Hypovitaminosis D is associated with reductions in serum apolipoprotein A-I but not with fasting lipids in British Bangladeshis.

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BACKGROUND: Although hypovitaminosis D has been suggested to increase the risk of heart disease, its relation to components of the fasting lipid profile has not been clarified for specific ethnic groups.

OBJECTIVE: The objective was to determine the relation of circulating 25-hydroxyvitamin D [25(OH)D] concentrations to fasting lipid concentrations in South Asian subjects at risk of hypovitaminosis D.

DESIGN: The present study was conducted in 170 British Bangladeshi adults, 69 men and 101 women, from east London who were free of known diabetes or chronic disorders. Vitamin D repletion was assessed by measuring fasting serum 25(OH)D concentrations. Fasting lipid profiles were measured as part of a study of the risk factors for type 2 diabetes and ischemic heart disease, which included hypovitaminosis D.

RESULTS: A univariate analysis showed that total cholesterol, LDL cholesterol, and both apolipoprotein (apo) A-I and apo B concentrations correlated directly with serum 25(OH)D concentrations. However, a multiple regression analysis, which included all the documented risk factors for diabetes and ischemic heart disease, showed that the 25(OH)D concentration (vitamin D status) was an independent predictor of increasing apo A-I concentrations (standardized coefficient beta = 0.3; P < 0.001) but not of fasting lipid concentrations.

CONCLUSIONS: In this study of British South Asians, the data showed a positive relation of fasting apo A-I concentrations to serum 25(OH)D concentrations, independent of glycemia and other dietary, anthropometric, and lifestyle risk factors for type 2 diabetes and ischemic heart disease after multiple regression analyses. Subjects with hypovitaminosis D are likely to have an increased risk of ischemic heart disease independent of their increased risk of type 2 diabetes.

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