ATTR-CM AND AORTIC STENOSIS

MAKING A DIFFERENTIAL DIAGNOSIS

Aortic stenosis can coexist with ATTR-CM, leading to worse outcomes.[1] Learn more about when to suspect ATTR-CM.

ATTR-CM=cardiomyopathy of transthyretin-mediated amyloidosis.

SEVERE AORTIC STENOSIS MAY BE A SIGN OF ATTR-CM

~1 in 6 older adults with aortic stenosis (AS) undergoing TAVR may have ATTR-CM.
For those with low-flow, low-gradient AS, that number may be ≈2x higher.[2*]

ATTR-CM vs AS

	ATTR-CM	Aortic stenosis
Etiology	**Misfolding of TTR protein**, possibly due to aging or due to an inherited genetic variant. TTR can aggregate in the heart, nerves, and GI tract, as well as other tissues, leading to multisystem manifestations[3-5]	**Calcification and/or stiffening of the aortic valve** due to age-related degeneration, rheumatic fever, or congenital malformations[6]
Age of onset	**wtATTR:** >60 years; **hATTR**: >30 years[7]	50-70 years[6]
Median survival, untreated	2.6-5.8 years[8-12]	1.8 years[2]

OVERLAPPING FINDINGS WITH AS AND ATTR-CM CAN CONFOUND DIAGNOSIS

Early identification and intervention are key to slowing ATTR-CM progression, but overlapping findings with AS can delay an accurate ATTR-CM diagnosis.[1,4,13]

Overlapping findings with AS[14]

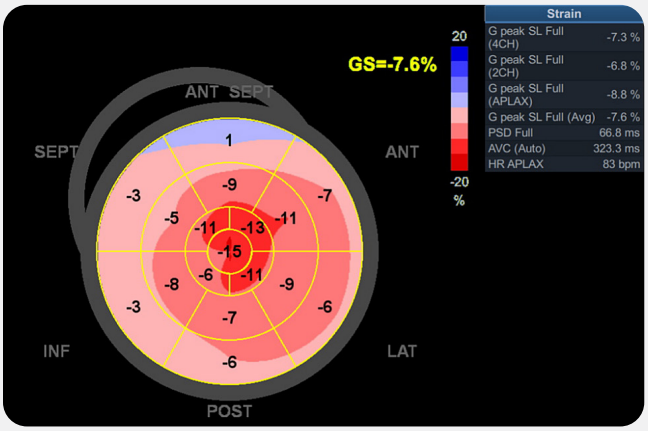
- LV hypertrophy
- HFpEF
- Conduction system disease
- Syncope
- Dyspnea
- Edema

*From a study of 151 patients (mean age 84 years ± 6 years) with degenerative AS.[2]

GI=gastrointestinal; hATTR=hereditary transthyretin-mediated amyloidosis; HFpEF=heart failure with preserved ejection fraction; LV=left ventricular; TTR=transthyretin; wtATTR=wild-type transthyretin-mediated amyloidosis.

ECHO AND ECG FINDINGS MAY INDICATE ATTR-CM

ECHOCARDIOGRAPHY



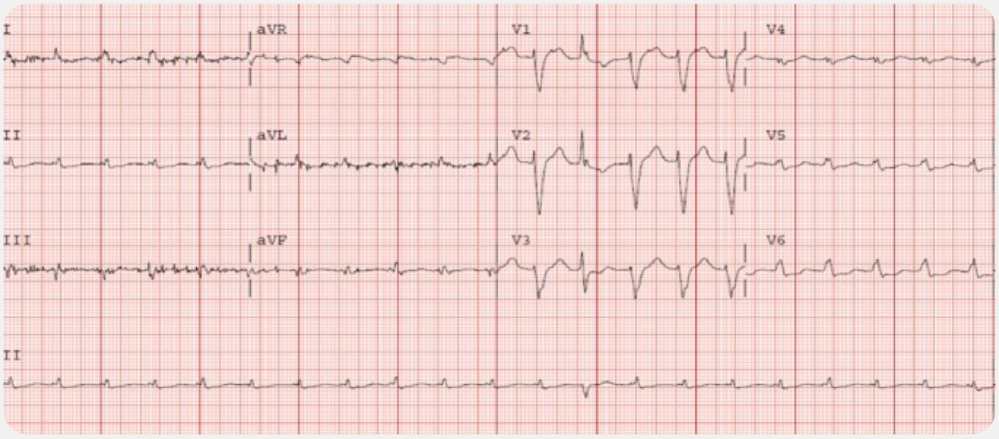
Longitudinal strain bull's-eye map[15]
Image reproduced with permission from Baptista et al.

Look for[4,15-19]**:**

- Reduction in longitudinal strain with relative apical sparing (shown)
- Biatrial enlargement
- Refractile myocardium

Findings of low-flow, low-gradient AS pattern should further raise suspicion of ATTR-CM.[14]

ELECTROCARDIOGRAPHY



Left bundle branch block with low voltage in limb leads[20]
Image reproduced with permission from Taiwo et al.

Look for[17,21,22]**:**

- Low QRS voltage compared to degree of LV wall thickening or relative to LV wall thickness
- Pseudo-infarction, AV conduction delays (e.g. atrial fibrillation)

In addition to these echo and ECG findings, multisystem manifestations and intolerance to common heart-failure medications* should be considered red-flag symptoms for ATTR-CM.[2,4,13,17,22-25]

While echo and ECG may help raise clinical suspicion for ATTR-CM, they lack specificity to diagnose ATTR-CM alone.[4]

*Patients with ATTR-CM can have intolerance to standard medications for heart failure, including ARNi, ACEi, ARB, or beta blockers.[4]

ACEi=angiotensin-converting enzyme inhibitor; ARB=angiotensin receptor blocker; ARNi=angiotensin receptor-neprilysin inhibitor; AV=atrioventricular; ECG=electrocardiography; echo=echocardiography; QRS=Q wave, R wave, S wave.

TAKE ACTION TO IDENTIFY ATTR-CM

PATIENTS WITH BOTH AS AND ATTR-CM HAVE WORSE CLINICAL OUTCOMES COMPARED TO THOSE WITH AS ALONE[1]:

↑90%
Increased risk of heart failure hospitalization

↑50%
Increased risk of death after an AVR

↑30%
Increased risk of death

Improved clinical outcomes start with a timely and accurate diagnosis

CONFIRMING AN ATTR-CM DIAGNOSIS[4,13]

1 **Rule out AL amyloidosis** with simple monoclonal light-chain assays

2 **Detect amyloid deposition** in myocardial tissue with nuclear scintigraphy or cardiac biopsy

3 Once ATTR-CM is confirmed, **use genetic testing** to determine if it is hereditary

Click here to learn more about suspecting ATTR-CM

AL=light chain amyloidosis; AVR=aortic valve replacement.

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