International Conference on

APPLIED MICROBIOLOGY AND MICROBIAL BIOTECHNOLOGY &

International Conference on

MICROBIOME R&D AND BIOSTIMULANTS &

3rd International Conference on

INTERNAL MEDICINE & HOSPITAL MEDICINE   October 15-16, 2018   Ottawa, Canada

Albumin-creatinine ratio is more diagnostic sensitive than Cystatin-C in assessment of Diabetic peripheral neuropathy

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Background: Diabetic peripheral neuropathy is one of the most common cardiovascular complications among diabetes mellitus patients and occurs in more than half the population of diabetic patients world-wide. It is a common cause of foot ulcer, gangrene and amputation among diabetics. Thus, its prevention or early treatment can improve the quality of life of diabetic patients. In a bid to reduce it, various biochemical markers have been evaluated to enable early treatment and amelioration of diabetic neuropathy among diabetes mellitus patients.

Aim: Evaluation of the diagnostic relevance of Cystatin C versus Albumin-creatinine ratio in assessment of peripheral neuropathy in diabetic type 2 subjects.

Method: 102 type 2 DM subjects (66 females and 36 males) and 100 control subjects of same age range (40–80 years) were recruited for this study which includes 51 subjects with peripheral neuropathy and 51 subjects without peripheral neuropathy. Cystatin C, microalbuminuria, serum creatinine and HBA1c were analysed with standard methods.

Results: Cystatin C, microalbuminuria, albumin creatinine ratio, serum creatinine and glycated haemoglobin were significantly elevated ($P<0.05$) in diabetic subjects compared to the control. Cystatin-C (ng/ml), microalbuminuria (mg/l), albumin creatinine ratio (mg/mmol), creatinine (μmol/l)and HBA1c(%) is [105.52 ± 45.11; 90.07±20.29; 10.48 ± 4.82; 91.75±15.21;6.9±1.7] respectively. Microalbuminuria, albumin creatinine ratio, creatinine and uric acid showed significant increase ($P<0.05$) in subjects with neuropathy compared to those subjects without neuropathy [92.11± 22.82; 35.70±16.35; 2.61±1.1; 79.92±13.38; 6.38±1.79]. The ROC curve shows that albumin creatinine ratio showed significant ($P<0.05$) sensitivity to cardiovascular complication [AUC=0.714] while Cystatin-C showed no significant ($P<0.05$) sensitivity to peripheral neuropathy complication [AUC=0.553]

Conclusion: Cystatin C was found to be deranged in diabetics. However, albumin-creatinine ratio showed more diagnostic sensitivity for peripheral neuropathy than Cystatin C.

Biography

Blessing.K. Myke-Mbata Mbbs, Msc. MMCPath is a lecturer/researcher in Benue State University, Makurdi, Benue State, Nigeria.Currently serving as the Head, Department of Chemical Pathology. Have 15 publication in high repute journal and has been an editorial member of high repute.

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