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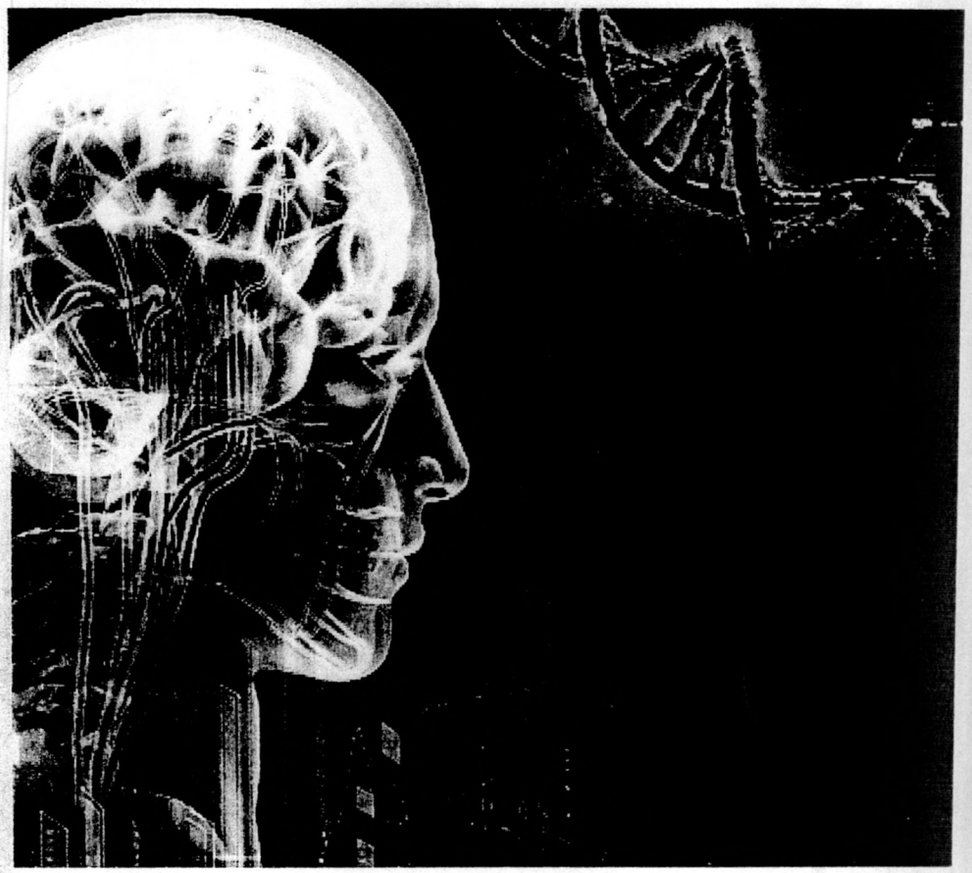

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Abstracts

OP 1

Is IR a better indicator to assess diabetes mellitus: A study among diabetics and non diabetics

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Insulin resistance (IR) is the main cause of type 2 diabetes mellitus and one of the most common underlying factors of metabolic syndrome. C-peptide is suggested as a better indicator of endogenous insulin secretion than insulin itself. The objective of this study was to determine the best parameter among fasting blood glucose (FBG), fasting serum insulin (FSI), fasting serum C-peptide (FSC), and IR to assess diabetes mellitus.

The study was carried out in diabetic (n=30) and non-diabetic (n=30) adults aged 35-55 years. Subjects were enrolled from a clinic attached to University of Sri Jayewardenepura. Venous blood sample (1.5 mL) was obtained after 10 hours overnight fast and FBG, FSI and FSC levels were analyzed using standard kits. IR was calculated using following equation.

HOMA-IR = FSI (μU/mL) × FBG (mmoL/L)/22.5.

Results were analyzed using SPSS version 21.

Diabetic subjects showed significantly higher mean FBG (145.47±71.29 mg/dL) (p=0.001), FSI (10.59±6.77μU/mL) (p=0.026), FSC (2.56±1.63 ng/mL) (p=0.001) and IR value (3.6±2.6) (p<0.001) compared to non- diabetic subjects (78.15±8.30 mg/dL, 5.82±2.65μU/mL, 1.07±0.60 ng/mL and 1.12±0.53 respectively). So IR has showed the most significant difference between two groups. FBG had a weak correlation with FSI (r=0.277), a moderate correlation with FSC (r=0.403), and a strong correlation with IR (r=0.795). FSI showed strong correlations with FSC (r=0.665) and IR (r=0.727) whereas FSC had strong correlation with IR (r=0.665) at 0.01 significance level.

Even though all assessed parameters were elevated in diabetic subjects, this study finding suggests that IR is a better indicator to assess diabetes mellitus than FBG, FSI and FSC.

OP 2

Risk of pharmaceutical contaminations; Cloxacillin contamination and prevalence of cloxacillin resistant bacteria in environmental samples, Sri Lanka

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Antibiotics are an important group of pharmaceuticals used extensively in health care for the treatment and prevention of microbial infections. Antibiotic resistance has become a major health concern; thus, there is a growing interest in exploring the occurrence of antibiotic resistant bacteria in environment. Cloxacillin (CLOX), a broad spectrum penicillin type antibiotic, is commonly used for community acquired pneumonia, superficial skin infections, cellulitis etc. The present study focused on quantification of CLOX and isolation of cloxacillin-resistant ($CLOX^r$) bacteria from ten wastewater discharge drains in some selected hospitals, Sri Lanka. Solid-Phase Extraction (SPE) and High Performance Liquid Chromatography (HPLC) were employed to quantify CLOX. Isolation of $CLOX^r$ bacteria was done by standard pour