



Geographic Disparities in Transthyretin Amyloid Cardiomyopathy Prevalence in United States Veterans

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Disclosure of Relevant Financial Relationships With Industry and Acknowledgments



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Received research grant support, consulting income, and other support from Alnylam Pharmaceuticals, BridgeBio Pharma, Inc., and Pfizer.

This material is the result of work supported with resources and the use of facilities at the Southern Arizona VA Health System (Tucson, AZ, USA), and Arizona State University (Tempe, AZ, USA). The contents do not represent the views of VA or the US government.

The study was funded in part by BridgeBio Pharma, Inc. (San Francisco, CA, USA).

Acknowledgments

- Under the direction of the authors, medical writing assistance was provided by The Lockwood Group, and supported by BridgeBio Pharma, Inc. Editorial support and critical review provided by Erin Mathern of BridgeBio Pharma, Inc.

Introduction

- > ATTR-CM is a rare, underdiagnosed, life-threatening progressive disease of the heart¹
- > Disease awareness has increased due to improved diagnosis, and the approval of disease-modifying therapy (DMT) for ATTR-CM, namely tafamidis (2019), acoramidis (2024), and vutrisiran (2025)²⁻⁶
- > The Veterans Health Administration is the largest integrated US healthcare system, providing care at 172 medical centers and 1138 outpatient sites of care, and serving 9 million enrolled Veterans each year⁷
- > Novel geographic variation in diagnosing ATTR-CM in the US VA population may inform future studies of health system factors or social factors to ensure health equity



OBJECTIVE:

To evaluate whether geographic differences in ATTR-CM prevalence exist in the US VA population, perhaps related to the healthcare system and societal factors

Methods

- > This was a retrospective cohort study using data from clinical care of Veterans across all VA facilities in the US from January 2012 to December 2021, accessed from electronic health records (VA ARCHES/Mdclone)
- > ATTR-CM was defined using a combination of ICD-9-CM and ICD-10-CM codes for systemic amyloidosis and heart failure
 - > Patients were included if they had 2 diagnoses of heart failure (inpatient or outpatient) or 1 principal diagnosis of heart failure, and 2 diagnoses of ATTR (inpatient or outpatient)
 - > Patients who had diagnoses, medications, or procedures associated with light-chain amyloidosis or multiple myeloma were excluded
- > The primary outcome was ATTR-CM prevalence, defined as cases per 100,000 person-years (PY)
 - > Prevalence data were analyzed over time and by state after FDA approval of DMT (2019; ie, tafamidis)
- > The distribution of US amyloidosis centers, classified by the International Society of Amyloidosis, Amyloidosis Foundation, and/or Amyloidosis Research Consortium, was also assessed

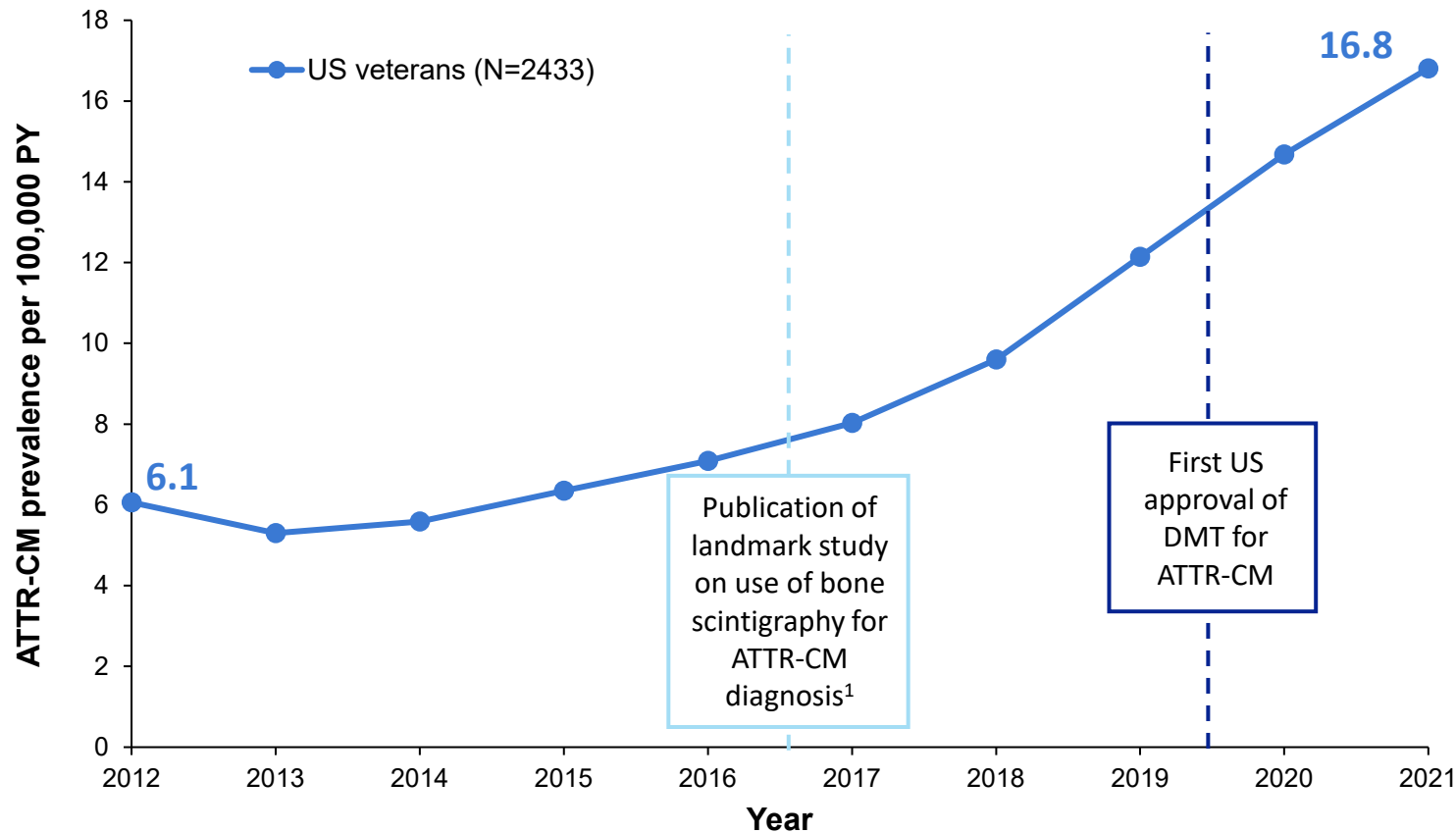
Demographics

- A total of 2433 patients with ATTR-CM from the US VA population were included in this analysis
- Mean (SD) age was 75.9 years (10.1), 98.8% were male, 52.7% were White, and 42.3% were Black
- Regional representation was highest from the South (n=668 [34.5%]), followed by the Midwest (n=443 [22.9%])

Characteristic	Patients (N=2433)
Age at index, years	
Mean (SD)	75.9 (10.1)
Median (IQR)	75.8 (69.2-83.8)
Age group, years, n (%)	
≤65	339 (14.9)
65-74	729 (32.0)
75-84	704 (30.9)
≥85	505 (22.2)
Sex, n (%)	
Male	2395 (98.8)
Female	30 (1.24)
Race, n (%)	
White	1252 (52.7)
Black	1005 (42.3)
Other	121 (5.1)
Region, n (%)	
Northeast	420 (21.7)
Midwest	443 (22.9)
West	408 (21.0)
South	668 (34.5)

Results: ATTR-CM Prevalence

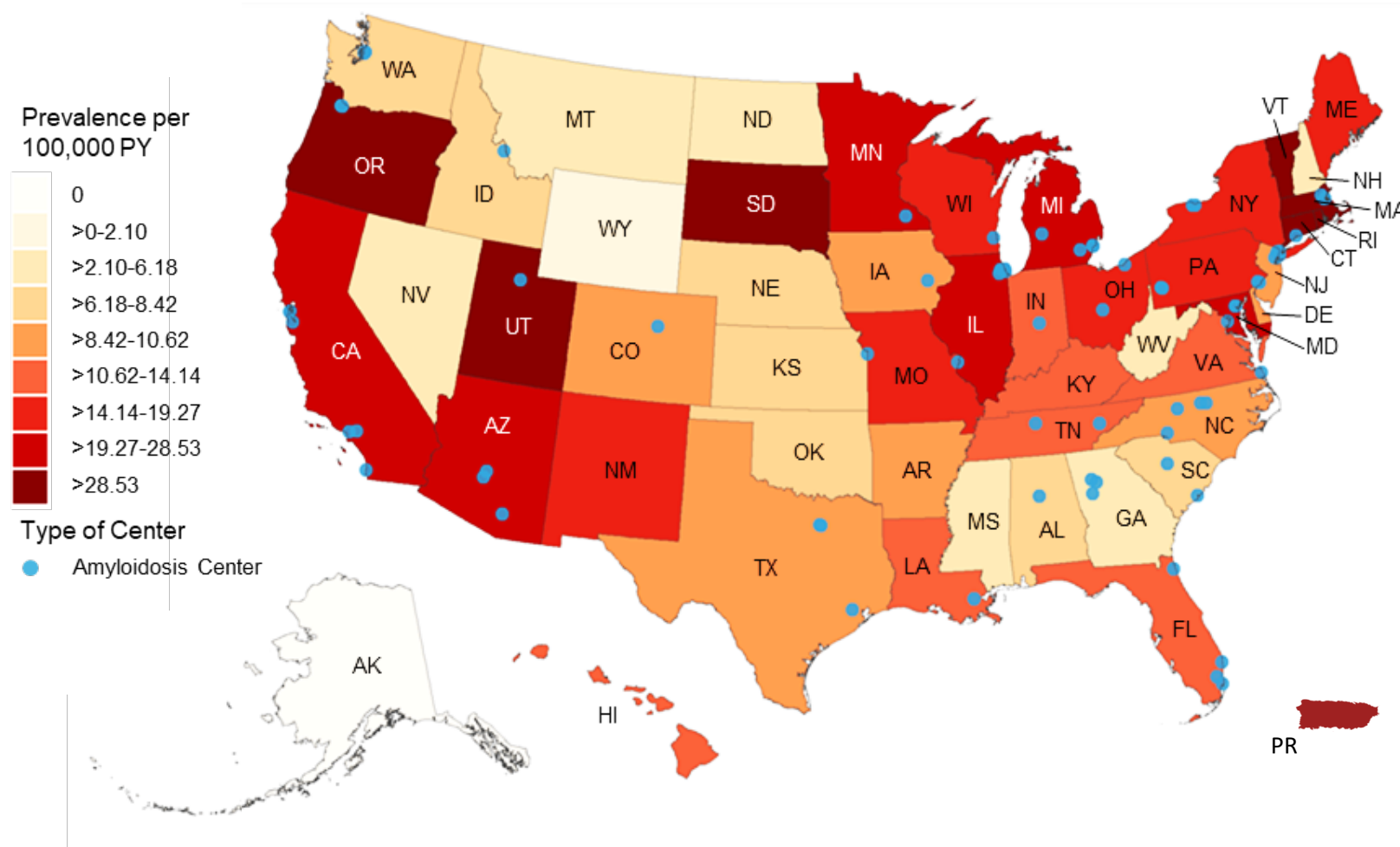
ATTR-CM Prevalence per 100,000 PY Over Time in US Veterans from 2012 to 2021



- ATTR-CM prevalence nationally was 6.1 per 100,000 PY in 2012
- Prevalence increased to 16.8 per 100,000 PY in 2021

Results: ATTR-CM Prevalence in the Disease-Modifying Era

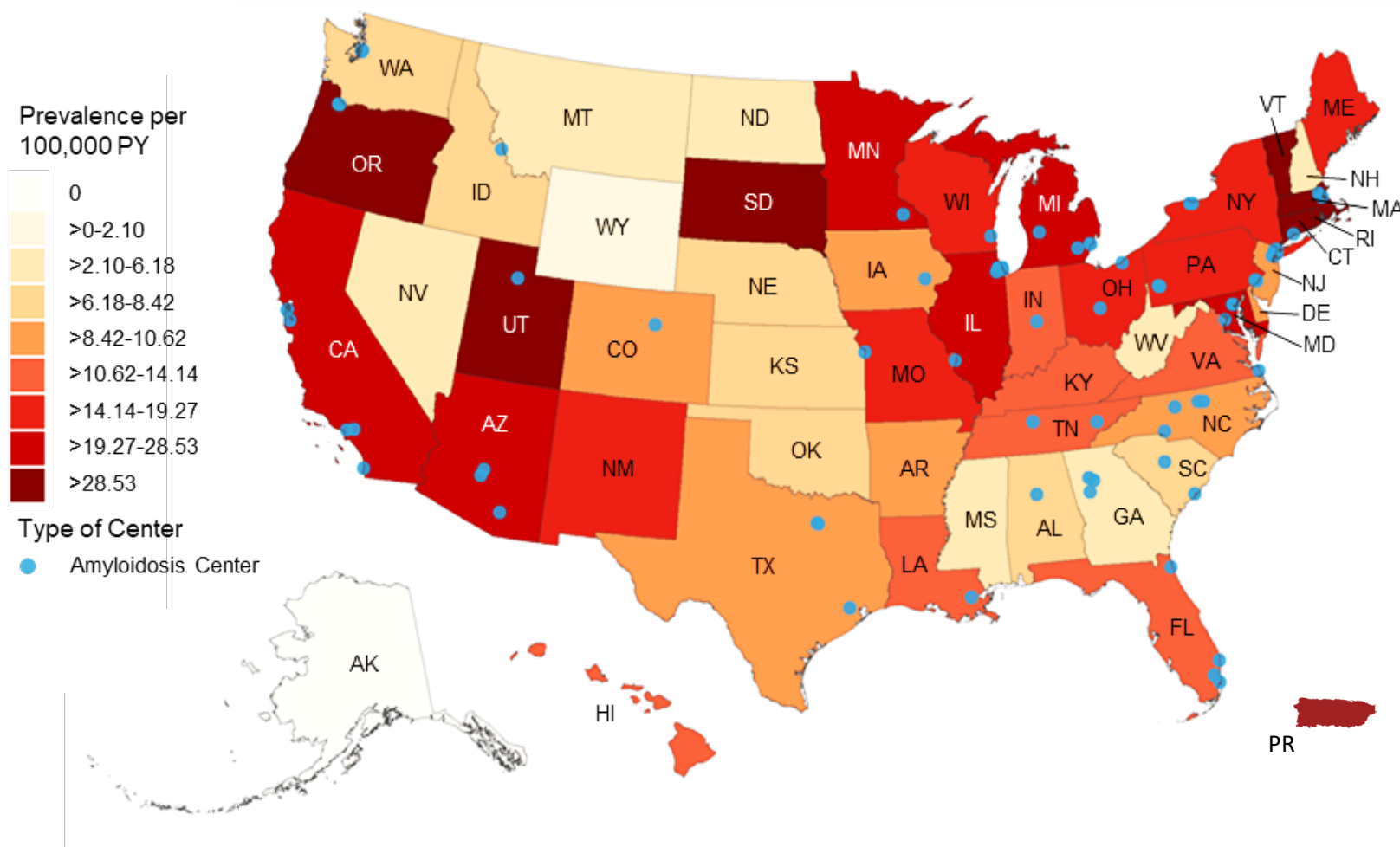
ATTR-CM Prevalence per 100,000 PY by State in US Veterans from 2019 to 2021



- After 2019, regions with a high prevalence of ATTR-CM included:
 - West
 - Oregon, 50.9
 - Utah, 39.5
 - Northeast
 - Massachusetts, 43.2
 - Rhode Island, 43.0
 - Vermont, 33.6
 - Connecticut, 29.3
 - Midwest
 - South Dakota, 35.4

Results: ATTR-CM Prevalence in the Disease-Modifying Era

ATTR-CM Prevalence per 100,000 PY by State in US Veterans from 2019 to 2021



- Regions with a low prevalence of ATTR-CM included:
 - South
 - Mississippi, 2.8
 - West Virginia, 5.9
 - Georgia, 6.0
 - Oklahoma, 6.2
 - Alabama, 6.7
 - South Carolina, 7.0
 - West
 - Wyoming, 2.1
 - Nevada, 3.1
 - Montana, 5.1

Limitations

- > Patients who are in the VA system are unique in their demographics and may not necessarily be representative of the larger nonveteran population of patients with ATTR-CM
- > Compared with the general population, the Veteran population is older, more likely to be male, White, and non-Hispanic, and has a greater number of physical and mental health comorbidities¹
- > The intrinsic limitations of ICD-9-CM/ICD-10-CM codes for identification of ATTR-CM could lead to misclassifying cases of ATTR-CM
- > It is unclear whether US Veterans had access to amyloidosis centers in their area

Conclusions



The documented prevalence of ATTR-CM increased over time in the US VA population, potentially owing to increased use of noninvasive testing and the introduction of DMT



Geographic variations exist at the state level



Further investigation is needed to understand whether regional variation is due to differences in disease awareness, early diagnosis, and access to care

