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Heart

5.26 Left Ventricular Hypertrophy Prevalence by Different Left Ventricular Mass Indexes

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Introduction. Left ventricular mass (LVM) indexed to body surface area (BSA) can have not enough sensitivity to diagnose left ventricular hypertrophy (LVH) in obese subjects, in whom LVM indexed to height at 2.7 power (h2.7), on the contrary, showed a better sensitivity.

Aim. to assess the different LVH prevalence according to the two different LVM indexes, by body mass index (BMI) in a population of an hypertension centre echolab.

Methods. In a two year period (2005-2007) we evaluated 1608 consecutive subjects submitted to echocardiography (761 M, 847 F, mean age 63.29 years, range 11-93), assessing in particular BSA indexed LVM (BSALVM) and h2.7 indexed LVM (HLVM). Study population was divided in two groups, according to BMI greater or lesser than 27.8 Kg/m2 in men and 27.3 Kg/m2 in women (above these values were reported significant differences between the two index means in identifying LVH).

Results. 604 subjects had BMI > chosen indexes, and 1004 subjects < to those indexes. When higher BMI is considered, BSALVM identified 248 subjects (41.1%) with LVH (LVM > 125 g/m2 in men, and > 110 g/m2 in women), while HLVM (LVH = LVM > 49.2 g/h2.7 in men, and > 46.7 g/m2.7 in women) in 411 subjects (68%) ($p<0.05$). In lower BMI, BSALVM identified LVH in 234 subjects (23.3%), while HLVM in 370 subjects (36.9%) ($p<0.05$). Assessing the differences in sensitivity between two indexes among different BMI deciles, we observed an accordance when BMI was <24.7 or between 27.7 and 31, and a discordance, with greater sensitivity for HLVM when BMI was between 24.7 and 27.7, and > 31 Kg/ m2, with a significantly different trend of the curve in discordance intervals.

Conclusions. In our study population HLVM showed a better sensitivity than BSALVM in identifying LVH, not only in obese subjects, but even in only overweight ones, which are numerous mostly among hypertensive patients. Only in really thin subjects the two way of indexation were comparable in identifying LVH, suggesting how it would be better to use in most circumstances HLVM to identifying a well-known high cardiovascular risk conditions such as LVH.