Heart

5.23 Determinants of Left Ventricular Mass (LVM) in White Obese Women
*G. Salvetti (1), F. Santini (1), A. Pucci (1), D. Versari (2), A. Viridis (2),
P. Fierabracci (1), G. Scartabelli (1), C. Palagi (3), V. Di Bello (3), A. Pinchera (1),
A. Salvetti (2)*
(1)Dipartimento di Endocrinologia e Rene, Pisa; (2)Dipartimento di Medicina
Interna, Pisa; (3)Dipartimento CardioToracico, Pisa, Italy

Aim. To identify the parameters that influence LVM in a population of obese women. Data are reported as mean ± SD or range.

Methods. The influence of various parameters on LVM was assessed by multivariate analysis using LVM as the dependent variable and the various parameters that showed a significant correlation with LVM by univariate analysis as independent variables.

Results. 166 obese women, age 41 ± 12 years (19-67), weight 111.6 ± 18 kg (78-185), body mass index (BMI) Kg/m2 43.1 ± 6.3 (32.1-66.3), waist circumference (WC) 122.9.1 ± 14.6 cm (93-178), hip circumference (HC) 130.1 ± 13.5 cm (104-190), waist-to-hip ratio (WHR) 0,94 ± 0.09 (0.65-1.31), visceral fat (VF) measured with ultrasound technique 82.7 ± 24.3 mm (25-160), systolic blood pressure (SBP) 129.3 ± 14.6 mmHg (90-190) and diastolic (DBP) 81.8 ± 9.8 mmHg (60-120). Of these 28% were hypertensive (24% under drug therapy) and 17% were diabetic (15% under drug therapy). The duration of obesity was 22.7 ± 11.1 years (3-55). By echocardiography we evaluated: LVM as such 200.55 ± 42.35 grams (116, 4-377.2) or indexed to height gr/h2.7 (LMVI/h 2.7) 56.2 ± 12.7 (28.6-95) or for the body surface area (LVMI) 95.3 ± 19.3 gr/m2(49 -163). When LVMI/h2.7 was calculated, 68% of patients appeared to have left ventricular hypertrophy, while when LVMI was considered only 19% had hypertrophy. The data of multivariate analysis are presented in table.

	Age (partial r²)	Duration of obesity (partial r²)	SBP (partial r²)	WHR (partial r²)	BMI (partial r²)	Weight (partial r²)	Total r²
LVMI gr/m²	0.055	0.057	0.032	0.036	ns	ns	0.32
LVMI gr/ h².7	0.1	0.044	ns	0.029	0.12	ns	0.38
LVM gr	0.04	0.052	0.032	0.036	ns	0.1	0.36

Conclusions. The three models of multivariate analyses predict similar values of LVM (38-32%). Beside age and duration of obesity, the only anthropometric parameter that was independently and directly associated with LVM was WHR, suggesting a role of fat distribution in determining the values of LVM.