

Dedication

To

My

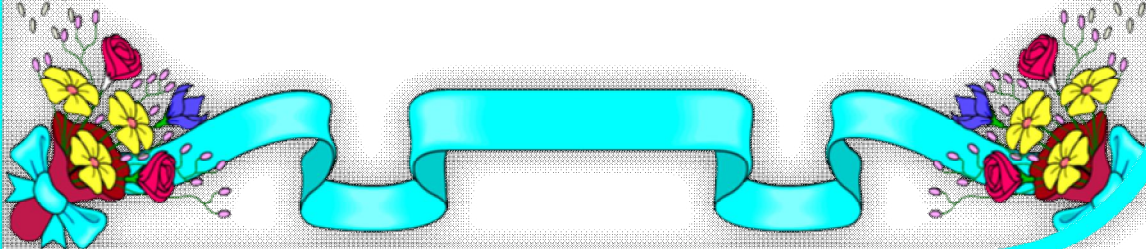
Beloved

Parents

&

Wife

 *(Ehab)*



ACKNOWLEDGEMENT

*I am greatly indebted to my supervisor **Dr. Ahmed A/Badie** for his supervision, guidance, advice, motivation and support throughout the course of this study.*

I am also grateful to the staff of the Histopathology Laboratory, Ribat University Hospital, for their encouragement, help and patience during this study.

Appreciation and thanks are extended to the staff of the Cardiac Centre and Renal Transplantation, Ahmed Gasim Hospital, for their keen interest and assistance.

*Special thanks to, **Dr.hassan El siddig**, Sudan university, for his continuous encouragement and unflagging assistance.*

And last, but never the least, I thank my family for their support, specially my wife who always encourages and helps me.

ABSTRACT

This study was conducted at Ahmed Gasim hospital, cardiac and renal transplantation center during the period from August 2008 to April 2009. It was aimed to assess the cytomorphological changes .

In this study the cytodagnostic urinalysis was tested to determine its diagnostic value among dialysis patients (case) and renal failure patients not on dialysis (control). One hundred and fifty patients with renal failure and on dialysis were included and evaluated clinically , twenty five renal failure patients not on dialysis were taken as control. Urine specimens were macroscopically examined and subjected to a multiparameter reagent-strip analysis. Papanicolaou stain and MGG stain were done on cytocentrifuge preparations and the blood cells, renal cells, candida and casts examined in a standardized fashion.

The study found that the case group of patients on dialysis have reduced the chance of inflammatory changes 44(29.3%) compared by controls whom were not on dialysis 13(52%), the inflammatory changes were less common after dialysis.

Examination of cytological smears revealed no cytological atypia , Furthermore, different infectious conditions were detected like candida, Which was in cases 13(8.7%) and in controls 1(4%). RBCs and Casts were less frequent in cases compared to controls, in cases RBCs 127(84.7%), Casts 121(80.7%). In controls RBCs 25(100%), Casts 24(96%).

That means that haemodialysis improves urinary cytomorphological picture.

خلاصة البحث

أجريت هذه الدراسة بمستشفى أحمد قاسم، مركز جراحة القلب وزراعة الكلى فى الفترة من أغسطس 2008 إلى أبريل 2009 .

فى هذه الدراسة تم فحص الشكل الخلوى للخلايا المتساقطة من عينات البول لمرضى الفشل الكلى، والذين يجرون عمليات غسيل دموى كحالات، والمرضى بالفشل الكلى والذين لايجرون عمليات غسيل دموى كعينات ضبط مقارنة.

تم أخذ 150 شخص مريض يجرى عمليات غسيل وتم تقييمهم طبياً، وتم أخذ 25 مريض لايجرون عمليات غسيل وتم أخذهم كعينات ضبط مقارنة.

عينات البول تم فحصها فحصاً غير مجهرى بواسطة شرائط الإختبار لتحديد عدد من المكونات، ثم تم إجراء فحص مجهرى بعد صبغ المسحات بعد تدويرها بواسطة جهازالطرد المركزى وأخذ الراسب وإجراء مسحات منه، ثم صبغها بواسطة صبغة الميجرون جيمسا وصبغة بابانيكولا، لمعرفة التغيرات الخلوية .

وتم دراسة عدد من الخلايا مثل خلايا الدم والخلايا الكلوية المتساقطة وبعض البكتيريا والفطريات مثل الكانديدا بطرق قياسية.

وقد وجدنا أن مجموعة الحالات قد قلت فرص إصابتها بالحالات الإتهابية 44 (29.3%)، مقارنة بعينات الضبط والذين لايجرون عمليات غسيل 13 (52%).
الخلايا الإلتهابية كانت أقل بعد الغسيل.

فحص المسحات الخلوية أثبت عدم وجود تغيير خلوى سرطانى، بالإضافة لوجود بعض الإصابات بالفطريات مثل الكانديدا، فى الحالات 13 (8.7%)، فى عينات الضبط 1 (4%).

خلايا الدم الحمراء وخلايا الكلى المتساقطة كانت أقل فى الحالات مقارنة مع عينات الضبط، فى الحالات كانت كريات الدم الحمراء 127 (84.7%)، الخلايا الكلوية المتساقطة 121 (80.7%)، أما فى حالات الضبط كريات الدم الحمراء 25 (100%) الخلايا الكلوية المتساقطة 24 (96%).

وهذا يعنى أن إجراء الغسيل الدموى بصورة منتظمة يغير من الصورة الخلوية إلى الأفضل.

LIST OF ABBREVIATIONS

D.W.....	Distilled Water
EA 50.....	Eosin Azur
G.A.A.....>.....	Glacial Acetic acid
MGG.....	May Grunwald Giemsa
PAP.....	Papanicolaou
OG 6.....	Orange Green 6

LIST OF TABLES

- **Table (1)** :... Shows the distribution of study group according to sex
- **Table (2)** : ...Shows age distribution of study group .
- Table (3)** :... Shows the distribution of study population according to duration of dialysis.
- **Table (4)** : ... Shows Frequency of Candida infection in study group and control ..
- **Table (5)** : Shows Frequency of RBCs and Cast among study group and control..
- **Table (6)** : ... Shows Benign Degenerative Changes among study group and controls..
- **Table (7)** : ... Shows of Inflammatory Changes among study group and controls..
- Table (8)**: ... Shows the Cytomorphological pattern in urine of dialytic patients. and controls.

Contents

i.	.....	Dedication
ii.	.....	Acknowledgement
iii.	.....	Abstract English
iv.	.....	Abstract Arabic
v.	.....	List of abbreviation
vi.	.....	List of tables
vii.	.....	List of contents
viii.	.....	List of chapters

LIST OF CONTENTS

Contents	Page
1.1. Introduction	1-3
1.2 OBJECTIVES	3
Literature Review	4-25
2.1. Urinary system anatomy and histology	4-6
2.2. Pathology of the Kidney	7
2.3. Renal failure	8
2.3.1. Acute renal failure (ARF)	8
2.3.1.1. Causes of ARF	8-9
2.3.1.2. Clinical features of ARF	9-10

2.3.2. Chronic renal failure (CRF)	10-11
2.3.2.1 Causes of chronic renal failure	11-12
2.3.2.2. Clinical features of CRF	12
2.3.2.3. Diagnosis of CRF	12-13
2.4. Dialysis	13-14
2.4.1. Indications for dialysis	15
2.4.1.1. General guidelines	15
2.4.1.1.1 Acute dialysis	15
2.4.1.1.2 Chronic dialysis	15
2.5. Renal Transplantation	15-16
2.5.1. Indications	16
2.5.2. Contraindications and requirement	16
2.5.3. Compatibility	16
2.6. Cytology	16-18
2.6.1. Cytology of Normal urine	18
2.6.1.1. Voided urine	18-19
2.6.1.2. Catheterized urine	19
2.6.1.3. Brushings of ureters and renal pelvis	19-20
2.6.1.4. Bladder Washings	20
2.6.2. Normal cytology of the urinary tract	20
2.6.3. Benign cytological changes	20-21
2.6.4. Malignant urinary cytology	21
2.6.5. Inflammatory process within the lower urinary tract	22
2.6.6. The principal cell types in urine	22
2.6.6.1 Free-floating urothelial cells	22
2.6.6.2. Single urothelial cells	22
2.6.6.3. macrophages (histiocytes)	23
2.6.6.4 leukocytes	23
2.6.6.4.1 Neutrophils	23
2.6.6.4. 2 Eosinophils	23
2.6.6.4.3 Basophils	24
2.6.6.4.4 Lymphocytes	24
2.6.7. Abnormal type cell of urine	24
2.6.7.1 Cast	24
2.6.8. Cytological stains	25
2.6.8.1. Papanicolaou staining	25
2.6.8.2. Romanowsky stains	25
2.6.9. The role of urinary cytology	25
3. Material and methods	26-28
3.1. Study design	26
3.2 Materials	26

3.3 Study population	26
3.4 Sample collection	26
3.5 sample processing	26
3.6 smear for papanicolano stain	27
3.7 smears for May Grun Wald Geimsa	27
3.8 results interpretation	28
3.9 Ethical consideration and statistical analysis	28
4. RESULTS	29-37
5. Discussing	38-39
6. Conclusion and recommendation	40
6.1. Conclusion	40
6.2. Recommendations	40
7. References	41-43
Appendix	44-45