

Demographic Factors that Predict Compliance with Intravesical Therapy for Non-Muscle Invasive Bladder Cancer: A Retrospective Review

David J, BS; Zucker M, BS; Carroll T, MD; Straughan R, MD; Jaya Mishra, PhD; Gills J, MD; Westerman M, MD.

LSUHSC School of Medicine, Department of Urology



Introduction

- Intravesical Bacille Calmette-Guerin (BCG) is the gold standard for non-muscle invasive bladder cancer (NMIBC)
- One year of treatment for intermediate-risk disease, three years of treatment for high-risk disease
- Non-compliance increases recurrence, progression, metastasis, and mortality rates [1].
- Aim: explore demographic factors and clinical factors associated with non-compliance

Methods

- 233 patients with intermediate or high-risk NMIBC who received BCG between 2012-2020.
- Variables: Age, sex, race, insurance type, zip code, NCCN risk, and participation in a clinical trial
- Compliance= maintained expected BCG schedule within 1 month for intermediate-risk and within 3 months for high-risk
- 29 patients excluded for missing BCG dates or receiving BCG outside of hospital system
- 21 patients excluded for not having “adequate” BCG
- 183 patients met inclusion criteria

Results

Variable	Compliant (n=144)	Non-compliant (n=39)	p value
Race			0.3359
African American	15 (88.24%)	2 (11.76%)	
Alaskan Native or American Indian	1 (100%)	0 (0%)	
Asian	2 (100%)	0 (0%)	
Native Hawaiian or Pacific Islander	3 (75%)	1 (25%)	
White	123 (77.85%)	35 (22.15%)	
Other	3 (75%)	1 (25%)	
Age			0.2741
Sex			0.0480
Female	25 (67.57%)	12 (32.43%)	
Male	125 (82.24%)	27 (17.76%)	
Insurance			0.2303
Commercial	71 (85.54%)	12 (14.46%)	
Medicaid	5 (100%)	0 (0%)	
Medicare	61 (73.49%)	22 (26.51%)	
Other	7 (70%)	3 (30%)	
Not found	6 (75%)	2 (25%)	
Distance to clinic			0.0993
NCCN Risk			0.1063
High	120 (83.33%)	24 (16.67%)	
Intermediate	30 (68.18%)	14 (31.82%)	
Clinical Trial			<0.0001
Yes	88 (97.78%)	2 (2.22%)	
No	62 (63.27%)	36 (36.73%)	

Table 1: Demographic variables and clinical factors associated with compliance.

- Cohort characteristics:
 - 76.6% with high-risk disease
 - 47.9% participated in a clinical trial
- Males had higher rate of compliance compared to females (82.2% vs 67.6%, p=0.048)
- Participation in a clinical trial significantly increased compliance (97.8% vs 63.3%, p<0.0001)
- Reasons for non-compliance: lost to follow-up (35.9%), comorbidities (20.5%), side effects (10.2%), personal reasons (5.1%), unknown (28.2%)
- Time in schedule where non-compliance most commonly occurs: 12 months (38.5%) and 6 months (35.95%).

Conclusions

- It is important for patients to adhere to the BCG treatment schedule to reduce cancer recurrence and progression
- Male sex and participation in a clinical trial were significantly associated with compliance
- Race, gender, insurance type, and distance to clinic may not play significant roles
- Non-compliance typically occurs at 6-12 months

References

- Abushamma F, Khayyat Z, Soroghle A, et al. The Impact of Non-Compliance to a Standardized Risk-Adjusted Protocol on Recurrence, Progression, and Mortality in Non-Muscle Invasive Bladder Cancer. *Cancer Manag Res.* 2021;13:2937-2945