ARE FASTING AND POST-LOAD INSULIN GOOD PREDICTORS OF CARDIOVASCULAR RISK FACTORS.

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Objectives: Assuming that insulin levels are reliable markers of insulin resistance, are increased fasting and/or post-load insulinemia good predictors of an adverse cardiovascular risk profile in epidemiological study?

Design and Methods: In the MONICA project a random sample of 1631 subjects (35-64 years old) living in the province of Luxembourg, free of antihypertensive drugs and hypoglycemiant agents were submitted to an oral glucose tolerance test (OGTT). Blood samples for insulin (Ins.) and glucose were drawn at 0 and 2 hours, were available: total cholesterol (TC), HDL-cholesterol (HDL-C), triglycerides (TG), blood pressure (BP), BMI.They were classified in 2 groups according to their level of fasting and 2hours insulinemia being either lower(group 1) or higher (group 2) than the 90th percentile value of the distribution of insulinemia.

Results: Comparisons between groups shows that mean BP, BMI, glycemia, TC and TG are higher ($p<0.0001$) in group2, HDL-C is significantly lower.In group2, hypertension is 2 times more frequent than in group1.Same observations are made for obesity (4 times more), impaired glucose tolerance and diabetes (10 times),high TG (3 times) and low rate of HDL-C (4 times). Insulin levels correlate better with BP and lipids in group1 than in group2.In group1, people are generally affected by no more than 1 CV risk factor, accumulation of 2,3 and more risk factors is significantly more frequent in group2 where 8.4% of individuals exhibit hypertension with obesity,diabetes and dyslipidemia. Comparisons between the group1 and other groups characterized by increased either fasting or postload Ins. strongly suggest that an isolated increase of fasting Ins. is already associated with an adverse CV risk profile.

Conclusions: Unquestionably the OGTT with measurement of fasting and 2 hours post-load insulinemia allows, in population studies, to identify people with a significant increase of major cardiovascular risk factors when hyperinsulinemia is diagnosed. Our results indicate that already fasting insulinemia level is a good predictor of our observations.