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CLINICAL INVESTIGATION

Variation in Androgen Deprivation Therapy Use Among Men With Intermediate-Risk Prostate Cancer: Results From a Statewide Radiation Oncology Quality Consortium

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Purpose: For men with intermediate-risk prostate cancer treated with definitive therapy, the addition of androgen deprivation therapy (ADT) reduces the risk of distant metastasis and cancer-related mortality. However, the absolute benefit of ADT varies by baseline cancer risk. Estimates of prognosis have improved over time, and little is known about ADT decision making in the modern era. We sought to characterize variability and identify factors associated with intended ADT use within the Michigan Radiation Oncology Quality Consoritum (MROQC).

Materials and Methods: Patients with localized prostate cancer undergoing definitive radiation therapy were enrolled from June 9, 2020, to June 26, 2023 (n = 815). Prospective data were collected using standardized patient, physician, and physicist forms. Intended ADT use was prospectively defined and was the primary outcome. Associations with patient, tumor, and practice-related factors were tested with multivariable analyses. Random intercept modeling was used to estimate facility-level variability.

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Results: Five hundred seventy patients across 26 facilities were enrolled with intermediate-risk disease. ADT was intended for 46% of men (n = 262/570), which differed by National Comprehensive Cancer Network favorable intermediate-risk (23.5%, n = 38/172) versus unfavorable intermediate-risk disease (56.3%, n = 224/398; $P < .001$). After adjusting for the statewide case mix, the predicted probability of intended ADT use varied significantly across facilities, ranging from 15.4% (95% CI, 5.4%-37.0%) to 71.7% (95% CI, 57.0%-82.9%), with $P < .01$. Multivariable analyses showed that grade group 3 (OR, 4.60 [3.20-6.67]), ≥50% positive cores (OR, 2.15 [1.43-3.25]), and prostate-specific antigen 10 to 20 (OR, 1.87 [1.24-2.84]) were associated with ADT use. Area under the curve was improved when incorporating MRI adverse features (0.76) or radiation treatment variables (0.76), but there remained significant facility-level heterogeneity in all models evaluated ($P < .05$).

Conclusions: Within a state-wide consortium, there is substantial facility-level heterogeneity in intended ADT use for men with intermediate-risk prostate cancer. Future efforts are necessary to identify patients who will benefit most from ADT and to develop strategies to standardize appropriate use.

Introduction

For men with intermediate-risk prostate cancer,[1] the addition of androgen deprivation therapy (ADT) to radiation therapy decreases risk of distant metastasis (DM) and prostate cancer −specific mortality (PCSM).[2-5] However, the trials that showed improved overall survival (OS) outcomes with the addition of ADT were conducted before recent advancements in imaging, updates to Gleason grading, and improvements in radiation therapy delivery.[6-8] Uncertainties, therefore, remain regarding the overall benefit of the addition of ADT with modern diagnostic tools and therapeutic techniques.

Using standard clinical features, men with intermediate-risk prostate cancer have a similar relative benefit from ADT. The absolute benefit, however, depends on tumor aggressiveness.[9,10] For healthy men, current guidelines recommend radiation therapy alone for men with favorable intermediate-risk prostate cancer (FIR) and radiation therapy with short-term ADT for men with unfavorable intermediate-risk prostate cancer (UIR).

Although there are oncologic benefits of ADT, it can also lead to various short- and long-term toxicities that may influence the decision-making process for providers and patients.[11-14] Decisions about ADT use are often individualized based on patient values, preferences, and competing risks. Opportunities exist both for treatment de-escalation for those at lower risk of DM or PCSM and for intensification in men with higher absolute cancer risk.[15,16]

Historically, ADT use in practice has been variable across and within risk stratification groups. In contemporary practice, however, little is known about the factors influencing intended ADT use or about practice heterogeneity within and between centers. We sought to identify such factors and quantify facility-level variation within the diverse practices of the Michigan Radiation Oncology Quality Consortium (MROQC).

Methods

Data collection

MROQC is a multicenter, statewide collaborative quality initiative among 26 academic and community practice treatment sites in partnership with Blue Cross Blue Shield of Michigan (BCBSM). It is exempt from institutional review board review as a quality improvement initiative. [MROQC represents approximately 60% of the radiation oncology volume in the state and is financially supported by BCBSM and the Blue Care Network of Michigan as part of the BCBSM Value Partnerships Program. Through the combined efforts of radiation oncologists, physicists, data abstractors, and administrators, MROQC maintains a prospectively collected database containing deidentified patient-level demographic, clinical, treatment, and dosimetric data in addition to physician-assessed toxicity and patient-reported outcomes. This database is linked with the Michigan Urological Surgery Improvement Collaborative (MUSIC) database, which collects additional patient, tumor, and facility-level information in urological offices throughout the state.

Patient, tumor, and treatment variables

Eligible patients included those being treated with definitive radiation therapy for prostate cancer at MROQC-participating institutions from June 9, 2020, to June 26, 2023. Patients with nodal or DM based on diagnostic imaging were excluded from this analysis.

Clinical information including age, self-reported race, and Charlson comorbidity index were collected.[17] Tumor category, grade group, prostate-specific antigen (PSA), and percent positive biopsy cores were also collected. National Comprehensive Cancer Network (NCCN) risk groups were calculated, and STAR-CAP stage[18] was determined. Use of advanced modalities (PET, MRI, and genomic classifiers) was available starting in March 2021.

Radiation therapy treatment was defined as follows: (1) fractionated external beam radiation therapy (EBRT) defined as ≥20 fractions; (2) combination therapy defined as EBRT plus low-dose-rate or high-dose-rate brachytherapy; or (3) ultrahypofractionated radiation therapy defined as 5 to 7 fraction stereotactic body radiation therapy or brachy monotherapy. Conventional fractionation and moderate hypofractionation schedules were combined because associations with ADT were similar. Elective nodal irradiation (yes/no) and practice type (academic vs private) were

also defined. Dose escalation was defined as at least 74 Gy equivalent dose in 2 Gy fractions (EQD2) with $\alpha/\beta = 1.5$.

Statistical analysis

The primary binary outcome was intended ADT use (also referred to as prescribed). Providers specified intended ADT use as "Yes" or "No." If the response was "Yes," the provider then detailed the intended ADT type, sequencing, and duration, all of which were prospectively captured within MROQC.

Univariable (UVA) and multivariable analysis (MVA) associations with patient (age, race, Charlson comorbidity score) and tumor (T category, grade group, percent cores positive, and PSA) factors were performed in the primary analysis. Association between intended ADT use and NCCN and STAR-CAP[18] staging systems was calculated. In comorbidity sensitivity analysis, Charlson comorbidity score was replaced with number of severe cardiovascular comorbidities defined as myocardial infarction, congestive heart failure, peripheral vascular disease, cerebrovascular disease, or diabetes with organ damage (cardiac composite score).

Variable selection was performed using a stepwise procedure with a *P* value threshold of .05. A mixed model with a random intercept for hospital was used to test for significant facility-level variation. For patients enrolled after March 2021 who had undergone an MRI (n = 305), MRI adverse features were defined as definite extraprostatic extension (EPE) or seminal vesicle invasion (SVI) per the treating physician. The MVA of the MRI subset used the same variables as the primary model with the addition of MRI adverse features.

Associations between radiation treatment-related variables and intended ADT use were then assessed while adjusting for significant patient and tumor characteristics. MVA variable selection was performed using a stepwise procedure with a *P* value threshold of .05 for the whole cohort. MVA using the same variables determined by variable selection above was repeated with random intercept model for facility.

Area under the curve (AUC) was calculated for all multivariable models. A caterpillar plot was also generated to display the estimated ADT use rates for each site if that site had treated the entire cohort. To do this, we used the mixed model from the primary analysis to estimate patient-level ADT use probabilities separately for each site and then averaged these probabilities across the entire patient cohort. SAS 14.2 was used for all analyses.

Results

A total of 815 men with non-metastatic prostate cancer were enrolled, 570 of whom had intermediate-risk disease (Table 1). Most patients were diagnosed with UIR (n=398, 69.8%), with the remaining having FIR (n = 172, 30.2%).. Multiparametric MRI was used in 67.1% of cases (n = 305/454). EPE was identified in 50 patients, and SVI was present in 8 patients, with a total of 52 patients (17.0%) having at least 1 adverse feature. Genomic classifiers were used in 46.9% (n = 213/454) of patients. PET use as part of initial workup was 4.5% (n = 21/458).

Overall, 46.0% (n = 262/570) of men were prescribed ADT. Specifically, 23.5% (n = 38/172) of men with FIR and 56.3% (n = 224/398) of men with UIR were prescribed ADT ($P < .001$). Among the patients in the FIR group who were prescribed ADT, 5.3% (n = 2/38) had MRI adverse features and 26.3% (n = 10/38) underwent genomic testing. Among those with a specified ADT duration, 72.1% (n = 150/208) were scheduled to receive ADT for 4 to 6 months (Table E1). ADT prescriptions included a neoadjuvant component in 79.2% (n = 195/246) of men, a concurrent component in 74.0% (n = 182/246), and an adjuvant component in 55.7% (n = 137/246).

In UVA, intended ADT use was associated with grade group 3, >50% positive biopsy cores, PSA ≥10 ng/mL, older age, and ≥2 versus 0 comorbidities (Table 1). Older patients were more likely to have UIR, ranging from 62.5% in men aged ≤59 years to 88.5% in men aged ≥80 years (Table E2). Patients with UIR and higher STAR-CAP stage were also more likely to be prescribed ADT ($P < .001$, Table 1). There was no association between intended ADT use and cardiac composite score (Table E3).

There was substantial variation by facility with large differences in the percent of patients prescribed ADT in the whole cohort (Fig. 1A) and when stratified by FIR and UIR (Fig. 1B). Intended ADT use ranged from 0% to 100% for FIR and from 12.5% to 100% for UIR. In MVA, grade group 3, ≥50% positive biopsy cores, and PSA 10 to 20 ng/mL were significantly associated with intended ADT use (Table 2). Among the subset of patients with MRI data available (n = 305), MVA showed that intended ADT use was significantly associated with presence versus absence of MRI adverse features (EPE or SVI) (Table 2).

There was significant heterogeneity in ADT use between centers after adjusting for grade group, PSA, and positive biopsy cores (*P* value for facility level term in mixed model = .032; Table E4). The model predicted probability of ADT use for each site if that site had treated the entire cohort significantly varied from 15.4% (95% CI, 5.4%-37.0%) to 71.7% (95% CI, 57.0%-82.9%) ($P < .01$, [Fig. 1C]). The AUC for the MVA model using patient and tumor factors was 0.73 (95% CI, 0.69-0.77; Table 2), which increased to 0.79 (95% CI, 0.75-0.83; Table E4) when a facility-level term was included. AUC was higher in the MRI subset models (0.76 and 0.83 without and with facility level, respectively).

Nearly all patients were treated with dose-escalated radiation therapy (97.9%, n = 551/563) (Table 3). The most common radiation therapy regimen was fractionated radiation therapy (49.7%, n = 282/568), followed by combination radiation therapy (28.7%, n = 163/568) and ultrahypofractionated radiation therapy (21.7%, n = 123/568).

Table 1 Univariable analysis for ADT use

	All	No ADT	ADT	OR (95% CI)	*P* value
No. of patients	570	308	262		
Age (y)					
≤59	64 (11.2%)	45 (14.6%)	19 (7.3%)	Reference	.020
60-69	245 (43%)	134 (43.5%)	111 (42.4%)	1.96 (1.10-3.61)	
70-79	235 (41.2%)	118 (38.3%)	117 (44.7%)	2.35 (1.31-4.33)	
80+	26 (4.6%)	11 (3.6%)	15 (5.7%)	3.23 (1.27-8.50)	
Race					0.61
White	422 (74.0%)	226 (73.4%)	196 (74.8%)	Reference	Reference
Black	116 (20.4%)	62 (20.1%)	54 (20.6%)	1.00 (0.66-1.52)	
Other	32 (5.6%)	20 (6.5%)	12 (4.6%)	0.69 (0.32-1.43)	
Ethnicity					.23
Unknown	4	3	1		
Non-Hispanic	509 (89.9%)	270 (88.5%)	239 (91.2%)	Reference	
Hispanic	57 (10.1%)	35 (11.4%)	22 (8.4%)	0.71 (0.40-1.24)	
Comorbidity number					
0	374 (65.6%)	212 (68.8%)	162 (61.8%)	Reference	Reference
1	107 (18.8%)	57 (18.5%)	50 (19.1%)	1.15 (0.74-1.77)	.53
2+	89 (15.6%)	39 (12.7%)	50 (19.1%)	1.68 (1.05-2.69)	.03
Grade group					
1 (Gleason 3 + 3)	21 (3.7%)	13 (4.2%)	8 (3.1%)	Reference	Reference
2 (Gleason 3 + 4)	316 (55.4%)	219 (71.1%)	97 (37.0%)	0.72 (0.29-1.87)	.48
3 (Gleason 4 + 3)	233 (40.9%)	76 (24.7%)	157 (59.9%)	3.36 (1.36-8.81)	.01
Percent positive cores					
<50%	419 (73.5%)	246 (79.9%)	173 (66.0%)	Reference	Reference
≥50%	151 (26.5%)	62 (20.1%)	89 (34.0%)	2.05 (1.41-2.98)	<.001
PSA					
0-10	424 (74.4%)	245 (79.5%)	179 (68.3%)	Reference	Reference
10-20	146 (25.6%)	63 (20.5%)	83 (31.7%)	1.80 (1.24-2.64)	.002
T stage					
Missing	2	0	2		
T1	479 (84.3%)	263 (85.4%)	216 (83.1%)	Reference	Reference
T2	89 (15.7%)	45 (14.6%)	44 (16.9%)	1.19 (0.76-1.87)	.45
NCCN risk group					
Favorable	172 (30.2%)	134 (43.5%)	38 (14.5%)	Reference	Reference
Unfavorable	398 (69.8%)	174 (56.5%)	224 (85.5%)	4.54 (3.04-6.92)	<.001
STAR-CAP stage					
Missing	4				
IB/IC	164 (29.0%)	129 (42.0%)	35 (13.5%)	Reference	Reference
IIA	204 (36.0%)	109 (35.5%)	95 (36.7%)	3.21 (2.04-5.16)	<.001
IIB	145 (25.6%)	54 (17.6%)	91 (35.1%)	6.21 (3.79-10.38)	<.001
IIC/IIIA/IIIB	53 (9.4%)	15 (4.9%)	38 (14.7%)	9.34 (4.70-19.38)	<.001

Abbreviations: OR = odds ratio, ADT = androgen deprivation therapy; NCCN = National Comprehensive Cancer Network; PSA = prostate-specific antigen.

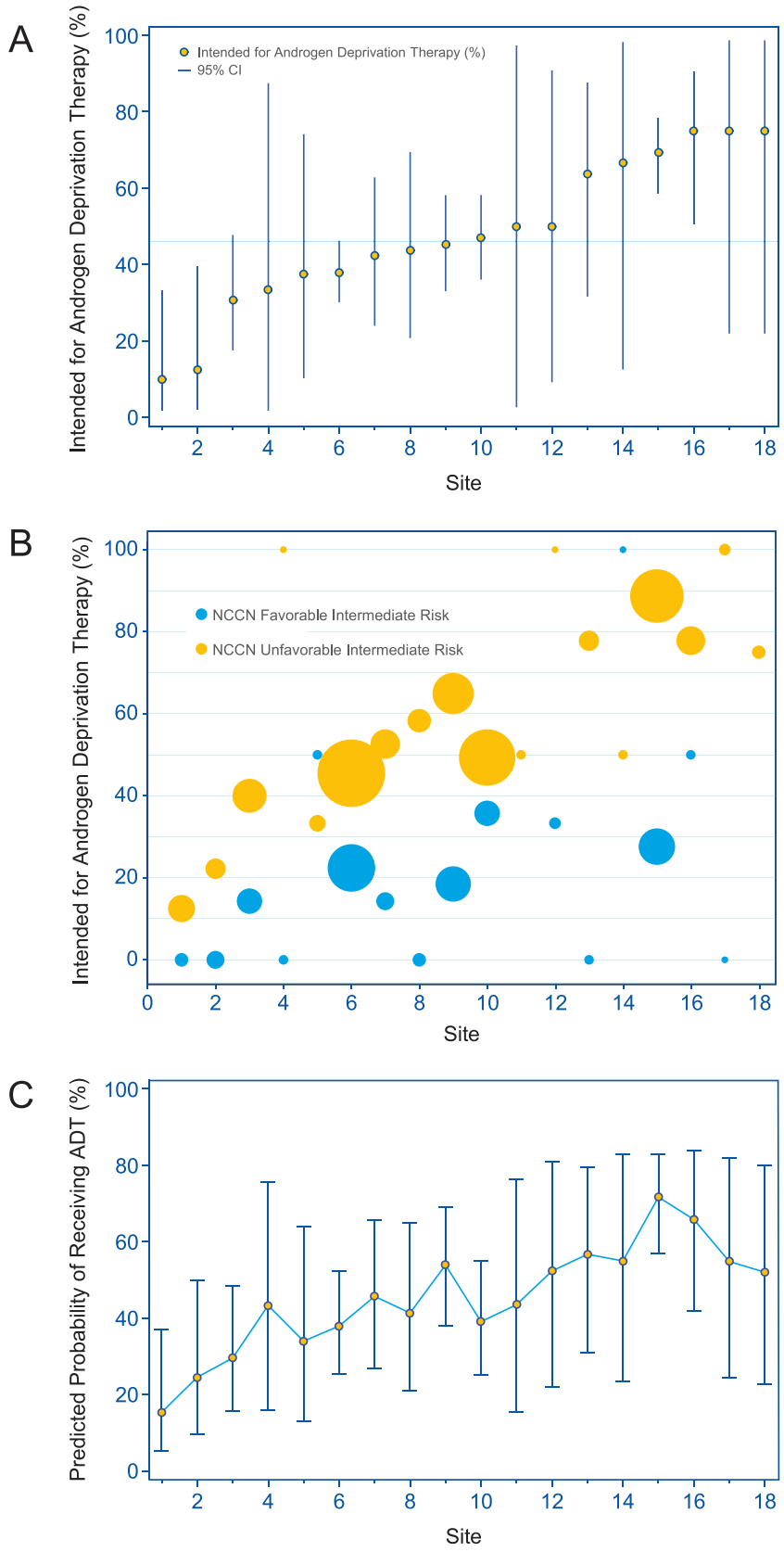

Fig. 1. Facility-level variability[a]. (A) Percent androgen deprivation therapy (ADT) use by facility, with 95% CIs. (B) Percent ADT use by facility, stratified by the National Comprehensive Cancer Network (NCCN) risk group[b]. (C) Predicted probability of receiving ADT by site. This caterpillar plot generated using estimated fixed effect parameters and estimated random hospital effects from the multivariable models to calculate the predicted probabilities and 95% CIs of ADT use by facility by using the

Table 2 Multivariable models based on patient and tumor variables

Patient and tumor variables								
	Whole cohort (n = 569)				MRI subset (n = 305)			
Variable	OR	LCL	UCL	*P* value	OR	LCL	UCL	*P* value
Grade group 3 vs 2/1	4.60	3.20	6.67	<.0001	5.48	3.23	9.52	<.0001
≥50% vs <50% positive biopsy cores	2.15	1.43	3.25	.0002	2.99	1.68	5.43	.0003
PSA 10-20 vs 0-10	1.87	1.24	2.84	.0029	1.64	0.90	3.00	.11
MRI adverse features vs no adverse features	-	-	-	-	2.65	1.33	5.47	.0066
	AUC: 0.73 (0.69-0.77)				AUC: 0.76 (0.71-0.82)			

Abbreviations: LCL = lower confidence level; OR = odds ratio; PSA = prostate-specific antigen; UCL = upper confidence level, AUC = are under the curve.

Table 4 shows the MVA including treatment characteristics. Ultrahypofractionated radiation therapy was associated with less prescribed ADT, whereas elective nodal irradiation was associated with more prescribed ADT. After inclusion of these treatment variables, facility-level heterogeneity remained statistically significant (P = .02). AUC for the model without facility level was 0.76 (95% CI, 0.72-0.79; Table 4) and increased to 0.82 (95% CI, 0.78-0.85; Table E5) with facility level.

Discussion

Using prospectively collected data from a state-wide consortium, our analysis demonstrates significant heterogeneity in intended ADT use for men with intermediate-risk prostate cancer in a modern cohort receiving dose-escalated radiation therapy. Notably, this was true for men with favorable and unfavorable intermediate-risk disease. In MVA, measures of tumor aggressiveness (grade group 3, ≥50% positive

Table 3 Univariable analysis of radiation technical details

	All	No ADT	ADT	OR (95% CI)	*P* value
Fractionation schemes					
Missing	2	2	0	-	<.0001
EBRT*	282 (49.7%)	130 (42.2%)	152 (58.0%)	Reference	
Ultrahypofractionated†	123 (21.7%)	95 (30.8%)	28 (10.7%)	0.25 (0.16-0.41)	
Combination‡	163 (28.7%)	81 (26.3%)	82 (31.3%)	0.87 (0.59-1.27)	
Nodal radiation					
No	446 (78.3%)	269 (87.3%)	177 (67.6%)	-	<.0001
Yes	124 (21.8%)	39 (12.7%)	85 (32.4%)	3.31 (2.17-5.06)	
Dose escalated					
Missing	7	1	6	-	
No	12 (2.1%)	4 (1.3%)	8 (3.1%)	-	.1361
Yes	551 (97.9%)	303 (98.7%)	248 (96.9%)	0.41 (0.12-1.38)	
Practice setting					
Private	449 (78.8%)	230 (74.7%)	219 (83.6%)	Reference	Reference
Academic	121 (21.2%)	78 (25.3%)	43 (16.4%)	0.58 (0.38-0.87)	.01

Abbreviations: ADT = androgen deprivation therapy; EBRT = external beam radiation therapy, OR = odds ratio.
* Moderately hypofractionated or conventionally fractionated EBRT.
† Stereotactic body radiation therapy (5-7 fractions) and brachy monotherapy.
‡ Combination EBRT and low-dose-rate or high-dose-rate brachytherapy.

distribution of risk factors seen in the MROQC cohort for all sites. [a]Facilities with only one patient were included in the analysis but not graphically displayed (n = 8). [b]Circle size in (B) is proportional to the number of patients enrolled by site.

Table 4 Multivariable model based on patient and tumor and radiation treatment variables

	Whole cohort (n = 566)			
Variable	**OR**	**LCL**	**UCL**	***P* value**
Grade group 3 vs 2/1	4.04	2.76	5.97	<.0001
≥50% vs <50% positive biopsy cores	1.96	1.29	2.99	.0017
PSA 10-20 vs 0-10	1.68	1.10	2.57	.017
Ultrahypofractionated* vs EBRT†	0.32	0.19	0.54	<.0001
Combination‡ vs EBRT†	0.66	0.42	1.02	.061
Elective nodal irradiation vs prostate only	1.67	1.03	2.73	.039
	AUC: 0.76 (0.72-0.79)			

Abbreviations: EBRT = external beam radiation therapy; LCL = lower confidence level; OR = odds ratio; PSA = prostate-specific antigen; UCL = upper confidence level, AUC = area under the curve.
* Stereotactic body radiation therapy (5-7 fractions) and brachy monotherapy.
† Moderately hypofractionated or conventionally fractionated EBRT.
‡ Combination EBRT and low-dose-rate or high-dose-rate brachytherapy.

biopsy cores, PSA of 10-20, and MRI adverse features) were associated with intended ADT use, whereas patient age and comorbidities were not. In addition, although fractionated EBRT and elective nodal irradiation were also associated with increased intended ADT use, there remained significant facility-level heterogeneity in all models evaluated.

There are several potential explanations for the heterogeneity in ADT use observed in our cohort. Providers and patients may question the net benefit of adding ADT for men with intermediate-risk prostate cancer because many of the clinical trials demonstrating OS improvements were completed over 20 years ago. This uncertainty of the benefit of ADT with dose-escalated radiation therapy led to NRG/RTOG 0815. At a median follow-up of 6.5 years, the addition of ADT to dose-escalated radiation reduced the risk of DM (HR 0.25, $P < .001$) and PCSM (HR 0.10, $P = .007$).[11] No statistically significant differences in OS were observed, however, and longer-term follow-up is ongoing.

In addition, the heterogeneity in intended ADT use in MROQC suggests that physicians and patients are personalizing treatment decisions beyond those dictated by the favorable versus unfavorable intermediate risk dichotomization. We found that more than 20% of men with FIR were prescribed ADT, whereas over 40% of men with UIR did not receive ADT. Most intended ADT durations were within NCCN guideline recommendations, although over 25% were over 6 months. The ongoing NRG GU-010 (NCT05050084) clinical trial includes men with UIR and is testing both ADT deintensification and intensification strategies based on results of a genomic classifier. Moreover, multimodality artificial intelligence evaluation of pathology slides has also been shown to identify patients more likely to benefit from ADT.[19] These novel tools may allow for better personalization of ADT use for men with intermediate-risk prostate cancer in the future.

Older studies have reported comparable rates of ADT use in intermediate-risk prostate cancer, ranging from 48% to 65%.[20,21] A National Cancer Database study evaluating patients treated from 2004 to 2016 showed 32.1% and 52.4% ADT use for FIR and UIR, respectively.[16] Notably, data suggesting favorable/unfavorable intermediate risk stratification were not published until 2013,[10] and the NCCN guidelines were narrowed to only UIR in 2018, which may explain lower and higher ADT use in our FIR and UIR cohorts, respectively. Our rate of ADT duration greater than 6 months in patients with intermediate-risk prostate cancer is comparable with 27% published in a cohort from 2006 to 2014.[21] Interestingly, higher use of neoadjuvant ADT than adjuvant ADT in this cohort is discordant with the expected greater oncologic benefit with adjuvant ADT as found in recent meta-analyses of randomized clinical trials.[4,22] It is possible that the COVID-19 pandemic may have influenced the timing or duration of intended ADT in this cohort.[23,24]

In multivariable analysis, we demonstrated no difference in intended ADT use based on patient comorbidities. Analyses narrowed to a cardiac composite score similarly showed no difference in intended ADT use. Our results are similar to those of other studies that did not find correlation between Charlson comorbidity score and ADT use.[16] Older age was associated with prescribed ADT in UVA in our cohort. However, older patients were also enriched for higher-risk tumor features. This highlights the need for integrated models that look not only at cancer risk but also at competing risks of other causes of mortality to better inform treatment decision making.[25]

A large degree of heterogeneity in intended ADT use was observed across centers for both FIR and UIR, suggesting that facility-level differences influence decisions about ADT recommendation. The AUC for our model incorporating the primary MVA and facility level was 0.79, indicating that patients and providers are considering factors outside those in our analysis when making decisions about ADT. Facility-level variation has been well established in prostate cancer, driving heterogeneity in active surveillance use,[26] spending,[27] ADT duration,[21] use of locoregional therapy for metastatic prostate cancer,[28] and extent of pelvic lymphadenectomy.[29] Within MROQC, facility-level factors have also been found to drive patterns of care for hypofractionation use in breast cancer.[30]

We found less intended ADT use among men receiving ultrahypofractionated radiation therapy. This is consistent with an NCDB analysis of UIR patients undergoing SBRT which showed less ADT use compared to those treated with conventional fractionation.[31] In addition, there was marginal association between receipt of a brachytherapy boost and lower intended ADT use, but this was no longer significant when facility level was included in our modeling. This may suggest that between-facility (interfacility)—level differences in brachytherapy usage are associated with ADT

prescription, whereas within-facility (intrafacility)—level differences may not be.

Additional work is required to understand facility level differences, and implementation strategies to better standardize appropriate ADT use across centers. Advances in MRI, PSMA PET, genomic classifiers,[32] and multimodal artificial intelligence[33] biomarkers may further assist providers in personalizing treatment recommendations based on absolute risks of DM or PCSM. There is significant uptake of MRI and genomic classifiers within MROQC and highlights the importance of ongoing trials such as the aforementioned NRG GU-010.

Our study has several limitations. Although intended ADT use was collected prospectively, the received ADT duration is not included in this analysis. Given the short-term duration of 4 to 6 months of ADT, however, this limitation is unlikely to meaningfully change the study conclusions. Although the collection of oncologic outcomes is ongoing, the follow-up duration of this study is too limited to make meaningful conclusions about effects on oncologic outcomes. Variation in ADT prescribing practices at the provider level would also be informative, but robust analysis was not feasible because of the lower number of patients treated per provider at some facilities in our database. Additional factors not captured in this analysis as well as small patient numbers at some facilities likely contribute to facility-level variability.

Conclusions

Within a state-wide consortium, there is substantial heterogeneity in physician-intended ADT use for men with intermediate-risk prostate cancer. This was true for men with favorable and unfavorable intermediate-risk disease, and the observed heterogeneity in intended ADT use was not fully explained by clinical factors. Ongoing trials such as NRG GU010 (NCT05050084) will shed further light on which men with intermediate-risk prostate cancer benefit from the addition of ADT to radiation therapy.

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