Metabolic Aspects and Mechanisms

7.5 Brisighella Heart Study: Metabolic Syndrome and Predictive Factors

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Introduction: To value Metabolic Syndrome (MetS) incidence in a free-living population and the parameters that predict its development.

Methods: The Brisighella Heart Study, began in 1972 from a Prof. G. Descovich idea, is a longitudinal study, with a quadrennial follow-up. BHS was born to verify the spontaneous trend of the major risk factors for atherosclerosis and cardiovascular disease in the rural community of Brisighella. Data considered for this elaboration belong to 1992 and 1996 surveys. For the diagnosis of MetS we used ATPIII criteria adopting Body Mass Index (BMI) instead of waist circumference.

Results: Of the 1442 subjects 712 men (M), 730 women (W) that came in both surveys, MetS incidence in 1992 survey was 19.8% in M and 16.2% in W. 1183 in 1992 were not affected by MetS. 812 subjects (68.6%) (A) had only one diagnosis factor (under therapy or not) for MetS [401 M (49.4%), 411 W (50.6%)]. 371 (31.4%) (B) did not show any factor for MetS [170 M (45.8%), 201 W (54.2%)]. MetS prevalence in this group in 1996 was 17.2%. In A group 183 (22.5%) developed MetS in 1996. Applying multiple logistic functions (MLF), predictor parameters for MetS development in B group were: BMI (OR 2.003 IC95% 1.235-3.248 $p = 0.05$) and diastolic blood pressure (DBP) (OR 1.093 IC95% 1.006-1.187 $p = 0.036$). In M no considered parameter predicts MetS development. In W BMI (OR 2.231 IC95% 1.059-4.701 $p = 0.035$) and DBP (OR 1.350 IC95% 1.097-1.663 $p = 0.005$) predict MetS development. In A the most representative risk factor was hypertension (21.7%, BP>130/85 mmHg) and BMI (22.7%) for M, and hypertension (20.7%) for W. MLF shown that predictive parameters were: BMI (OR 1.154 IC95% 1.056-1.262 $p = 0.002$), triglycerides (OR 1.005 IC95% 1.000-1.009 $p = 0.047$) e glycaemia (OR 1.014 IC95% 1.000-1.028 $p = 0.044$) in M and BMI (OR 1.146 IC95% 1.070-1.227 $p = 0.0001$), systolic blood pressure (SBP) (OR 1.023 IC95% 1.005- 1.042 $p = 0.014$), HDL-C. (OR 0.0951 IC95% 0.0927- 0.976 $p = 0.0001$) in W.

Conclusions: MetS incidence and prevalence in our population is similar with the others Italian populations. In M without any risk factor (RF), no RF predicts MetS development, in W BMI and DBP predict MetS development. In subjects with at least one RF, predictive parameters for M were BMI, triglycerides and glycaemia, and SBP, HDL-C for W.