Prevalence of dysglycemia and its associations with age and body mass index among semi urban community dwelling adults in Galle, Sri Lanka

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Introduction

Dysglycemia in the form of both pre-diabetes and diabetes mellitus is a leading metabolic abnormality which affects individuals in the world. Present investigation was aimed to study the gender wise prevalence of glycemic status, its associations with age and body mass index (BMI) and to determine an optimal cutoff of BMI to assess the risk of dysglycemia among semi urban community dwelling adults in Galle, Sri Lanka.

Methodology

Study design : Community based cross sectional study

Study population : Male and female adults in the age of 30 – 60 years (n=1120)

Study area : Galle district

Exclusion criteria :

- Subjects who are on any type of antilipidemic, antihypertensive therapy
- Intake of any long term medication (steroids, thyroxin, nutritional supplements etc.
- Pregnancy

Data collection :

- Fasting plasma glucose (FPG) in sample, anthropometric measurements

Data analysis :

- Dysglycemia was defined as FPG > 5.6 mmol/L (100 mg/dL).
- Correlations between dysglycemia and age, BMI in both genders were assessed.
- Logistic regression in SPSS was used to analyze gender differences in association of age and BMI with dysglycemia.
- Optimal cut-off point of BMI was determined using Youden index.

Ethical approval : Faculty of Medicine, University of Ruhuna (14.06.2017:3.9)

Results

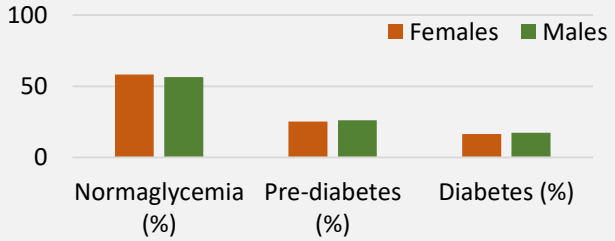

Figure 1: Gender wise prevalence of glycemic status

Table 1: Gender wise correlations between glycemic status vs age and BMI

	Females		Males	
	Age	BMI	Age	BMI
FPG	r=0.16 p=0.00	r=0.01 p=0.93	r=0.16 p=0.00	r=0.16 p=0.00

Table 3: Gender wise associations of age and BMI with dysglycemia

	Variable	OR	95% CI	p value
Females	Age	1.04	1.02–1.06	0.00
	BMI	1.01	0.99–1.03	0.47
Males	Age	1.05	1.02–1.08	0.00
	BMI	1.10	1.05–1.15	0.00

Optimal cut-off point of BMI for males was **22.86 kg/m²** (AUC 0.651, sensitivity 76.6%, specificity 53.9%) to determine the risk of dysglycemia

Conclusions

- The prevalence of dysglycemia in males was higher than that of the females in this cohort.
- An increase in age in both genders and BMI in males were significantly associated with dysglycemia.
- The cut-off value of BMI>22.86 kg/m^2 could be used to determine the risk of dysglycemia by means of overweight among male population.
- The area under curve (AUC) value in receiver operating characteristic curve of BMI for females was almost 0.5, it was not used for further to estimate sensitivity or specificity.