

Vessels and Endothelium

10.6 24-Hour Blood Pressure Monitoring: Association Between AASI (Ambulatory Arterial Stiffness Index) and Subclinical Target Organ Damage

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Introduction: AASI is a novel measure of arterial stiffness, which can be readily determined from ambulatory blood pressure recordings and which independently predicts cardiovascular mortality in hypertensive subjects. Using all of the blood pressure readings, we plotted diastolic against systolic blood pressure from each individual and calculated the regression slope. The ambulatory arterial stiffness index (AASI) was defined as 1 minus this regression slope. Relation between diastolic and systolic blood pressure over 24 hours provides a measure of arterial stiffness.

Arterial stiffness predict cardiovascular events in hypertensives.

Methods: We studied 125 patients (mean age, 65 years; 71 men) with essential hypertension (I-II grade following guidelines ESC-ESH 2003).

Aim of our study was the evaluation in hypertensives the association between AASI and Left ventricular mass index (normal value women <110 g/m²; men <130 g/m²); Renal resistive index (RRI; normal value <0.70). Intima media thickness (normal value <0.9 mm) of common carotid artery (IMT) and central artery of retina resistive index (CARRI; normal value <0.70)

We excluded patients affected by secondary hypertension, renal disease, diabetes, carotid plaque.

All patients underwent echocardiogram, renal interlobar artery echocolor Doppler, central artery of retina colour Doppler and 24 h ambulatory blood pressure monitoring.

Results: Results in the table show that subclinical target organ damage was higher in group with higher AASI.

AASI	N°	LVMi (g/m ²)	IMT (mm)	Renal Resistive Index	Retina Resistive Index	SBP (mmHg)	DBP (mmHg)
> 0.70	45	125±15	0.9±0.2	72±2	75±2	145±15	84±6
< 0.70	80	115±15	0.7±0.2	64±3	66±3	135±10	86±5
P		<0.05	<0.05				0.048

Conclusions: In conclusion patients with higher AASI have increased RRI, IMT, CARRI and LVMi this is very important for risk stratification in essential hypertension.