

Sudan University of Science & Technology  
College of Graduate Studies

The Prevalence of Fungal Infections in Sudanese Diabetic Patients  
in Khartoum State

انتشار العدوى الفطرية في مرضى السكري السودانيين في ولاية الخرطوم

A Thesis Submitted in Partial Fulfillment of the requirement for M.Sc.  
Degree of Cytology & Histopathology

By  
Mohammed A. Elsheikh  
B.Sc. in Medical Laboratory Sciences  
Sharq Elneil College  
(2003)

Supervisor

Assoc. Prof.

Dr. Elwaleed Mohammed Elamin

College of Medical Laboratory Science  
Alzaiem Alazhary University

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## Dedication

To my mother

Who died 8 years ago

Of brain abnormalities

In Omdurman hospital

To my father

Who is far away

in Saudi Arabia

To my sisters

## Acknowledgment

With affection and deep appreciation I acknowledgment my indebtedness to the friends, family, and colleagues who have been part of this work.

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## ملخص البحث

ركزت هذه الدراسة على الكشف عن انتشار عدوى الفطريات لدى مرضى السكري باسته قصاء عينات البول. لذلك تمأخذ اثنان وخمسون عينة بول عشوائيا من مرضى تم تشخيصهم بمرض السكري، كما تم اخذ اثنان وخمسون عينة بول من اناس لا يعانون من مرض السكري. تمت معالجة عينات البول بعمل خمس مسحات من كل عينة ومن ثم تم صبغ المسحات بصبغات الهيمووكسيلين، بابا نيكولا، البريوديك اسيد شيف، والقروكوت هيكسامين سيلفر والقربيدل. باستخدام هذه الطرق اثبتت الدراسة ان انتشار عدوى الفطر اكثر فى مرضى السكري (اثنى عشر مريضا) واقل عند الناس الذين لا يعانون من مرض السكري (اربعة افراد). وجدت الدراسة أيضاً أن الصبغات التي استخدمناها توضح الجراثيم الفطرية في المسحة بكفاءة. وجدت الدراسة ايضاً ان انتشار العدوى الفطرية لا يتاثر بنوع مرض السكري ولا يتاثر ايضاً بنوع المريض . اضافة الى ذلك اثبتت الدراسة ان مرض السكري وعدوى الفطر لا يؤثران على الخلايا المتتساقطة في القناة البولية لأن السيتوبلازم والنواة لم يتغيرا.

## Abstract

This study emphasized on finding prevalence of fungal infections in diabetic patients urine samples. So for this purpose fifty two urine samples were taken randomly from patients previously diagnosed with diabetes mellitus. In addition fifty two urine specimens were collected from non diabetic people. Urine samples were treated by using five smears from each sample, and then smears were stained with Mayer's Haematoxylin, Papanicolaou, Periodic Acid Schiff (PAS), Grocott's hexamine silver and Gridley staining methods. By using these staining methods the study ensure that prevalence of fungal infection is more common in diabetic patients (twelve patients) and less common in non diabetic (four people). In addition the study found that the staining methods were used demonstrate fungi clearly. In addition the study found that the prevalence of fungal infection does not affect by the type of diabetes even the sex of patients. In addition the study found that the diabetes and fungal infection does not affect the exfoliated cells in urinary tract ,because the cytoplasm and the nucleus does not changed.

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## List of Abbreviation

Abbreviation	Definition
DM	Diabetes Mellitus
WHO	World Health Organization
GDM	Gestational Diabetes Mellitus
IDDM	Insulin Dependent Diabetes Mellitus
NIDDM	Non Insulin Dependent Diabetes Mellitus
PAS	Periodic Acid Schiff's
RBCs	Red Blood Cells
PAP	Papanicolaou
DNA	Deoxy ribose Nucleic Acid
FISH	Fluorescence In Situ Hybridization
KOH	Potassium Hydroxide
CSF	Cerebro Spinal Fluid
IgG	Immunoglobulin Gamma
MAST	Multiple Antigen Stimulating Test
PCR	Polymerase Chain Reaction
TB	Tuberculosis
ALL	Acute Lymphoblastic Leukemia
AIDS	Acquired Immuno Deficiency Syndrome
UTI	Urinary Tract Infection
DPX	Dextrin Polystyrene and Xylene
SPSS	Statistical Package for Social Science

# *CHAPTER ONE*

# *CHAPTER TWO*

# *CHAPTER THREE*

# *CHAPTER FOUR*

# *CHAPTER FIVE*

# *CHAPTER SIX*