ISSN: 2659-2029
Proceedings of 2nd Research Symposium of the Faculty of Allied Health Sciences
University of Ruhuna, Galle, Sri Lanka
December 05, 2019

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Association between Dysglycemia, Body Mass Index and Body Compositions in a Group of Community Dwellers

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Background: Obesity is a leading cause of diabetes mellitus. There are no studies examining the relationship between Glycated haemoglobin (HbA1c) and components of body fat among Sri Lankans.

Objectives: The objective of this study was to determine how HbA1c associates with body mass index (BMI), total body fat mass (TBF), body fat percentage (BFP) and truncal fat mass (TRF) in a group of community dwellers, not detected to have diabetes previously.

Methodology: A group of 72 subjects (men=65) were included in the analysis after obtaining informed written consent. TBF, BFP, and TRF were measured using Dual Energy X-ray Absorptiometry (DEXA) scan. HbA1c level was measured using high performance liquid chromatography. BFP was calculated by dividing body fat content by body weight and expressing it as a percentage.

Results: Mean (SD) age of the group was 49(9) years. Mean (SD) height was 1.63(0.07) m while mean (SD) weight was 63.3(11.5) kg. Mean (SD) HbA1c concentration was 6 (1.1) %. HbA1c showed significant positive correlations with BMI (r=0.30, p=0.010) and TRF (r=0.28, p=0.015), after adjusting for age. However, correlations between HbA1c and TBF (r=0.223, p=0.056) and BFP (r=0.11, p=0.33) were not significant.

Conclusions: HbA1c correlates more with BMI and TRF than TBF indicating that the truncal fat is more connected with dysglycaemia.

Keywords**:** *Dysglycemia, Glycated haemoglobin level, Total body fat mass, Truncal fat mass, Body mass index*