

OP 17: Association of somatotyping parameters with fasting blood glucose, insulin resistance and lipid profile parameters of a female diabetic population

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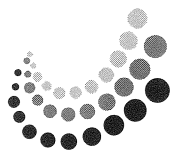
INTRODUCTION: Dyslipidemia, hyperglycemia and insulin resistance (IR) are common metabolic abnormalities present in diabetic subjects. These conditions can be controlled by good life style habits including maintenance of healthy weight (body composition). Somatotyping is a method of body compositions' assessment which describes individual's body composition using a 3-numeral rating. The components are endomorphy (relative fatness) mesomorphy (relative musculo-skeletal robustness), and ectomorphy (relative linearity or slenderness of a physique).

OBJECTIVES: Objective of the current study is to determine the association of somatotyping parameters with selected biochemical parameters of a female diabetic population.

METHODS: Group of 50 female diabetic subjects representing rural and sub-urban areas of Sri Lanka were selected. Ten and twelve hour fasting blood samples were analyzed for fasting glucose level (FBS) and lipid profile parameters using enzymatic colorimetric methods. Enzyme linked immunosorbent assay was used for serum insulin level assessment. Heath and Carter anthropometric somatotyping technique was used to determine the somatotypes. Homeostatic Model Assessment equation was used to calculate the IR.

RESULTS: Mean age of the population was 44 (± 7) years. Mean FBS and fasting insulin levels were 127.8 mg/dl and 14.8 μ U/ml respectively. Mean total cholesterol, triglyceride, high-density lipoprotein cholesterol and low-density lipoprotein cholesterol levels were 182.7 mg/dl, 102.7 mg/dl, 44.6 mg/dl and 117.5 mg/dl respectively. The mean somatotype of the population was 6.4-4.7-0.8 showing mesomorphic endomorph pattern (relative fatness > relative musculo-skeletal robustness). Mean Endomorphy and ectomorphy readings showed statistically significant differences ($P < 0.05$) when the population was divided in to groups as non-IR and IR (endomorph-5.7, 6.8, ectomorphy-1.5, 0.6), normoglycaemic – hyperglycaemic (endomorph-6.1, 6.7, ectomorphy-1.2, 0.6), normocholesterolaemic – hypercholesterolaemic (endomorph-6.3, 7.0, ectomorphy-1.0, 0.5) respectively.

CONCLUSION: Subjects who had unfavorable biochemical parameters were high in relative fatness (endomorph) and low in relative linearity (ectomorphy) which demonstrated the possibility of using somatotyping as a tool of metabolic risk assessment.



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