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ORAL PRESENTATION

OR-1

Factors associated with Visceral Adiposity and Low Skeletal Muscle Index in an Opportunistic Health Screening Programme

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Introduction:

Obesity remains a major public health challenge in Malaysia, with prevalence continuing to rise. Body mass index (BMI) alone inadequately reflects fat distribution and muscle mass, potentially underestimating cardiometabolic risk. Visceral adiposity and skeletal muscle index (SMI) have been independently associated with adverse metabolic and cardiovascular outcomes. This study aimed to identify factors associated with elevated visceral fat level (VFL) and low SMI in our cohort.

Methods:

This cross-sectional study involved 211 adults who underwent BIA (Inbody 270S, South Korea) as part of an opportunistic health screening programme at Hospital Selayang. Anthropometric and body composition parameters were recorded. Independent factors of visceral adiposity (defined as VFL ≥ 10), and low SMI (< 7.0 kg/m² in men and < 5.7 kg/m² in women) were identified using multiple logistic regression (SPSS version 29.0).

Results:

The mean age of participants was 45.3 ± 12.6 years, with a female predominance (69.7%). Elevated VFL and low SMI were observed in 63.5% and 38.0% of the cohort. Low SMI was more common among participants with visceral adiposity (91%) compared with those without visceral adiposity (59.7%, $p < 0.001$). This relationship was confirmed in the regression analysis in which a low SMI was an independent predictor of visceral adiposity with an adjusted odds ratio (aOR) of 4.673 apart from being female (aOR 7.930) and high BMI (aOR 2.496). Conversely, visceral obesity was also found to be an independent predictor of low SMI (aOR 6.280) apart from BMI (aOR 0.428) and age (1.053).

Conclusion:

The high prevalence of visceral adiposity and its independent relationship with low SMI in this cohort suggests a substantial burden of sarcopenic obesity, which confers increased cardiometabolic risk. Early identification of these individuals may enable timely, targeted lifestyle interventions to mitigate risk of metabolic and cardiovascular complications.