Title: The correlation between left atrial volume index and cerebrovascular stroke

Category: Arrhythmias and Clinical EP

Abstract

Background: Increased left atrial (LA) size was associated with poor cardiovascular outcomes such as the development of heart failure, atrial fibrillation (AF), and stroke in the elderly.

Aim of the work: To determine the relation between left atrial volume index (LAVI) and the occurrence of ischemic cerebrovascular stroke (CVS) in patients with sinus rhythm.

Patients and Methods: A prospective analysis of the data of patients admitted to a tertiary care center. Left atrial volume index (LAVI) was measured in 1222 patients admitted to a tertiary care center with first attack of acute ischemic cerebrovascular stroke (CVS) and the data was matched with 1222 patients admitted by diagnosis other than acute ischemic stroke. Patients with valvular heart diseases, history of AF and with known cardioembolic source of stroke as left ventricular thrombi or masses were excluded from both groups.

Results: The mean age was 61.1±14.4, 61.5±12.4 years, males were 806 (71.43%), 852 (73.47%) respectively. LAVI was 35±10.3 ml/m2 in CVS group while 25.8±6.4 ml/m2 in non-CVS group which was statistically significantly (P value= 0.02*).

Table (1): Baseline patient demographic, clinical, laboratory, echocardiographic data

		Total (n=2444)	Acute CVS (n=1222)	No CVS (n=1222)	*P*-value
Age (years)			61.1±14.4	61.5±12.4	**0.75**
Sex (Males)			806 (66%)	852 (70%)	**0.65**
Risk Factors	**DM**		655 (53.6%)	603 (49.3%)	**0.6**
	HTN		702 (57.5%)	675 (55.2%)	**0.55**
	Smoking		599 (49%)	564 (46.2%)	**0.71**
	Dyslipidemia		310 (25.4%)	299 (24.5%)	**0.81**
Clinical examination	**Mean BP (mmHg)**		122±15	119±17	**0.88**
	HR (bpm)		82±16	85±18	**0.76**
Laboratory data	**Hb (g/dl)**		12.3±1.3	12.9±1.7	**0.61**
	Platelets (10^3/l)		255±110	235±95	**0.35**
	INR		1.15±0.11	1.09±0.18	**0.75**

Ejection Fraction %	55±12	51±11	**0.41**
Left atrial volume index (ml/m2)	35±10.3	25.8±6.4	**0.002***
Results are represented as number (%) or mean ± standard deviation, BP = Blood Pressure, HR = Heart Rate, Hb = Hemoglobin, WBC = White Blood Count, INR = International Normalization Ratio, * significant P value < 0.05			

Conclusion: LAVI can be used as a strong predictor for the occurrence of CVS in patients with sinus rhythm.