

Major Adverse Cardiovascular Event Risk Following Androgen Deprivation Therapy Initiation by Cardiovascular History

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BACKGROUND

- Literature has reported an association between androgen deprivation therapy (ADT) and increased cardiovascular (CV) risk in prostate cancer (PCa) patients¹⁻³
- One risk factor for increased CV risk is a history of CV events; an analysis found that each new CV event increased the probability of a future event⁴
- A nurse-led intervention has been shown to reduce risk in CV patients⁵

OBJECTIVE

This study evaluates MACE risk after ADT initiation for patients with and without MACE history using real-world data

METHODS

- Clinical data were collected from a repository comprised of U.S. Medical and Pharmacy claims and Electronic Healthcare Records
- Medical records (2010 to 2020) of PCa patients (n=45,059) receiving LHRH agonist/antagonist injections were evaluated for rate of MACE-free survival in patients with and without MACE history
- Exclusion criteria included lack of ADT initiation date or MACE within 6 months prior to ADT initiation
- MACE was defined as myocardial infarction, stroke, and death from any cause based on a recent study in this field⁴
- Kaplan-Meier event-free survival curves were constructed, and cox regression was used to compare MACE risk between patients with and without MACE history

RESULTS

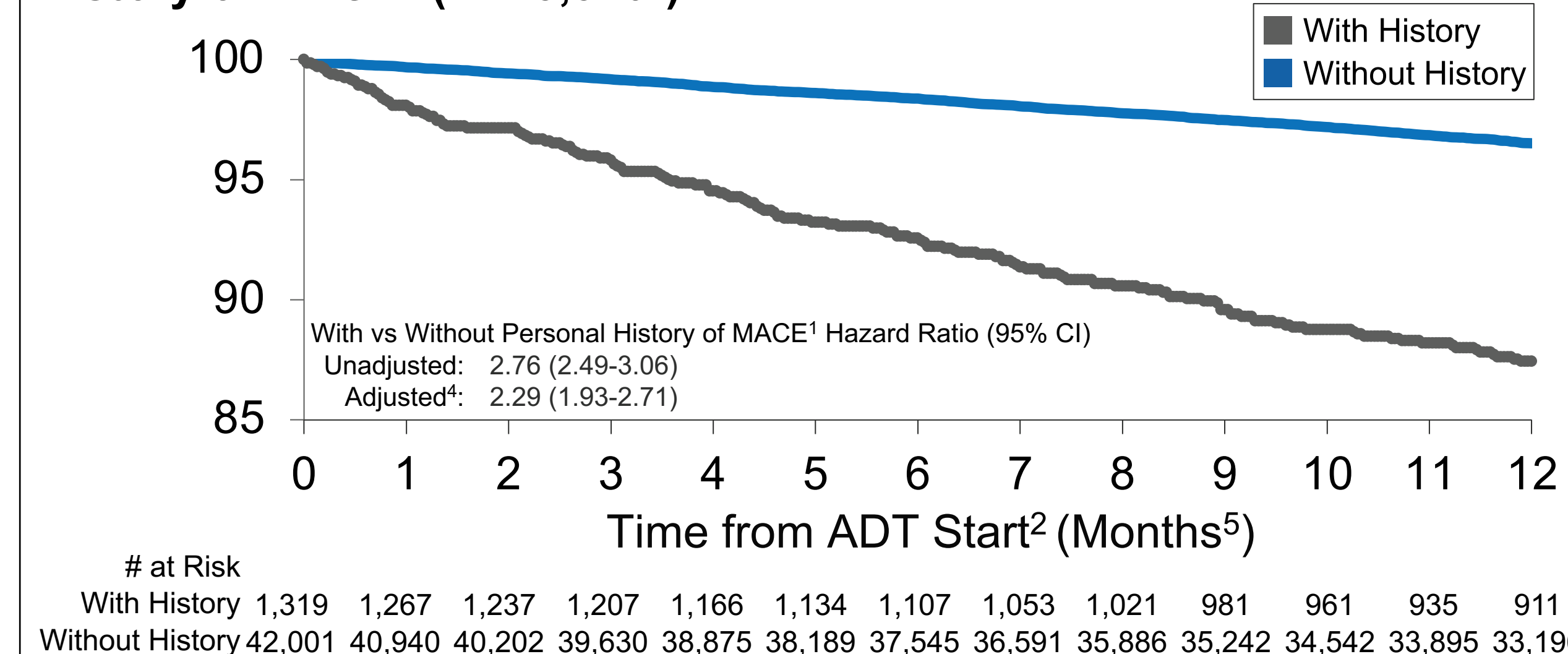
- 178,388 LHRH injection entries and 7,681 MACE were identified
- 3.0% of patients had a history of MACE (Table 1)
- After ADT initiation, MACE risk was higher for patients with MACE history than for those without (Figure 1 & 2)
- Comparisons between MACE history for both unadjusted (HR=2.76 (95% CI 2.49-3.06)) and adjusted (HR=2.29 (95% CI 1.93-2.71)) are significant (Figure 1 & 2)

Table 1. Demographics Table – Personal History (Hx) of MACE¹

Categories		All Patients ¹ N = 43,320	With MACE ¹ Hx N = 1,319	Without MACE ¹ Hx N = 42,001
Age	Mean (SD)	73.7(8.3)	76.6(7.4)	73.6(8.3)
	White, %	65.1	72.3	64.9
Race	Black, %	13.1	9.9	13.2
	Asian, %	1.3	1.1	1.3
	Other, %	2.3	1.5	2.3
	Unknown, %	18.2	15.2	18.3
Personal History	MACE, %	3.0	100.0	0.0

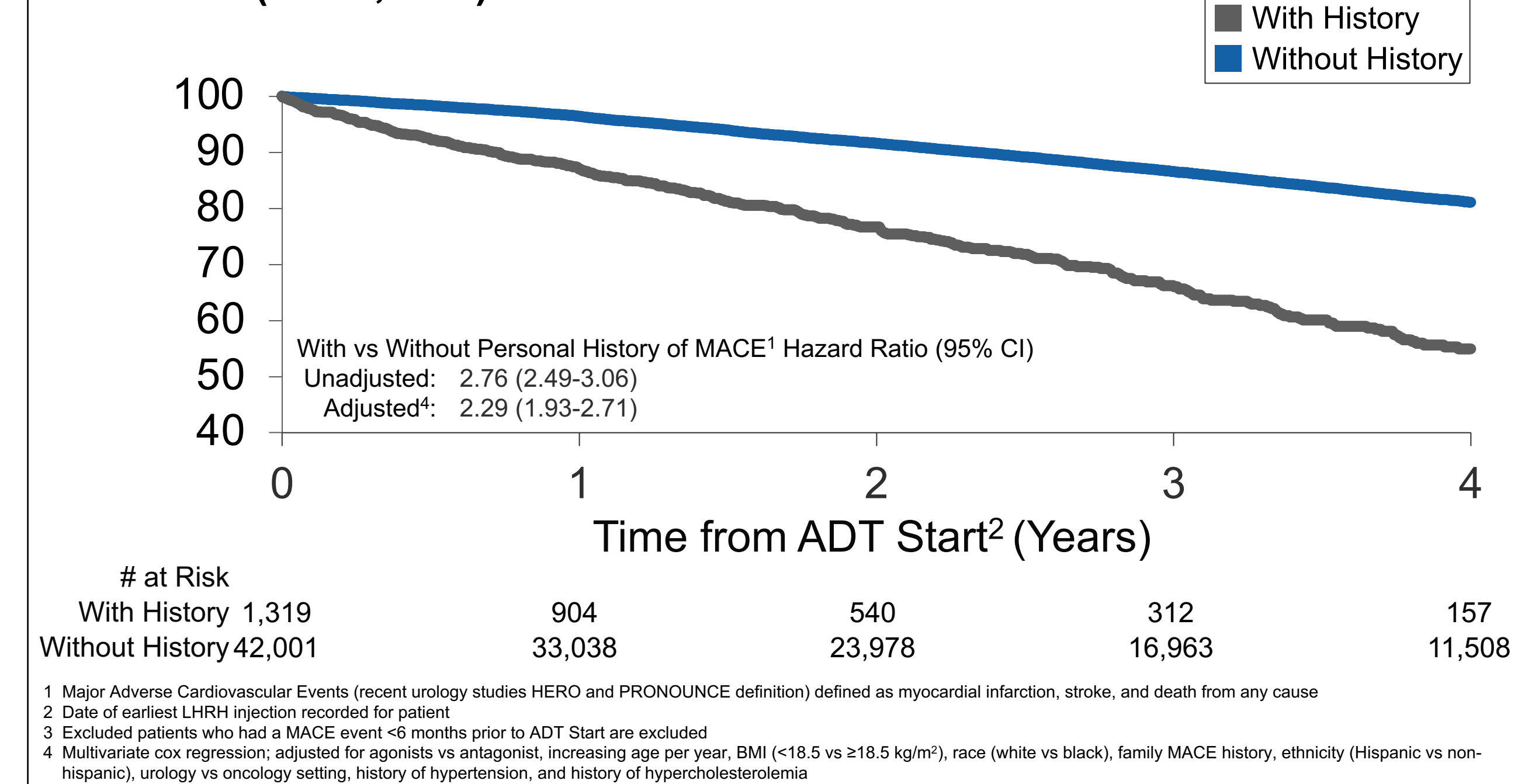
¹ Patients who had a MACE event <6 months prior to ADT Start are excluded (URO definition)

Figure 1. 12-Month Kaplan-Meier for MACE¹ Since ADT Start² by History of MACE¹ (N=43,320³)



¹ Major Adverse Cardiovascular Events (recent urology studies HERO and PRONOUNCE definition) defined as myocardial infarction, stroke, and death from any cause
² Date of earliest LHRH injection recorded for patient
³ Excluded patients who had a MACE event <6 months prior to ADT Start are excluded
⁴ Multivariate cox regression; adjusted for agonists vs antagonist, increasing age per year, BMI (<18.5 vs ≥18.5 kg/m²), race (white vs black), family MACE history, ethnicity (Hispanic vs non-Hispanic), urology vs oncology setting, history of hypertension, and history of hypercholesterolemia
⁵ 30-day month definition

Figure 2. 4-Year Kaplan-Meier for MACE¹ Since ADT Start² by History of MACE¹ (N=43,320³)



¹ Major Adverse Cardiovascular Events (recent urology studies HERO and PRONOUNCE definition) defined as myocardial infarction, stroke, and death from any cause
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³ Excluded patients who had a MACE event <6 months prior to ADT Start are excluded
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CONCLUSIONS

- Consistent with previous publications reporting elevated CV risk following CV events⁴, MACE risk following ADT initiation was higher for patients with MACE history
- For example, during 1st year, MACE risk was >3 fold higher for patients with MACE history than those without

IMPLICATIONS

- The number of patients with MACE history is low at 4 years after ADT initiation
- However, our analysis of data over 10 years from ~45,000 PCa patients is likely an accurate reflection of real-world trends
- Nurses should monitor PCa patients with MACE history and help educate them on lifestyle changes that could impact treatment outcomes

References:
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