

# **Dedication**

To

My

Family

# Declaration

This research was carried out by the undersigned at the Sudan University of Science & Technology. Sudan during the period of October 2003 – 2004 and was not submitted for any degree before.

MOHAMED EL HABIB OSMAN .....

Dr. Mohammed Abd Elraheem.....

# Acknowledgements

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# ABSTRACT

This study was carried out on 63 patients (41 males, 22 females) with end stage renal disease (ESRD) aged from 14 to 74 years and were on haemodialysis. All patients were seen at Dr. Salma center for renal dialysis and transplantation (Khartoum).

Glucose concentration was measured pre and post haemodialysis in the blood of all patients in order to study the influence of the renal haemodialysis on the concentration of blood glucose and to assess if there was any change and to predict suitable precautions that might be taken so as to avoid the risk of that change accompanied the renal haemodialysis.

The preliminary investigations revealed that most of the end stage renal disease patients were presented with other disease, namely hypertension, diabetes mellitus, renal stones, hepatitis (HBV) and tuberculosis (TB).

The findings of this study showed that the level of blood glucose concentration of the majority patients changed after the session of haemodialysis, most of this change was reduction in the concentration of glucose.

The findings also revealed that age had no impact on the level of blood glucose pre- and post haemodialysis. It is obvious from this study, that the blood glucose should be estimated before the initiation of the session of the haemodialysis so as to avoid the risk of hypoglycemia.

The study also revealed that both males and females showed over all reduction in the concentration of their blood glucose post haemodialysis

with slight tendency to reduction in female compared with male .(male  $p=0.004$ ) (female  $p=0.012$ ).

The findings also revealed that the age intervals had no impact on the difference in blood glucose pre- and post haemodialysis.

It is obvious from this study that the estimation of blood glucose should be done for all ESRD patients (diabetic and non diabetic) before and after the session of haemodialysis and their blood glucose should be adjusted within the normal range.

The findings of this study showed that the level of blood glucose concentration of the majority of patients changed after the session of haemodialysis most of this change was reduction in the concentration of blood glucose. This occurred in spite of that the dialysis solution in the dialysis machine, which was responsible for the withdrawal of waste products was treated so as to avoid any undesirable change in blood glucose. Both diabetic and non diabetic are prone to hypoglycemia post haemodialysis. So checking and monitoring their blood glucose is very vital .for their lives

اجريت هذه الدراسة على 63 مريضا 41 (من من الذكور و 22 من الاناث) تتراوح اعمارهم بين 41-74 سنة من مرضى الفشل الكلوى والذين يجرون الغسيل الكلوى الدموى. تمت مقابلة كل المرضى فى مركز د سلى سليمان لغسيل وزراعة الكلى بالخرطوم اوضحت الفحوصات الاولية ان غالبية مرضى الغسيل الكلوى يعانون من امراض اخرى مصاحبة مثل ارتفاع ضغط الدم حصاوى الكلى مرض السكرى التهاب الكبد الفيروسى والدرن.

تم قياس تركيز الجلوكوز قبل وبعد اجراء الغسيل الدموى فى دم كل المرضى من اجل دراسة تاثير الغسيل الكلوى الدموى على تركيز الجلوكوز فى الدم ومعرفة ما اذا كان هناك اى تغير وذلك لوضع الاحتياطات المناسبة والتي من المحتمل انقاذها لتلافى اى خطورة قد تتجم من ذلك التغير المصاحب لعملية الغسيل الكلوى الدموى.

اوضحت نتائج الدراسة ان مستوى تركيز الجلوكوز فى دم معظم المرضى حدث له تغيير بعد الغسيل الدموى واغلب التغيير كان انخفاضا فى مستوى تركيز الجلوكوز فى الدم وهذا يحدث رغم ان محلول الغسيل الموجود فى ماكينة الغسيل والمسئول عن سحب المواد الضارة بالجسم معالج بحيث يتم تلافى اى تغيير غير مرغوب فى جلوكوز الدم.

اوضحت الدراسة ايضا ان كلا الجنسين ذكور واثاث اظهروا انخفاض فى تركيز الجلوكوز فى الدم بعد الغسيل الدموى مع قليل من القابلية للانخفاض عند الاناث مقارنة بالذكور الاحتمالية للذكور (  $p= 0.0004$  ) وللاناث (  $p= 0.012$  ).

كما اوضحت الدراسة ان الفئات العمرية ليس لها تاثير على الفرق فى مستوى الجلوكوز قبل وبعد الغسيل الدموى , يتضح من هذه الدراسة ان قياس الجلوكوز فى الدم يجب ان يجرى على كل مرضى الغسيل الكلوى (مرضى السكرى وغير مرضى السكرى) قبل الغسيل الدموى ويجب ان يضبط الجلوكوز فى دمهم ضمن المستوى الطبيعى الذين يعانون من مرض السكرى والذين لا يعانون منه عندهم القابلية للتعرض لانخفاض مستوى السكر فى الدم لذلك فان فحص وضبط الجلوكوز فى دمهم امر هام جدا للحياة.

# CONTENTS

<i>Description</i>		<i>Page</i>
	Dedication	i
	Declaration	ii
	Acknowledgment	iii
	Abstract	iv
	ملخص البحث	vi
	Contents	vi
	List of tables	ix
	List of figures	x.
	Introduction	xi.
<b><i>Chapter I</i></b>		
1.	Literature Review	1
1.1	The kidney	1
1.1.1	<b>Structure and Anatomy</b>	1
1.1.2	<b>Function of the kidneys</b>	7
1.1.2.1	<b>Retention of substances vital to body economy</b>	7
1.1.2.2	<b>Excretion of waste metabolic products</b>	8
1.1.2.3	<b>Hormonal and Metabolic Functions</b>	8
1.1.3	<b>Acute Renal Failure</b>	9
1.1.3.1	<b>Pathophysiology</b>	9
1.1.3.2	<b>Intrinsic renal failure</b>	10
1.1.3.3	<b>Frequency</b>	12
1.1.3.4	<b>Mortality/Morbidity</b>	12
1.1.3.5	<b>Causes</b>	12
1.1.3.6	<b>Lab studies</b>	14
1.1.3.6.1	<b>Urinalysis</b>	16
1.1.3.6.2	<b>Urine electrolytes</b>	17
1.1.3.7	<b>Diet</b>	17
1.1.4	<b>Chronic Renal Failure</b>	18
1.1.4.1	<b>Pathophysiology</b>	18
1.1.4.2	<b>History</b>	19
1.1.4.3	<b>Causes</b>	22

1.1.4.4	<b>Lab Studies</b>	23
1.1.4.5	<b>Diet</b>	24
1.2	<b>Dialysis</b>	24
1.2.1	<b>Initiation of dialysis</b>	24
1.2.2	<b>Haemodialysis</b>	25
1.2.2.1	<b>Principle of haemodialysis</b>	25
1.2.2.1.1	<b>Diffusion</b>	25
1.2.2.1.2	<b>Ultrafiltration</b>	27
1.2.2.2	<b>Dialyzers</b>	27
1.2.2.3	<b>Dialysate</b>	28
1.2.2.4	<b>Laboratory tests for patients on regular haemodialysis</b>	30
1.2.3	<b>Principles of peritoneal dialysis</b>	30
1.3	<b>Hypoglycemia</b>	31
1.3.1	<b>Causes of hypoglycemia in diabetic patients</b>	31
1.3.2	<b>Reactive hypoglycemia</b>	32
1.3.3	<b>Fasting hypoglycemia</b>	32
1.3.3.1	<b>Causes of fasting hypoglycemia</b>	32
1.3.4	<b>Normal blood glucose levels in non- diabetic</b>	32
1.4.	<b>Malnutrition in ESRD</b>	33
1.4.1.	<b>Nutritional requirements in chronic renal failure (pre-dialysis)</b>	34
1.5	<b>Cardiovascular disease</b>	35
1.5.1	<b>Risk factors for cardiovascular disease in renal patients</b>	35
1.6	<b>Anemia</b>	35
2	<b>MATERIALS AND METHODS</b>	36
2.1	<b>Patients</b>	36
2.2	<b>Sample collection and processing</b>	36
2.3	<b>Reagent concentration</b>	36
2.4	<b>Procedure</b>	37
2.5	<b>Calculation</b>	37
2.6	<b>Statistical analysis</b>	37
<b>Chapter III</b>		
3.	<b>Results</b>	38



<b><i>Chapter IV</i></b>		
4.	Discussion	48
<b><i>Chapter V</i></b>		
5.	Conclusion & Recommendations	53
<b><i>Chapter VI</i></b>		
6.	References	54
	Questionnaire Sheet	57

## LIST OF TABLES

Table No:	Title	Page No:
(1)	Mean plasma glucose concentration in ESRD patients pre and post haemodialysis.	40
(2)	Mean plasma glucose concentration in ESRD patients pre and post haemodialysis in females.	41
(3)	Mean plasma glucose concentration of male patients with ESRD pre and post haemodialysis.	42
(4)	Diseases history in patients with End Stage Renal Disease	43
(5)	Mean plasma glucose concentration of male patients with ESRD pre .and post-haemodialysis according to their age groups	44
(6)	Mean plasma glucose concentration of female patients with ESRD pre .and post-haemodialysis according to their age groups	45
(7)	.The frequency and percentage of female age groups	46
(8)	.The frequency and percentage of male age groups	47

# LIST OF FIGURES

Figure No:	Title	Page No:
(1)	Comparison between the mean of plasma glucose of patients with End Stage Renal Disease pre and post hemodialysis	40
(2)	Comparison between the mean of plasma glucose of female patients with End Stage Renal Disease pre and post haemodialysis.	41
(3)	Comparison between the mean of plasma glucose of male patients with End Stage Renal Disease pre and post haemodialysis.	42
(4)	Shows diseases history in patients with End Stage Renal Disease	43
(5)	A comparison between the mean plasma glucose of male patients with ESRD pre and post-haemodialysis according to their age groups	44
(6)	A comparison between the mean plasma glucose of male patients with ESRD pre and post-haemodialysis according to their age groups	45
(7)	The percentage of age of female groups.	46
(8)	The percentage of age of male groups.	47