

## **Dedication:**

To .....

To my lovely family....father, mother, sisters and  
brother

To.....

Friends and colleagues, who stood firm behind me and  
gave me a great

Push forward

To.....

People who participated fully and helped me a lot to  
Do this work.

To.....

Every one from whom I learned

Samira

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## **Abstract**

Across-sectional study conducted during the period from March to July 2011, aimed to assess the plasma levels of urate and magnesium in Sudanese with type 1 diabetes. This study includes 75 samples collected from 45 diabetic patients as a test group and 30 apparently healthy (non diabetics) as controls. This study was done in Omdurman hospital. Age and sex of the test group were matched with the control group. The magnesium and urate levels were measured using a spectrophotometer and reagent from Biosystem Company. The data was analyzed using SPSS computer program. The Results showed a significant reduction in the mean of the plasma levels of magnesium of the diabetic group when compared with the control group ( $p < 0.05$ ). Also showed a significant increase in the mean of the plasma levels of urate of the diabetes group when compared with that of the control group. There is a weak positive correlation between the duration of diabetes and the plasma levels of urate and negative correlation between the duration plasma levels of magnesium, and there is a weak positive correlation between the plasma levels of urate and magnesium.

In conclusion:

The plasma levels of magnesium are reduced in diabetic patients with type 1 whereas that of urate are raised. The plasma levels of magnesium have negative correlation with the duration of diabetes, whereas the plasma levels of urate have a positive correlation with the duration of disease.

## مستخلص الدراسة

اجريت هذه الدراسة المقطعية خلال الفترة من مارس الي يوليو 2011 حيث تمت تقييم مستويات اليورات والمغنسيوم في مصل الدم عند 45 من المرضى السودانيين المصابين بمرض السكري من النوع الاول مع 30 من المتطوعين الاصحاء غير المصابين بمرض السكري كمجموعة ضابطة . اجريت هذه الدراسة فى مستشفى ام درمان , حيث تم قياس مستويات المغنسيوم واليورات باستخدام محاليل و جهاز اسبكتروفوتوميتر من شركة بايوسيسستم .

تمت مقارنة الجنس والعمر ما بين المصابين بمرض السكري والمتطوعين الاصحاء. كان هنالك انخفاض ذو دلالة احصائية معنوية في المستوى الوسطي للمغنسيوم وذلك عند مقارنة المستويات الوسطي لمجموعة الدراسة بالمجموعة الضابطة حيث كان الاحتمال الاحصائي اقل 0.05 . كما كان هناك ارتفاع ملحوظ ذو دلالة احصائية معنوية في مستوى اليورات عند مرضى السكري حيث كان الاحتمال الاحصائي اقل من 0.05 وذلك عند المقارنة بالمجموعة الضابطة .

وعليه نخلص نتائج هذه الدراسة : ان هناك انخفاض في مستوى المغنسيوم وارتفاع مستوى اليورات عند المرضى السودانيين المصابين بداء السكري من النوع الاول . كما ان مستوى المغنسيوم يرتبط ارتباطا سالبا واليورات ترتبط موجبا مع مدة المرض .

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### Abbreviation

4 AA

EGTA

ECF

GDM

IFG

IGT

IDDM

OGTT

POD

PTH