

**DETERMINANTS OF ABNORMAL LEFT VENTRICULAR WALL THICKENING IN PATIENTS WITH ESSENTIAL HYPERTENSION**

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We have shown abnormal (abnl) LV relative wall thickness (RWT) is an independent predictor of complications in essential hypertensive (EH) pts. We studied 381 uncomplicated EH pts by echocardiography to determine the relationship between abnl RWT and age, systolic blood pressure (SBP), diastolic blood pressure (DBP), cholesterol level (chol), height (ht), weight (wgt), sex and race. Relative wall thickness, defined as twice the LV free wall thickness divided by the LV internal dimension,  $\geq 0.45$  was considered abnl. The study group consisted of 249 men and 132 women with a mean age=47 $\pm$ 13 years, SBP=156 $\pm$ 22 mm Hg, DBP=98 $\pm$ 12 mm Hg, and chol=239 $\pm$ 54 mg/dl; 11% were black. Abnl RWT was found in 55 pts. In univariate analysis, age (p=0.0006), SBP (p<0.0001), DBP (p=0.0002), chol (p=0.02), ht (p=0.01) and race (p=0.03), but not sex (p=0.55) or wgt (p=0.57), were associated with abnl RWT. In multivariate analysis, only chol (p=0.02), race (p=0.04), DBP (p=0.05) and probably age (p=0.06) were predictors of abnl RWT. ht (p=0.51), wgt (p=0.26), and SBP (p=0.19) did not contribute significantly to multivariate equations. Thus, we conclude that abnl LV wall thickening reflects multiple factors including chol, race, DBP, and age, but not sex, ht and wgt.

**RELATIONSHIP BETWEEN PARATHYROID HORMONE AND IMPAIRED MICROCIRCULATION IN MODERATE ESSENTIAL HYPERTENSION**

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The role of non-hemodynamic factors on the microcirculation in patients with essential arterial hypertension has not yet been studied. In a series of 36 patients (age 45.3 $\pm$ 2.1 years) with newly diagnosed, previously untreated moderate essential hypertension (mean SBP 160 $\pm$ 3.4 mm Hg, mean DBP 102 $\pm$ 1.5 mm Hg) parameters of the capillaroscopic examination of the finger microcirculation (mean number (NRCAP) and length (LECAP,  $\mu$ m) of the capillaries, diameter ( $\mu$ m) of the efferent (EFDI) and afferent (AFDI) capillaries and mean red blood cell velocity (RBCV,  $\mu$ m/sec) which was measured by the flying spot technique were correlated with a number of hormones (sampled after an overnight fast) including insulin, cortisol, aldosterone, renin and parathyroid hormone (PTH). Significant correlation (p < 0.05) could be obtained between several parameters of the microcirculation and PTH: PTH (23.6 $\pm$ 2.0 (SEM) pg/ml) -NRCAP (15.3 $\pm$ 0.8): r=-0.535, p=0.038; PTH-LECAP (219 $\pm$ 24): r=-0.429, p=0.107; PTH-EFDI (183 $\pm$ 0.38): r=0.463, p=0.028; PTH-AFDI (2.87 $\pm$ 0.35): r = 0.631, p=0.011; PTH-RBCV (780 $\pm$ 76): r=-0.615, p=0.019. All patients had PTH levels (mean 27, range 10-58 pg/ml) within the reference limits. None of the other hormones assayed could reveal any statistical significance with the parameters of the microcirculation.

**Conclusion:** In patients with moderate essential arterial hypertension, PTH is inversely correlated with the number of capillaries and the capillary red blood cell velocity, while it is positively correlated with the efferent and the afferent capillary diameter.

**CORONARY ANGIOGRAPHIC DIFFERENCES BETWEEN HYPERTENSION AND NORMOTENSION.**

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320 untreated primary hypertensives (H) and 320 normotensives (N) similar in age and gender distribution, underwent quantitative coronary angiography because of effort angina and positive exercise test. In all pts at least one significant stenosis of a major coronary branch was documented. Prevalence of single and double vessel disease (VD) in the 4th and 5th decades of life was similar in the two groups and tended to decline with aging. Prevalence of triple VD was also similar in the two groups in the 4th and 5th decades. In the 6th and 7th decades it rose with age and reached a peak at the 7th decade; the percentages of H in the 6th and 7th decades with triple VD were significantly (p < 0.01) greater (40 and 50%, respectively) than the corresponding values in N (25 and 31%, respectively). Left main was not more involved in H. Pressure was moderately and similarly raised at any age in H; serum cholesterol and triglycerides, blood glucose and smoking habit were comparable in the two groups. Thus, coronary narrowings or multiple VD does not appear to be accelerated by hypertension. Starting from the 6th decade the evolution of the coronary disease seems to be aggravated in H, as reflected by an augmented number of diseased vessels; this process is probably related to high blood pressure in itself; whether the severity of hypertension might also exert an influence is not inferable from this study. Although in high blood pressure coronary disorders other than atherosclerosis have a putative part in coronary events, the link between epicardial branch narrowings and classic effort angina seems to be a substantial one.

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**Poster Displayed: 9:00AM-12:00NOON**

**Author Present: 11:00AM-12:00NOON**

**Hall F, West Concourse**

**Cardiac Pacing**

**PERICARDIAL ATTACHMENT OF TEMPORARY PACING LEADS: A SAFE ALTERNATIVE.**

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Temporary pacing leads are routinely attached to the right ventricle and right atrium (RV, RA) during cardiac surgery. Attachment is accomplished by either passing the leads through the epicardium or by securing them to the epicardial surface by sutures. Both methods carry the potential risk of epicardial tear, hemorrhage and tamponade. Furthermore, atrial pacing is frequently unsuccessful due to high threshold.

A new method by which leads are attached to the cardiac aspect of the pericardium and only about the RA or RV has been tested in 25 cardiac surgical pts. The pericardial RA (PRA) leads were compared to conventional epicardial or appendageal RA (ERA, ARA) leads, and the pericardial RV leads (PRV) to subepicardial RV (SERV) leads.

None of the PRA leads have failed, while of the ERA and ARA leads, 4 and 5, consecutively, failed. The mean thresholds in the 1st post-op day of the PRA leads was significantly (P < .05) lower than the ERA and ARA leads, 2.60 $\pm$ 1.1 mA, 8.7 $\pm$ 5.7 mA and 12.6 $\pm$ 3.8 mA, consecutively. None of the RV leads has failed, and the thresholds of the PRV and SERV leads were similar, 2.0 $\pm$ 1.4 mA and 1.5 $\pm$ 0.5 mA, consecutively. The pericardially attached leads were effective until removal on 5th post-op day, with only minimal increase in threshold. There were no complications associated with removal of the leads.

Thus, the method of pericardial attachment of pacing leads is effective, reliable and safe.