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ANTIOXIDANT SUPPLEMENTATION AND KIDNEY FUNCTION STATUS OF WISTAR RATS FOLLOWING HIGH FAT DIET-STREPTOZOTOCIN (HFT-STZ) INDUCED TYPE 2 DIABETES

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The kidney function status of high fat diet-streptozotocin (HFD-STZ) induced non-insulin dependent diabetes mellitus (NIDDM) in albino rats fed antioxidant supplementation was monitored in vitro. Appropriate and recommended dietary allowed proportions of some potent antioxidant substances including: minerals, vitamins, α-lipoic acid, phytochemicals and a D-ribose-L-cysteine conjugate were assembled together in corn oil and stored at 4oC for use. Kidney function indices were assayed using standard methods, kits and equipments. Data analysis was done with SPSS version 20.0 and significant level was set at p≤0.05. There were a total of five study groups with ten rats each. Immediately after the induction of diabetes with HFD-STZ combination, treatment commenced and lasted for a total of 12 weeks, and analysis carried out at the 4th, 8th and 12th week of the study. Results obtained from the kidney function status investigation indicates that there was significant decrease (p≤0.05) in urea levels of the treated groups when compared to the controls (normal and diabetic) and this decrease was consistent as the treatment progressed. Creatinine, bicarbonate and potassium levels of both the treated and normal control groups were not statistically different (p≥0.05) when compared with the diabetic control group which increased steadily for creatinine and bicarbonate, but inconsistent for potassium level within the treatment duration. However, there was a significant increase (p≤0.05) in sodium and chloride levels of the treated and normal control groups, when compared with the diabetic control group respectively. The observed increase was consistent with treatment duration. The results therefore suggest that the antioxidant supplement might have a restorative effect on kidney function and also enhance effective electrolyte balance and control for easy movement of ions across cell membrane.

Biography

Chinaka N C has successfully completed his Phd from the University of Port Harcourt, Nigeria and currently seeking for a Postdoctoral opportunity in the field of Molecular Biology from any reputable institution. Currently, he is serving as a Lecturer in the Department of Medical Biochemistry, Ebonyi State University, Abakaliki, Nigeria. He has published more than 15 papers in reputed journals and participated in many conferences,training/workshop in the field of Biochemistry and Molecular Biology.

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