ATTR Management Guidelines

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ATTR Disease State Slide Deck

- This resource provides information about ATTR.
- This resource is intended to be viewed in its entirety to support scientific exchange and is not intended as recommendations for clinical practice.
- This resource may contain hyperlinks that are not functional in this format.
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II Guidelines on Disease Management

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Guidelines on Disease Management

Guideline	Global or country-specific	Topics addressed					
		hATTR	wtATTR	Polyneuropathy	Cardiomyopathy	Diagnosis	Monitoring and treatments
2013 ISA guideline of transthyretin-related hereditary amyloidosis for clinicians[1]	Global	✓		✓	✓	✓	✓
2022 ISA guidelines and new directions in the therapy and monitoring of hATTR amyloidosis (closed-access)[2]	Global	✓		✓	✓		✓
2022 AHA/ACC/HFSA guideline for the management of heart failure[3]	US	✓	✓		✓	✓	✓
Diagnosis and treatment of cardiac amyloidosis (ESC)[4]	Europe	✓	✓		✓	✓	✓
Canadian guidelines for hereditary transthyretin amyloidosis polyneuropathy management (closed-access)[5]	Canada	✓		✓	✓	✓	✓
JCS 2020 guideline on diagnosis and treatment of cardiac amyloidosis[6]	Japan	✓	✓	✓	✓	✓	✓

ACC, American College of Cardiology; AHA, American Heart Association; ATTR, transthyretin-mediated; hATTR, hereditary ATTR; wtATTR, wild-type ATTR; ESC, European Society of Cardiology; HFSA, Heart Failure Society of America; ISA, International Society of Amyloidosis; JSC, Japanese Circulation Society.

1. Ando et al. *Orphanet J Rare Dis.* 2013;8:31; 2. Ando et al. *Amyloid.* 2022; 29(3):143–55; 3. Heidenreich et al. *J Am Coll Cardiol.* 2022;79(17):e263–421; 4. Garcia-Pavia et al. *Eur J Heart Fail.* 2021;23:512–26; 5. Alcantara et al. *Can J Neurol Sci.* 2022;49(1):7–18; 6. Kitaoka et al. *Circ J.* 2020;84(9):1610–71.

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Expert Consensus on Disease Management

Expert consensus	Global or country-specific	Topics addressed					
		hATTR	wtATTR	Polyneuropathy	Cardiomyopathy	Diagnosis	Monitoring and treatments
Avoiding misdiagnosis: recommendations for the suspicion and diagnosis of transthyretin amyloidosis for the general practitioner[1]	Global	✓	✓	✓	✓	✓	
Recommendations for the suspicion and diagnosis of transthyretin cardiac amyloidosis[2]	Global	✓	✓		✓	✓	
Recommendations to improve diagnosis of ATTR amyloidosis with polyneuropathy[3]	Global	✓		✓		✓	
Recommendations for multimodality imaging in cardiac amyloidosis: part 1 of 2—evidence base and standardized methods of imaging[4]	Global	✓	✓		✓	✓	
Recommendations for multimodality imaging in cardiac amyloidosis: part 2 of 2—diagnostic criteria and appropriate utilization[5]	Global	✓	✓		✓	✓	
Brazilian consensus for diagnosis, management and treatment of transthyretin familial amyloid polyneuropathy[6]	Brazil	✓		✓		✓	✓
Monitoring symptomatic hereditary transthyretin-mediated amyloidosis and assessment of disease progression[7]	Global	✓		✓	✓		✓
World Heart Federation consensus on transthyretin amyloidosis cardiomyopathy (ATTR-CM)[8]	Global	✓	✓		✓	✓	✓
Diagnosis and treatment of hereditary transthyretin amyloidosis with polyneuropathy in the United States[9]	US	✓		✓		✓	✓

ATTR, transthyretin amyloidosis; ATTR-CM, ATTR with cardiomyopathy; hATTR, hereditary ATTR; wtATTR, wild-type ATTR.

1. Gertz et al. *BMC Fam Pract*. 2020;21:198; 2. Maurer et al. *Circ Heart Fail*. 2019;12(9):e006075; 3. Adams et al. *J Neurol*. 2021;268(6):2109–22; 4. Dorbala et al. *Circ Cardiovasc Imaging*. 2021;14(7):e000029; 5. Dorbala et al. *Circ Cardiovasc Imaging*. 2021;14(7):e000030; 6. Pinto et al. *Arq Neuropsiquiatr*. 2018;76(9):609–21; 7. Adams et al. *Orphanet J Rare Dis*. 2021;16:411; 8. Brito et al. *Glob Heart*. 2023;18(1):59; 9. Karam et al. *Muscle Nerve*. 2024; 69 (3):273-287.

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ESC Position Statement on Diagnosis and Treatment of Cardiac Amyloidosis (1/2)

Proposed follow-up scheme in ATTR amyloidosis with cardiomyopathy

Patient type	Recommendation
ATTR amyloidosis with cardiomyopathy patients	**Every 6 months:** • ECG, blood tests including NT-prBNP and troponin, neurological evaluation (if hATTR), 6MWD (optional), KCCQ (optional) **Every 12 months:** • Echocardiography/CMR, 24h Holter ECG, ophthalmological evaluation (if hATTR)
hATTR asymptomatic genetic carriers[a]	**Yearly:** • ECG, blood tests including NT-proBNP and troponin, neurological and ophthalmological evaluation **Every 2 years:** • Holter ECG **Every 3 years if any of the above complementary tests are abnormal:** • Scintigraphy, CMR

2021 ESC position statement for the diagnosis and treatment of cardiac amyloidosis is publicly available and can be accessed here https://onlinelibrary.wiley.com/doi/10.1002/ejhf.2140

6MWD, 6-min walking distance; ATTR, transthyretin amyloidosis; hATTR, hereditary ATTR; CMR, cardiac magnetic resonance; ECG, electrocardiogram; ESC, European Society of Cardiology; KCCQ, Kansas City Cardiomyopathy Questionnaire; NT-proBNP, N-terminal pro B-type natriuretic peptide.

1. Garcia-Pavia et al. *Euro J Heart Fail.* 2021;23(4):512–26.

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ESC Position Statement on Diagnosis and Treatment of Cardiac Amyloidosis (2/2)

Treatment of cardiac complications and comorbidities in cardiac amyloidosis

Cardiac complication/comorbidity	Recommendation
Aortic stenosis	• In amyloid-AS, **TAVR** improves patient outcome • Concomitant wtATTR amyloidosis risk factor of periprocedural AV block
Heart failure	• **Control fluid; diuretics** • **Deprescribe B-blockers and avoid ACEi/ARB** • LVAD not suitable for most patients • Heart transplant for selected cases
Thromboembolism	• **High risk, common** • **Anticoagulate** if AF; consider in selected cases of SR • Anticoagulate independent of CHA_2DS_2-VASc[a] score
Atrial fibrillation	• **Amiodarone** is the preferred AA • Use of digoxin with caution • Electrical CV has significant risk of complications and AF recurrence is frequent; exclude thrombi beforehand • Data are scarce and controversial for AF ablation
Conduction disorders	• **PPM**, according to standard indications • If high paced burden is expected, consider CRT
Ventricular arrhythmias	• **ICD** for secondary prevention; not recommended in primary prevention • Transvenous ICD preferred over subcutaneous

2021 ESC position statement for the diagnosis and treatment of cardiac amyloidosis is publicly available and can be accessed here https://onlinelibrary.wiley.com/doi/10.1002/ejhf.2140

[a]Congestive heart failure, hypertension, age ≥75, diabetes, stroke, vascular disease, age 65-74, sex category.
6MWD, 6-min walking distance; AA, antiarrhythmic; ACEi, angiotensin-converting enzyme inhibitor; AF, atrial fibrillation; ARB, angiotensin receptor blocker; AS, aortic stenosis; ATTR, transthyretin amyloidosis; AV, atrioventricular; CMR, cardiac magnetic resonance; CRT, cardiac resynchronization therapy; CV, cardioversion; ECG, electrocardiogram; ESC, European Society of Cardiology; ICD, implantable cardioverter-defibrillator; LVAD, left ventricular assist device; KCCQ, Kansas City Cardiomyopathy Questionnaire; NT-proBNP, N-terminal pro B-type natriuretic peptide; PPM, permanent pacemaker; SR, sinus rhythm; TAVR, transcatheter aortic valve replacement; wtATTR, wild-type ATTR.

1. Garcia-Pavia et al. *Eur J Heart Fail.* 2021;23(4):512–26.

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