

Metabolically Healthy Obesity and Protective Factors of Cardiovascular Diseases as a Result from a Longitudinal Study in Tebessa (East of Algeria)

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Abstract : Introduction: Obesity is recognized as a cardiovascular risk factor. It is associated with cardio-metabolic diseases. Its prevalence is increasing significantly in both rich and poor countries. However, there are obese people who have no metabolic disturbance. So we think obesity is not always a risk factor for an abnormal metabolic profile that increases the risk of cardiometabolic problems. However, there is no definition that allows us to identify the individual group Metabolically Healthy but Obese (MHO). Objective: The objective of this study is to evaluate the relationship between MHO and some factors associated with it. Methods: A longitudinal study is a prospective cohort study of 600 participants aged ≥ 18 years. Metabolic status was assessed by the following parameters: blood pressure, fasting glucose, total cholesterol, HDL cholesterol, LDL cholesterol, and triglycerides. Body Mass Index (BMI) was calculated as weight (in kg) divided by height (m²), $BMI = \text{Weight}/(\text{Height})^2$. According to the BMI value, our population was divided into four groups: underweight subjects with $BMI < 18.5 \text{ kg/m}^2$, normal weight subjects with $BMI = 18.5\text{--}24.9 \text{ kg/m}^2$, overweight subjects with $BMI = 25\text{--}29.9 \text{ kg/m}^2$, and obese subjects who have ($BMI \geq 30 \text{ kg/m}^2$). A value of $P < 0.05$ was considered significant. Statistical processing was done using the SPSS 25 software. Results: During this study, 194 (32.33%) were identified as MHO among 416 (37%) obese individuals. The prevalence of the metabolically unhealthy phenotype among normal-weight individuals was (13.83%) vs. (37%) in obese individuals. Compared with metabolically healthy normal-weight individuals (10.93%), the prevalence of diabetes was (30.60%) in MHO, (20.59%) in metabolically unhealthy normal weight, and (52.29%) for metabolically unhealthy obese ($p = 0.032$). Blood pressure was significantly higher in MHO individuals than in metabolically healthy normal-weight individuals and in metabolically unhealthy obese than in metabolically unhealthy normal weight ($P < 0.0001$). Familial coronary artery disease does not appear to have an effect on the metabolic status of obese and normal-weight patients ($P = 0.544$). However, waist circumference appears to have an effect on the metabolic status of individuals ($P < 0.0001$). Conclusion: This study showed a high prevalence of metabolic profile disruption in normal-weight subjects and a high rate of overweight and/or obese people who are metabolically healthy. To understand the physiological mechanism related to these metabolic statuses, a thorough study is needed.

Keywords : metabolically health, obesity, factors associated, cardiovascular diseases

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