بسم الله الرحمن الرحيم

MONA MAGHRABY

شبكة المعلومات الجامعية

التوثيق الالكتروني والميكروفيلم

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جامعة عين شمس

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قسم

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MONA MAGHRABY

Effect of Sodium Glucose Co Transporter 2 Inhibitor on Proteinuria In Diabetic Patients

Thesis

Submitted for partial fulfillment of M.D degree in Internal Medicine

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Contents

List of Abbreviations

ACEi:..... Angiotensin converting enzyme inhibitor.
ADA:..... American Diabetes Association.
AER:..... Albumin excretion rate.
AGE:..... Advanced glycation end products.
AKI:..... Acute kidney injury.
ARBs: ..... Angiotenin receptor blockers.
ASCVD: ..... Atherosclerotic cardiovascular disease.
BP: ..... Blood pressure.
CKD: ..... Chronic kidney disease.
Cr:..... Creatinine.
CV: ..... Cardiovascular.
DBP:..... Diastolic blood pressure.
DCCT/EDIC:..... Diabetes Control and Complications Trial/Epidemiology of Diabetes Interventions and Complications study.
DKA: ..... Diabetic ketoacidosis.
DKD: ..... Diabetic kidney disease.
DM:..... Diabetes Mellitus
DN: ..... Diabetic nephropathy.
DPP-4: ..... Dipeptidyl peptidase 4 inhibitors .
EM:..... Electron microscope.
ESKD: ..... End stage kidney disease.
ESRD:..... End stage renal disease.
FFA: ..... Free fatty acid .
FGF23: ..... Fibroblast growth factor 23.
GBM:..... Glomerular basement membrane.
GFR:..... Estimated Glomerular filteration rate. E
GLP-1RA:..... Glucagon-like peptide 1 receptor agonists.
HDL:..... High density lipoprotein.
HF:..... Heart failure.
IFTA:..... Interstitial fibrosis and tubular atrophy.
LDL:..... Low density lipoprotein.
LM:..... Light microscope.
MCP-1:..... Monocyte chemotactic peptide-1.
MIF: ..... Macrophage migration inhibitory factor.
NIDDM: ..... Non insulin dependent diabetes mellitus.

NAD:……. No abnormality detected.
NPDR:……... Non proliferative diabetic retinopathy.
RAAS: ..... Renin angiotensin aldosterone system.
ROS: ..... Reactive oxygen species.
SBP: ..... Systolic blood pressure.
SGLT2i: ..... Sodium glucose co transporter 2 inhibitor.
T2DM: ..... Type 2 Diabetes Mellitus.
TG: ..... Triglycerides.
TGF- β:..... Transforming growth factor beta.
TmG: ..... Maximum glucose transport capacity.
UACR:..... Urinary albumin to creatinine ratio .

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Abstract

Background: Diabetic kidney disease (DKD) is considered a major cause of end stage renal disease (ESRD). It has been established that controlling microalbuminuria can delay progression to ESRD. Sodium glucose co transporter 2 inhibitor (SGLT2 i) is a newer antidiabetic drug that has a renoprotective and antiproteinuric effect.

Aim of the study: to study the effect of SGLT2 inhibitor on proteinuria in diabetic patients and compare it with classic antiproteinuric drugs.

Patients and methods: we conducted a randomized interventional study, involving 60 adult patients with type 2 DM divided into 2 groups: group I were prescribed the classic antiproteinuric drugs in the form of ACE inhibitors or ARBs, aspirin and statins and group II were prescribed an additional dapagliflozin 10 mg /day. Follow up as regard changes in UACR, HbA1C, Blood pressure, body weight and e GFR was done after 6 months of treatment.

Results: There was statistically significant decline in UACR after 6 months of treatment with dapagliflozin in group II in comparison to group I (p-value < 0.001). There was also statistically significant decline in SBP in both groups with (p-value < 0.010) in group I and (p-value <0.001) in group II and there was significant decline in DBP in both groups (p-value < 0.001). HbA1c decreased significantly in both groups, (p-value <0.023) in group I and (p-value <0.001) in group II. We also noted a significant reduction of body weight in group II (p-value <0.001). There was a statistically significant negative correlation between the change in UACR and the change in e GFR.

Conclusion: There was better reduction in albuminuria when adding dapagliflozin to antiproteinuric drugs, so we recommend starting dapagliflozin early in patients with DKD to delay progreesion to ESRD.

Key words: Diabetes Mellitus, microalbuminuria, SGLT2 inhibitor