Abstract


Inverse association between serum phospholipid oleic acid and insulin resistance in subjects with primary dyslipidaemia.

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BACKGROUND & AIMS: Data on intake of oleic acid (OA) and insulin resistance (IR) are inconsistent. We investigated whether OA in serum phosphatidylcholine relates to surrogate measures of IR in dyslipidaemic subjects from a Mediterranean population.

METHODS: Cross-sectional study of 361 non-diabetic subjects (205 men, 156 women; mean age 44 and 46 y, respectively; BMI 25.7 kg/m(2)). IR was diagnosed by BMI and HOMA values using published criteria validated against the euglycemic clamp. Alternatively, IR was defined by the 75th percentile of HOMA-IR of our study population. The fatty acid composition of serum phosphatidylcholine was determined by gas-chromatography.

RESULTS: The mean (±SD) proportion of OA was 11.7 ± 2.0%. Ninety-two subjects (25.5%) had IR. By adjusted logistic regression, including the proportions of other fatty acids known to relate to IR, the odds ratios (OR) (95% confidence intervals) for IR were 0.75 (0.62-0.92) for 1% increase in OA and 0.84 (0.71-0.99) for 1% increase in linoleic acid. Other fatty acids were unrelated to IR. When using the alternate definition of IR, OA remained a significant predictor (0.80 [0.65-0.99]).

CONCLUSIONS: Higher phospholipid proportions of OA relate to less IR, suggesting an added benefit of increasing olive oil intake within the Mediterranean diet.

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