Prevalence and Clinical Characteristics of Patients with Transthyretin Amyloidosis in the United States and Japan: Results from the OverTTuRe Study

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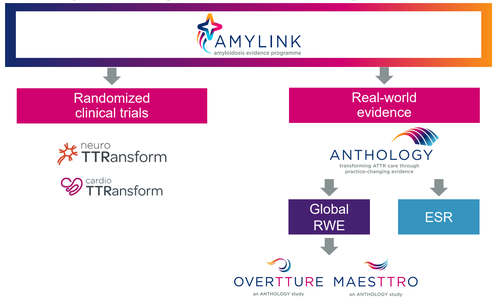
Introduction

- Amyloid transthyretin (ATTR) amyloidosis is a clinically heterogeneous, progressive, and fatal disease, resulting in multisystem dysfunction predominantly in the heart and peripheral nervous system.[1]
- Disease manifestations of ATTR amyloidosis include cardiomyopathy, progressive polyneuropathy, musculoskeletal issues, and signs of autonomic dysfunction. These symptoms can resemble those of other diseases, complicating the diagnostic process.[1]
- Increasing availability of genetic testing and the development of disease-modifying therapies have led to greater awareness of ATTR amyloidosis in clinical practice, and highlight the importance of timely diagnosis.[1–3]
- ANTHOLOGY is a global, multi-study, real-world evidence program for ATTR amyloidosis (**Figure 1**).
- OverTTuRe, an ANTHOLOGY study, is a retrospective, observational, longitudinal, multi-country cohort study that aims to comprehensively describe patient characteristics, treatment patterns, and outcomes in patients with ATTR amyloidosis.

Figure 1. Amyloidosis global evidence program



Above represents AMYLINK ATTR amyloidosis specific studies only.
ESR, externally sponsored research; RWE, real-world evidence.

Aim

- To describe the epidemiological and clinical characteristics of patients diagnosed with ATTR amyloidosis in the US and Japan.

Methods

- This study was conducted using de-identified electronic health record data from Optum's Clinformatics® Data Mart (CDM) Database (2017–2022) for the US cohort, and the Medical Data Vision (MDV) Database (2014–2022) for the Japanese cohort.
- Data from patients aged ≥18 years with a reported ICD-10 diagnosis code for ATTR amyloidosis were included.
- Baseline demographics, patient characteristics, and key medical conditions were summarized descriptively by database.
- The number of patients diagnosed with ATTR amyloidosis in each database over time was identified.

Results

- In total, 20,452 patients with ATTR amyloidosis were identified from the US and 12,072 from Japan.
  - Median age at diagnosis was similar between countries (75 versus 73 years for the US and Japan, respectively) (**Table 1**).

Table 1. Patient characteristics at diagnosis in the US and Japan

	US (2017–2022)	Japan (2014–2022)
Number of patients	20,452	12,072
Age, median (IQR), years	74.9 (67.7, 81.8)	73.0 (60.0, 81.0)
Sex, n (%)		
Male	9987 (48.8)	6434 (53.3)
Female	10,462 (51.2)	5638 (46.7)
Unknown	3 (0.0)	0 (0.0)
Race/ethnicity, n (%)		
White	13,221 (64.6)	N/A
Black	2883 (14.1)	N/A
Hispanic	2424 (11.9)	N/A
Asian	914 (4.5)	12,072 (100.0)
Unknown	1010 (4.9)	0 (0.0)
Insurance type, n (%)		
Medicare	16,550 (80.9)	N/A
Commercial	3902 (19.1)	N/A
Medicaid	N/A	N/A
Other	N/A	12,072 (100.0)

IQR, interquartile range.

Results

- The most common cardiac conditions in both countries were hypertension, arrhythmia, and heart failure (**Table 2**).
- Diabetes, chronic kidney disease stage III–V, and gastrointestinal dysfunction were the most frequent non-cardiac conditions.

Table 2. Prevalence of medical conditions at baseline in the US and Japan

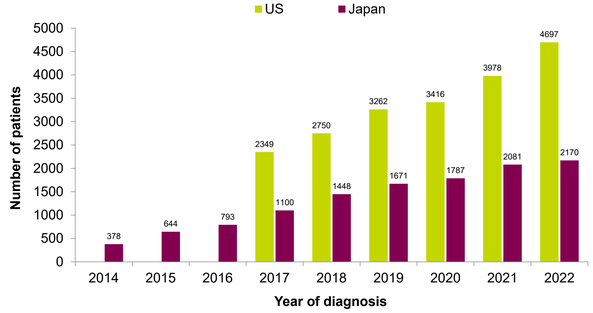
	US (2017–2022)	Japan (2014–2022)
Number of patients	20,452	12,072
Cardiac conditions[a], n (%)		
Hypertension	16,451 (80.4)	4170 (34.5)
Arrhythmia[b]	8118 (39.7)	2825 (23.4)
Heart failure	6922 (33.8)	5002 (41.4)
Atrial fibrillation	5850 (28.6)	1741 (14.4)
Cardiomyopathy	4475 (21.9)	923 (7.7)
Aortic valve stenosis	2860 (14.0)	304 (2.5)
Angina	909 (4.4)	1821 (15.1)
Non-cardiac conditions[a], n (%)		
Diabetes	7489 (36.6)	2712 (22.5)
Chronic kidney disease stage III–V	5313 (26.0)	529 (4.4)
Gastrointestinal dysfunction	3789 (18.5)	2119 (17.6)
Polyneuropathy	2590 (12.7)	789 (6.5)
Spinal stenosis	2364 (11.6)	390 (3.2)
Carpal tunnel syndrome	997 (4.9)	281 (2.3)
Autonomic neuropathy	550 (2.7)	76 (0.6)
Nephrotic syndrome	266 (1.3)	550 (4.6)
Erectile dysfunction	59 (0.3)	0 (0.0)

[a] Baseline period was ≤12 months pre-index; index defined as first date of diagnosis/evidence of ATTR amyloidosis.
[b] Arrhythmia includes atrial fibrillation.

Disclosures
SK has received honoraria from AstraZeneca and Novartis. JW, KJ, CP, EW are employees of and hold stock or stock options in AstraZeneca. NK is an employee of AstraZeneca. CSA is part of the contingent workforce of AstraZeneca. LSH is an independent contractor for AstraZeneca.

- Between 2017 and 2022, there was approximately a 2-fold increase in the recorded number of patients with ATTR amyloidosis in the US and Japan (**Figure 2**).

Figure 2. Number of patients diagnosed with ATTR amyloidosis in the US and Japan



Conclusions

- The OverTTuRe study identified a racially and clinically diverse population of patients with ATTR amyloidosis from databases in the US and Japan.
- This study showed a doubling in the number of patients diagnosed with ATTR amyloidosis from 2017 to 2022.
- Patients from both countries to a large degree had a mixed phenotype, with a high prevalence of cardiac and non-cardiac conditions commonly associated with ATTR amyloidosis.
- These findings highlight the growing attention and critical need for increased awareness of ATTR amyloidosis.

References
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