

Introduction

The development of an ischemic event, whether silent or painful, represents the cumulative impact of a sequence of pathophysiological events, each ischemic episode is initiated by an imbalance between myocardial oxygen supply and demand that may ultimately be manifested as angina pectoris, this sequence of events can be termed as ischemic cascade, the significance of this concept resides in the fact that it redirects the focus from the end result (angina) to the more fundamental underlying pathophysiological factors that preceded, specifically this events include diminished left ventricular compliance, decrease myocardial contractility, increased left ventricular end-diastolic pressure so increase ventricular filling pressure, electrocardiographic (ECG) changes, then angina pectoris. (*Nwesto et al., 1987*)

Left atrial enlargement is closely related to the chronicity and intensity of the burden of increased ventricular filling pressure. (*Lester et al., 1999*)

Typically ischemic heart disease (IHD) has a long period of subclinical dysfunction, increased filling pressure reflected by enlarged left atrial size. (*Lester et al., 1999*)

Left atrial volume index (LAVI) is hypothesized to be a mirror of the burden of subclinical and overt IHD, also LAVI is

a preferred method for determining LA size and provides incremental prognostic information beyond that afforded by clinical risk factors. (*Pritchett et al., 2003*)

So LAVI reflects the chronicity and magnitude of the increased left ventricular filling pressure and is closely related to general cardiovascular risk burden. (*Simec et al., 1995*)(*Appleton et al., 1993*)

Multiple studies have shown the value of normal LAVI for the prediction of general cardiovascular risk (*Moller et al., 2003*)(*Beinart et al., 2004*) and multiple studies also have shown the value of normal stress echocardiographic test for the prediction of low ischemic risk. (*Elhendy et al., 1996*).

In many clinical settings, stress echocardiographic testing might not be available, whereas it is often possible to obtain a focused echocardiographic examination, which could include measurement of LAVI.