

MAKERERE



UNIVERSITY

COLLEGE OF HEALTH SCIENCES

**RISK FACTORS FOR LOWER EXTREMITY AMPUTATION AMONGST ADULT
DIABETIC PATIENTS SEEN AT MULAGO HOSPITAL**

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DECLARATION


I hereby declare to the best of my knowledge that all the work in this dissertation has not been presented for any award in any institution and has never been published anywhere. All of it is original unless otherwise here in stated.

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TABLE OF CONTENTS

DECLARATION	Error! Bookmark not defined.
TABLE OF CONTENTS	v
LIST OF FIGURES	vii
ABBREVIATIONS	ix
OPERATIONAL DEFINITIONS	x
ABSTRACT.....	xi
CHAPTER ONE: INTRODUCTION	1
1.1 BACKGROUND	1
1.2 PROBLEM STATEMENT	2
1.3 STUDY JUSTIFICATION	3
1.4 RESEARCH QUESTION.....	3
1.5 OBJECTIVES	3
1.6 CONCEPTUAL FRAMEWORK	5
1.7 RESEARCH HYPOTHESIS	6
CHAPTER TWO: LITERATURE REVIEW	7
2.1 Introduction.....	7
2.2 Magnitude of the problem.....	7
2.3 Factors associated with Lower Extremity Amputation in diabetic patients.....	8
2.3.1 Socio demographic factors.....	8
2.3.2 Clinical factors	8
2.3.2.1 The role and assessment of Peripheral vascular disease in Diabetes related LEAs	8
2.3.2.2 The role of diabetic neuropathy in LEA and its assessment	9
2.3.2.3 Glyceamic control.....	10
2.3.2.4 Type and duration of Diabetes	10
2.3.2.5 Hyperlipideamia.....	11
2.3.2.6 Hypertension	12
2.3.2.7 Diabetic Foot ulcers	12
2.3.2.8 Body Mass Index	12
CHAPTER THREE: METHODOLOGY	14
3.1 Study design.....	14
3.2 Study site.....	14

3.3 Study duration	16
3.4 Study population	16
3.5 Eligibility criteria	17
3.6 Sample size	18
3.7 Sampling procedure	19
3.8 Data collection tool	19
3.9 Measurements	19
3.9.1 Independent variables	20
3.9.2 Dependent variables	20
3.10 Data collection, management and analysis	21
3.10.1 Data collection procedure	21
3.10.2 Data management.....	22
3.10.3 Data analysis	23
3.11 Quality assurance	24
3.12 Ethical considerations	24
CHAPTER FOUR: RESULTS	26
4.1 FINDINGS	26
CHAPTER FIVE: DISCUSSION OF RESULTS	33
5.1 DISCUSSION	33
5.2 STUDY STRENGTHS	42
5.3 STUDY LIMITATIONS	42
CHAPTER SIX: CONCLUSIONS AND RECOMMENDATIONS	44
6.1 CONCLUSIONS.....	44
6.2 RECOMMENDATIONS	44
REFERENCES	45
APPENDICES	51
APPENDIX I: CONSENT FORM.....	51
APPENDIX II: TRANSLATED CONSENT FORM IN LUGANDA	54
APPENDIX III: DATA COLLECTION FORM	59
APPENDIX V: BUDGET.....	64
JUTIFICATION OF THE BUDGET.....	65
APPENDIX VI: STUDY TIME TABLE.....	66

LIST OF FIGURES

Fig 1 Conceptual framework 5

Fig 3 Percentage distribution by gender in the 2 groups 26

LIST OF TABLES

Table 1: A comparison of socio-demographic characteristics between the cases and controls....	27
Table 2: Baseline clinical characteristics of the study participants at enrollment	28
Table 3: Laboratory parameters; Glyceamic control and lipid profile characteristics.....	30
Table 4: Multivariate analysis of factors associated with LEA in diabetic patients.....	31

ABBREVIATIONS

DFU	Diabetic foot ulcer
DM	Diabetes mellitus
IQR	Interquartile range
LEA	Lower extremity amputation
MHDC	Mulago hospital diabetic clinic
OR	Odds ratio
SPSS	Statistical package for social sciences
TCNS	Toronto clinical neuropathy score

OPERATIONAL DEFINITIONS

Adult: Any person aged 18 years and above.

Diabetic foot ulcer: Refers to any wound on a lower extremity of a diabetic patient lasting at least 14 days

Neuropathy: Is defined as presence of symptoms and signs attributed to diabetes exceeding a score of five on the TCNS

Type I DM: The type of DM where insulin treatment is initiated within two years of diagnosis and continued for 3 or more months, or patients diagnosed with the disease before 30 years of age(1).

Type II DM: The type of DM in patients diagnosed over 40 years of age, or who are maintained on diet or oral hypoglycemic therapy for > 2years after initial diagnosis or for at least 3 months at any later point(1).

ABSTRACT

Background

There is an increasing burden of diabetes and its complications worldwide. Many of these, especially Lower Extremity Amputation (LEA) are so debilitating and costly.

LEAs are a preventable health burden and knowledge on their risk factors is necessary for designing and implementing appropriate and cost effective strategies. However, there is no sufficient information available on the risk factors for diabetes related lower extremity amputation in our environment.

Objectives

The objective of the study was to determine the risk factors associated with Lower Extremity Amputation in adult diabetic patients seen at Mulago hospital.

Methods

An unmatched case control study was conducted between August 2013 and January 2014 amongst 128 adult diabetic patients seen at Mulago Hospital.

Cases were 45 adult diabetic patients in whom a decision to carry out a LEA had been made by an orthopedic surgeon during the study period and controls were 83 adult diabetic patients at Mulago hospital selected from those with no indication for amputation during the study period. Measurements included; socio demographic variables, type and duration of Diabetes Mellitus, history of Diabetic ulcer, blood pressure, BMI, level of Glycosylated hemoglobin (HbA1c), peripheral neuropathy and lipid profile.

Results

Significant risk factors for lower limb amputation were a high level of HbA1c (adjusted OR: 5.60; CI: 1.427-21.992) and history of diabetic foot ulcer (adjusted OR: 6.10; CI: 0.879-9.716).

Diabetic patients with a duration of disease more than 10 years and peripheral neuropathy also had increased but not statistically significant risk association with LEA (adjusted OR: 2.92; CI: 0.879-9.716 and adjusted OR: 3.02; CI: 0.848-10.802 respectively).

Age and sex differences did not significantly influence the risk for amputation in this study (OR: 1.82 (0.538-6.136) P.value 0.335 for age category 40-59 years, OR: 3.65 (1.051-12.685) P.value 0.041* for those 60 years and above and OR: 0.756 (0.357-1.602) P.value 0.466 for male sex).

Conclusions

Those most likely to undergo LEA amongst adult diabetic patients at Mulago hospital were those with poor glyceamic control and history of diabetic foot ulcer. Such patients had an almost 10-fold increase in the risk for amputation considering adjusted odds ratios. They were also likely to have peripheral neuropathy and diabetes for more than 10 years.

Such patients considered to be at high risk of LEA should be closely monitored and aggressively treated to help avert the unwanted possibility of LEA in the Mulago hospital health care system.