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The anti-angiogenic effect of fluvastatin on diabetic nephropathy patients

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Diabetic nephropathy (DN) is the most common cause of end stage renal disease that is associated with high rates of morbidity and mortality. It is characterized by abnormal angiogenesis that results in new vessels, which are often immature and play a pathological role in nephropathy. The progression of nephropathy is related to vascular growth factor signaling through receptor tyrosine kinases, specifically the vascular endothelial growth factor (VEGF) and angiopoietin families. Novel therapies that target angiogenic factors such as VEGF-A and angiopoietins could be an appealing option to treat DN. One of them is statin which is mainly known to reduce low-density lipoprotein cholesterol level. Although, there are growing evidences suggesting that statins may offer renoprotective effects, many trials failed to demonstrate the angiogenic effect of statin on kidney. Our objective was to assess the effects of statin on renal outcomes in DN by evaluating the alteration of angiogenesis in DN patients and assessing its pleiotropic effect on VEGF-A and Angiopoietin-2. To reach these objectives, we evaluated the level of VEGF-A and Angiopoietin-2 in 50 diabetic patients with increased urinary albumin excretion rate before and after the administration of 80 mg fluvastatin for 14 weeks using Enzyme-Linked Immunosorbent Assay (ELISA). Our results demonstrated that VEGF-A and angiopoietin-2 are increased in type 2 diabetic nephropathy patients. Administration of high dose fluvastatin demonstrated significant reductions in serum levels of VEGF-A and angiopoietin-2. In conclusion, the use of fluvastatin should be considered for patients with DN particularly in the early stages of the disease.

Biography

Noha Adel Ibrahim Mitwally has completed her Master degree in Biochemistry and Molecular Biology from Medical Research Institute, Faculty of Pharmaceutical Sciences, Alexandria University, Egypt. She is an Assistant Lecturer and Clinical Research Coordinator at College of Medicine, Dar Al Uloom University, Riyadh, KSA. She has long experience in clinical research and participated in many clinical researches of reputed international pharmaceutical companies.

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