

Left Atrial Enlargement in Primary Cryptogenic Strokes Without Atrial Fibrillation

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Background

- The relationship between left atrial enlargement (LAE) and primary cryptogenic stroke (PCS) remains a mystery.
- Previous literature found the severity of LAE to be an independent risk factor in cases of PCS, recurrent ischemic strokes, and paroxysmal atrial fibrillation

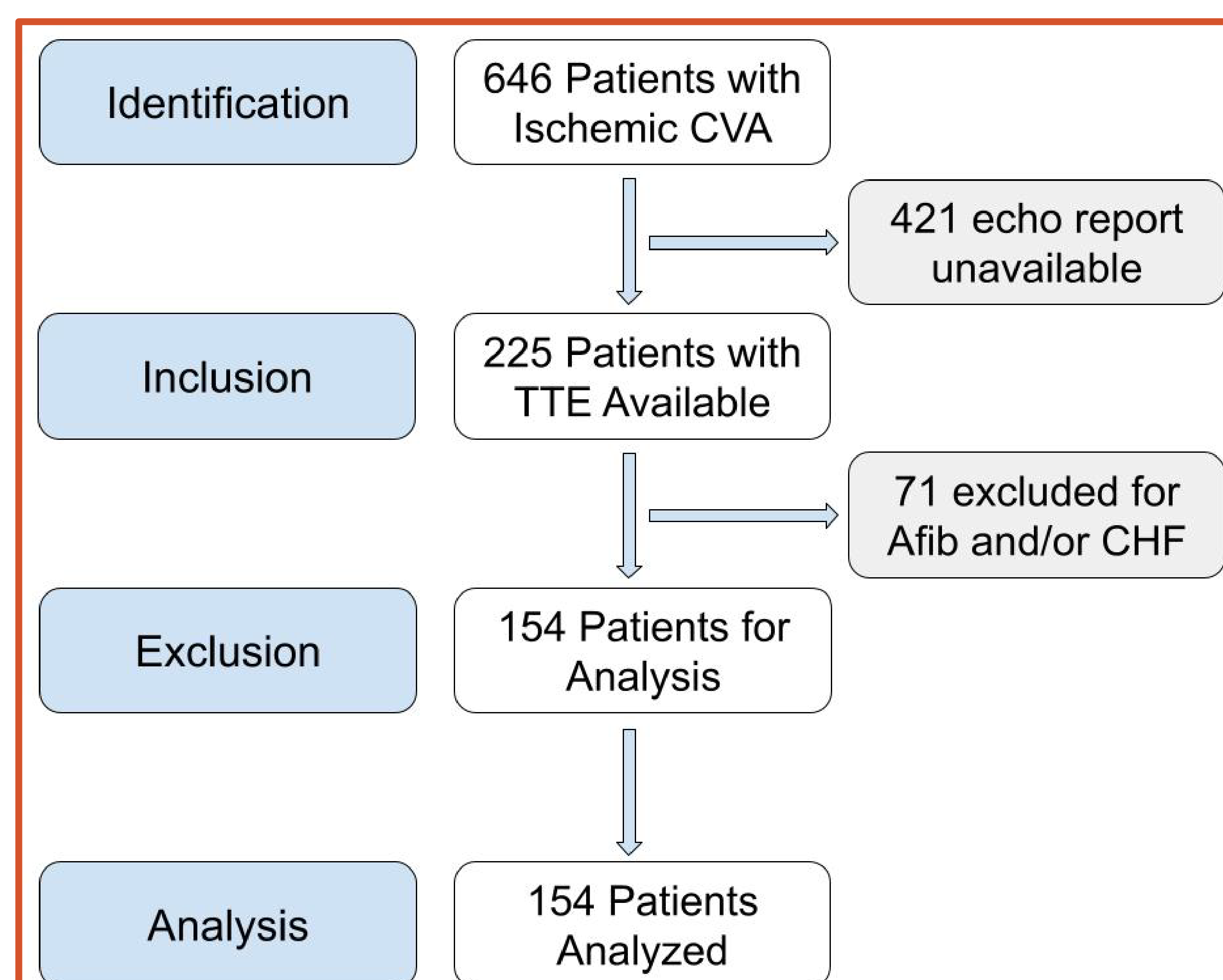
Objectives

- Identify incidence of LAE in PCS
- Identify potential risk factors for PCS in patients with LAE
- Describe echocardiographic findings of LAE in PCS

Methods

- Multi-center retrospective study of patients identified with a primary diagnosis of CVA over a three year period (FIG.1).
- Detailed chart review excluded patients with known etiologies for PCS including atrial fibrillation, atrial flutter, prior stroke, systolic heart failure, carotid artery stenosis, etc.
- Diagnosis of LAE utilized a composite of criteria for transthoracic echocardiogram (TTE) measurements including left atrial diameter (LAD) and left atrial volume index (LAVI).

Figure 1. Patient Identification

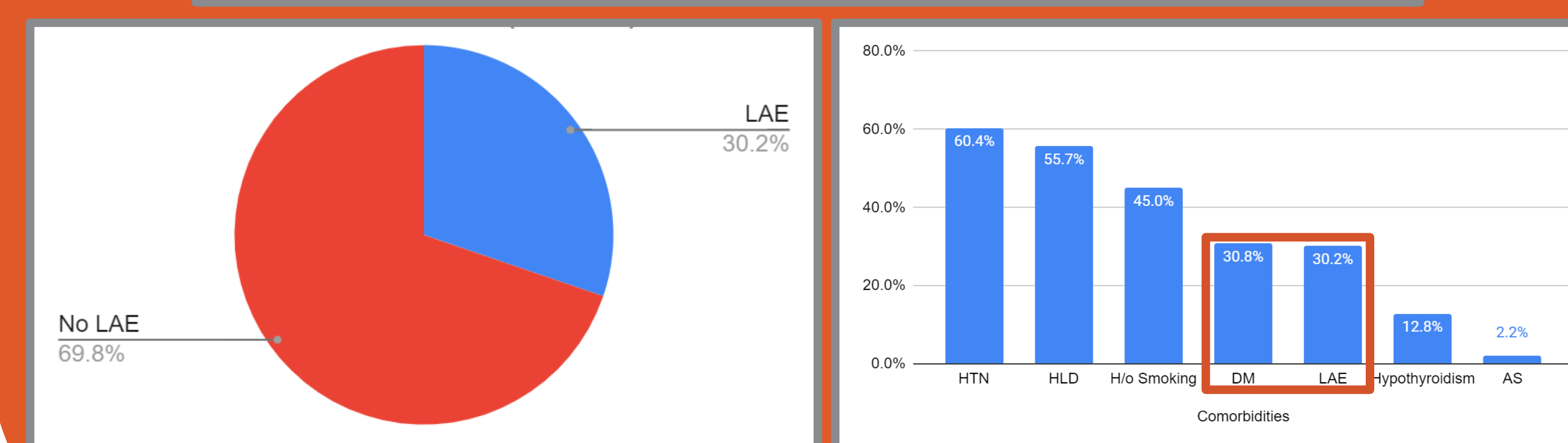


The authors have no conflicts of interest to report.

This research was supported (in whole or in part) by HCA Healthcare and/or an HCA Healthcare affiliated entity. The views expressed in this publication represent those of the author(s) and do not necessarily represent the official views of HCA Healthcare or any of its affiliated entities.

Figure 2. Results

	LAE	No LAE	LAE	Test	P-Value	
Sample Size	N	80	74			
	Mean	62.86	67.05			
	StDev	13.54	13.99	T-Test	0.0305	
Age	N	50	46			
	Mean	9.56	6.37			
	StDev	10.19	6.84	T-Test	0.0365	
Stroke Score	N	72	68			
	Mean	3.35	4.08			
	StDev	0.55	0.87	T-Test	<.0001	
LAD	N	71	67			
	Mean	1.73	2.15			
	StDev	0.29	0.54	T-Test	<.0001	
LADI	N	20	49			
	Mean	36.51	58.00			
	StDev	9.74	15.34	T-Test	<.0001	
LAESV	N	20	49			
	Mean	18.44	29.68			
	StDev	5.13	7.37	T-Test	<.0001	
LAESVI	N	2	2			
	%	0.03	0.03	Chi Square	0.9370	
	N	30	22			
Diastolic HF	Government	%	0.38	0.30		
	N	42	44			
	Other	%	0.53	0.59		
Payer Status	N	8	8			
	Uninsured	%	0.10	0.11	Chi Square	0.5930
	N	17	10			
Hispanic	%	0.21	0.14			
	N	55	60			
	Not Hispanic	%	0.69	0.81		
Ethnicity	N	8	4			
	Unknown	%	0.10	0.05	Chi Square	0.2084
	N	13	8			
Black	%	0.16	0.11			
	N	8	11			
	Other	%	0.10	0.15		
Race	N	7	3			
	Unknown	%	0.09	0.04		
	N	52	52			
White	%	0.65	0.70	Chi Square	0.3863	
	N	43	32			
	F	%	0.54	0.43		
Sex	N	37	42			
	M	%	0.46	0.57	Chi Square	0.1924
	N	26	21			
DM	%	0.33	0.28	Chi Square	0.5789	
	N	55	53			
	HTN	%	0.69	0.72	Chi Square	0.6973
HLD	N	4	4			
	%	0.05	0.05	Chi Square	0.9098	
	N	39	41			
Smoker	%	0.49	0.55	Chi Square	0.4089	
	N	7	5			
	Expired/Hospice	%	0.09	0.07	Chi Square	0.6448
EF	N	62	67			
	Mean	0.62	0.60			
	StDev	10.34	8.55	T-Test	0.1477	



Discussion

- All study criteria were met by 154 patients (FIG.2) for analysis, where baseline characteristics included:
 - 79 (51%) male
 - 104 (67.5%) Caucasian
 - 108 (70%) diagnosis of hypertension, 80 (52%) previous or current tobacco users, and 47 (31%) diagnosis of diabetes.
- Our preliminary analysis found 74 (48%) of patients met at least one criteria for LAE. The mean LAD for patients with and without LAE was 4.1cm and 3.4 cm, respectively (SD .87 vs .55, p<.0001).
- The mean LAVI for patients with and without LAE was 29.68 mL/m² and 18.44 mL/m², respectively (SD 7.37 vs 5.13, p<.0001).

Conclusions

- Our findings support the significance of LAE as a risk factor for cases of PCS.
- Multiple risk factors were identified in our study population that reflect the importance of preventative counseling for patients with hypertension, hyperlipidemia, histories of tobacco use, and diabetes.
- Further research may elucidate whether LAE alone or in the setting of comorbidities warrant universal screening practices or prophylactic therapies to prevent cases of PCS.

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