بسم الله الرحمن الرحيم

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شبكة المعلومات الجامعية

التوثيق الالكتروني والميكروفيلم

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التوثيق الإلكتروني والميكروفيلم

قسم

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EVALUATION OF URINARY NEUTROPHIL GELATINASE ASSOCIATED LIPOCALIN AS AN EARLY MARKER OF NEPHROPATHY IN TYPE 1 DIABETIC ADOLESCENTS

THESIS
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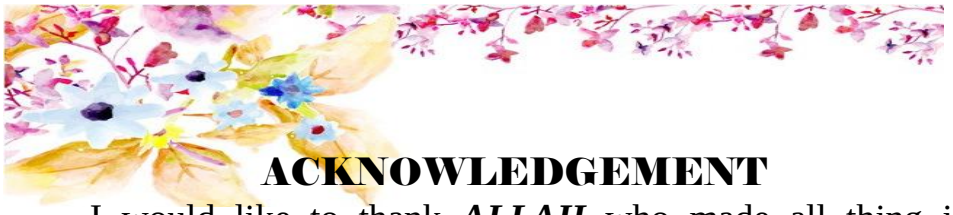

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Abstract

Background and aim: Diabetic nephropathy (DN) is a major cause of morbidity and mortality among young adults with type 1 diabetes. Clinical management and therapeutic intervention from early stage of DN is of major importance to prevent progression to end-stage renal disease. Renal tubulointerstitial injury plays an important role in the development and progression of diabetic nephropathy. The aim of this case control study was to assess urinary Neutrophil Gelatinase-Associated lipocalin (uNGAL) and to evaluate as an early marker for diabetic nephropathy in type 1 diabetic adolescents.

Material and methods:

This is a case control study which involved 90 adolescents (44 males and 46 females) divided into three groups according to albumin/creatinine ratio (ACR) in urine: group I included 30 of type 1 diabetic adolescents without microalbuminuria (<30 mcg/mg) with mean age 13±2.7 years, group II included 30 of type 1 diabetic adolescents with microalbuminuria (30–300 mcg/mg) with mean age 13.5±2.7 years and group III included 30 of healthy controls with mean age 12.9±2.0 years. In addition to uNGAL, urine albumin/creatinine ratio, serum creatinine, eGFR, FBG, HbA1C and other Common biochemical parameters were measured according to standard methods in a standard clinical laboratory and were assessed to determine their correlation with uNGAL. Data analysis was done by using (SPSS) version 20.0. P value was set significant if < 0.05. All graphs were analyzed with graph pad version 17.0.

Results:

Patients with type 1 diabetes showed increased mean uNGAL values with respect to controls; interestingly, increased NGAL levels were already found in diabetic patients with microalbuminuria and also found in early signs of glomerular damage (normoalbuminuric)

(p=0.000). It was increased parallel to the severity of kidney function, poor glycemic control. Patients with type 1 diabetes showed increased mean ACR values with respect to controls (p=0.000). Analysis of correlation revealed that uNGAL was correlated with fasting blood glucose and SBP, DBP.

CONCLUSION:

Urinary NGAL is rapidly emerging as a very promising predictive tool in a variety of renal and non-renal conditions. The horizons for its applications are rapidly expanding. It can be used early to predict many disorders, especially diabetic nephropathy in future. The present study supports these findings by showing an association between higher uNGAL levels and greater progress in diabetic nephropathy.

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