact of Prostate Cancer Treatment with Low Dose Rate Brachytherapy on Testosterone: A Retrospective Analysis

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**Purpose/Objective(s):** Decrease in serum testosterone counts have been reported in the literature following external beam radiotherapy (EBRT), with a suggested association to low dose irradiation of the testes occurring with historical and modern external techniques. Low dose rate (LDR) brachytherapy has been described as exposing the testes to between 2 and 19 cGy compared with 196-220 cGy with EBRT. This decrease in excess dose is hypothesized to spare post-treatment testosterone decrease and subsequent change in patient-perceived quality of life. Here, we retrospectively evaluate LDR-treated prostate cancer patient testosterone change in a single-institution patient cohort.

**Materials/Methods:** Patients with prostate cancer who had previously received LDR brachytherapy were identified, and patients with prior baseline total testosterone lab values as well as a lab value within one year post-treatment were identified. Patients receiving concurrent androgen deprivation therapy or EBRT were excluded. The closest baseline values prior to and after LDR treatment were used for before/after comparison. Samples were compared using the paired t-test.

**Results:** A total of 1,463 patients receiving LDR were identified with data available for analysis between 1998 and 2023; of these, 139 patients met the above criteria for analysis. Mean age was 66 (median 67; range: 47 - 79). 5 patients received 110 Gy, 2 received 120 Gy, and the remainder 145 Gy, all conducted with I-125. Total mCi delivered ranged from 20.3 mCi to 56.7 mCi (median 37.6 mCi). Approximately 57% were GS6, 42% G7, and < 1% G8. Approximately 80% of patients had T1c disease, with 19% T2 and < 1% T3a. All patients were cN0M0. Mean pre- and post-treatment testosterone were 385.5 ng/dL and 382.9 (SD: 170.9, 150.9; mean difference 2.65 [95% CI: -15.6, 20.9]), respectively, with no statistical change noted ($p = 0.774$).

**Conclusion:** Testosterone levels have been reported to drop following definitive EBRT owing to excess dose delivery to the testes. On review of our institutional experience in definitive LDR brachytherapy for patients treated without ADT administration, no change in testosterone levels were noted.

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## 2834

### Increasing Use of Conservative Management of Low-Risk Prostate Cancer in the Veterans Affairs System from 2012 to 2021

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**Purpose/Objective(s):** Conservative management (CM), including either active surveillance or watchful waiting, is the preferred management strategy for men with low-risk prostate cancer. We sought to describe contemporary trends in CM among men with localized prostate cancer across the equal-access Veterans Affairs (VA) system.

**Materials/Methods:** Using VA tumor registry data, we identified all men with a new diagnosis of biopsy-proven, clinically node-negative, non-metastatic prostatic adenocarcinoma from 2012 to 2021, excluding men with missing National Comprehensive Cancer Network risk group. We quantified the yearly proportion of patients with low and favorable intermediate-risk (FIR) prostate cancer undergoing conservative management and examined age-specific rates. Multivariable logistic regression was used to identify independent clinical predictors of CM among men with low-risk and FIR disease.

**Results:** The cohort included 86,415 patients with localized prostate cancer, of whom 20,290 (23.5%) had low risk and 25,447 (29.5%) had FIR disease. The proportion of men diagnosed with low-risk disease decreased from 27.7% in 2012 to 20.1% in 2021. The proportion of men with localized prostate cancer who were 70 years or older at diagnosis increased from 19.5% in 2012 to 46.4% in 2021, with similar increases seen across risk groups. The proportion of men with low-risk disease undergoing CM increased from 63.1% in 2012 to 86.6% in 2021. CM rates in 2021 among low-risk patients were largely consistent across age groups (50-59: 85.1%; 60-69: 87.4%; 70+: 86.3%). For FIR patients, CM rates increased among the subset with Gleason 6 disease (49.5% in 2012 to 80.7% in 2021). In multivariable models, independent predictors of CM in low-risk patients included older age, more recent year, lower PSA at diagnosis, North Atlantic or Pacific region, and presence of another cancer at diagnosis; similar predictors were found in FIR patients. Self-reported race (Black, White, or Other) was not associated with CM. While there was wide geographic variation in CM rates among low-risk patients early in the study period (2012-2014: 56.1% in Southeast region vs 74.1% in Pacific), these disparities resolved in recent years (2019-2021: 83.2% in Southeast vs 83.8% in Pacific).

**Conclusion:** Rates of conservative management for localized prostate cancer increased dramatically over time in the VA, with over 85% of low-risk patients managed conservatively in 2021. Recent years showed no differences in CM rates by self-reported race, geographic region, or age group. Despite this progress, we observed a concomitant increase in the proportion of men 70 years or older diagnosed with localized prostate cancer, including low risk disease. This raises a need to consider strategies to reduce the diagnosis of low-risk disease in elderly Veterans.

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## 2835

### Impact of Severe Weather on Operations of a Radiation Oncology Department

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**Purpose/Objective(s):** In 2022, two major storms in Western New York brought blizzard conditions and historic snowfall amounts to the region. Beyond the immediate impact to life and property, these weather events resulted in disruptions to cancer care as a result of hazardous travel conditions, and facility closures as a result of regional travel bans. We sought to understand the impact of these disruptive incidents on departmental operations to develop better contingency plans for future occurrences.

**Materials/Methods:** The radiation treatment machine schedules for a large academic center in Western New York, as well as a neighboring