بسم الله الرحمن الرحيم

DEDICATION

THIS WORK IS DEDICATED

TO THE SOUL OF MY LATE MOTHER FATIMA AHMED,

TO MY FATHER, TO MY FAMILY,

TO MY BROTHERS, SISTERS, AND

TO MY FRIENDS,

WITH GREAT LOVE, RESPCT, AND GRATITUDE

TABLE OF CONTENTS

CONTENTS	Page No.
DEDICATION	I
TABLE OF CONTENTS	II
LIST OF TABLES	XI
TABLE OF FIGURES	XII
LIST OF ACRONYMS	XIII
ACKNOWLEDGEMENTS	XV
ABSTRACT	XVII
ملخص البحث	XVIII
INTRODUCTION	1
CHAPTER ONE	3
LITERATURE REVIEW	3
1.1. Definition	3
1.2. History of CAVD	3
1.3. Chicken Anaemia Virus	4
1.3.1. Causative Agent	4
1.3.2. Virus Properties	4
1.3.3. Phylogenetic Analysis of CAVD	5

1.3.4. Morphological and Physico-Chemical Characteristics	6
1.4. Virus Classification	7
1.5. Strain Classification	7
1.5.1. Antigenicity	7
1.5.2.Genome and protein	8
1.5.3Genomic Variation	9
1.6. Epidemiology	10
1.6.1. Distribution	10
1.6.2. Historical distribution	10
1.6.3. Prevalence of the disease in other countries	10
1.6.4. Prevalence of the Disease in Sudan	12
1.6.5. Transmission	12
1.6.5.1. Vertical transmission	13
1.6.5.2. Horizontal transmission	14
1.6.6. Susceptibility	14
1.6.7. Host Range and Pathogenicity of CAV	15
1.7. The Disease	16
1.7.1. Clinical Signs of CAV	16
1.7.2. Post-Mortem Findings of CAV	17
1.7.3. Histopathology	18
1.7.4. Diagnosis	19
1.7.4.1. Isolation and Identification	21
1.7.4.2. Cell Culture	22
1.7.4.3. Detection of Virus / Antigen	23

1.7.4.4. Serological Assay	23
1.7.4.5. ELISA	24
1.7.4.6. Indirect Immunofluorescence Test (IFAT)	24
1.7.4.7.Detection of CAV at DNA level	25
1.7.4.8.Polymerase Chain Reaction (PCR	25
1.7.4.9.Restriction Enzyme (RE) Mapping	27
1.7.4.10. SDS-PAGE	28
1.7.4.11. Nucleotide Sequencing	29
1.7.4.12. Differential Diagnosis	30
1.8. Immunity	31
1.8.1. Active Immunity	31
1.8.2.Passive Immunity	32
1.9. Risk Factors for CAVD Infection	32
1.10. Control and treatment of CAVD	33
1.10.1. Biosecurity	33
1.10.2. Vaccination	33
CHAPTER TWO	34
MATERIALS AND METHODS	34
2.1. Study area	38
2.2. Sample Size	39
2.3. Samples	42
2.4. Sampling Strategy and Study Design	43
2.5 .ELISA for detection of anti CAVD antibodies	43

2.6. Description and Principle	43
2.6.1. Preparation of positive and negative control	43
2.6.2. Preparation of conjugate	43
2.6.3. Preparation of IX wash solution	43
2.6.4. Preparation of IX solution	43
2.6.5. Test Procedure	44
2.6.6. Interpretation of results	44
2.6.7 Calculation of s/p ratio	44
2.7. Data collection	45
2.8.Questionnaire Survey	46
2.9. Data Management and Analysis	46
CHAPTER THREE	48
RESULTS	48
3.1. ELISA results	48
3.2. Descriptive statistical analysis frequency tables	
3.3. analysis of risk factor for CAVD	
3.3.1. Governorate	48
3.3.2.Locality	53
3.3.3.Type of production	58
3.3.4. Poultry population	62
3.3.5.Age	65
3.3.6. Breed	68
3.3.7. Husbandry system	72

3.3.8 Body condition.	75
3.3.9.Floor type	78
3.3.10. Source of poultry	81
3.3.11. Antibody status	84
3.3.12. Estimated sero-prevalence rates of CAV by and risk factor	87
3.3.13. Frequencies and distributions of tested serum samples by governorate , locality, breed, age, poultry population, husbandry system , body condition, source of poultry, floor type, type of production and vaccination of CAVD in Khartoum state. (2012)	89
3.3.14. Results of the Univariate Associations with Sero-positive status against CAVD	92
3.3.15.Results of multivariate analyses of associations of risk factors with ELISA CAV- in chick in Khartoum States (2012)	95
CHAPTER FOUR	98
DISCUSSION	98
Conclusion	103
Recommendations	103
References	104
Appendix	119

List of tables

TABLES	Page No.
2.1. Blood samples taken from farms in different localities of Khartoum state	40
3.2. Blood samples taken from Khartoum state exhibiting(+ve and -ve) result to CAV using ELISA test	49
3.2.1. Result distribution of anti CAV antibody in Khartoum state.	51
3.3.12. Estimated sero-prevalence rates of CAV by and risk factor	90
3.3.13. Frequencies and distributions of tested serum samples by governorate , locality, breed, age, poultry population, husbandry system , body condition, source of poultry, floor type, type of production and vaccination of CAVD in Khartoum state. (2012)	96

Table (3.3.14.). Summary of cross tabulation for the prevalence of CAVD with potential risk factors in 450 chickens in Khartoum State (April 2012).	
3.3.15. Results of the Univariate Associations with Sero-positive status against CAVD	93
3.3.16. Results of multivariate analyses of associations of risk factors with ELISA CAV- in chick in Khartoum States (2012)	96

Table of figures

Figures	Page No.
2.1. Map of the study area Khartoum state in Sudan (MARF, 2011)	35
2.2. Map of the localities in state in the study area (MARF, 2011)	36
2.3. Map of the selected localities in state in the study area (MARF, 2011)	37
2.4. Plate Layout of ELISA for CAVD	45
3.5. Map of locality sero-prevalence rates for CAVD chicken in Khartoum State (2012) (MARF, 2011)	54

LIST OF ACRONYMS

CAV	Chicken Anaemia Virus
CAVD	Chicken Anaemia Virus Disease
Bp	Base pair
DNA	Deoxyribonucleic Acid
Abs	Antibodies
ELISA	Enzyme Linked Immuno-Sorbent Assay
CPE	Cytopathic Effect
DAH and ED	Directorate of Animal Health and Epizootic Diseases Control
FAO	Food and Agriculture Organization of the United Nations

GIS	Geographical Information System
MAb	Monoclonal Antibody
MARF	Ministry of Animal Resources and Fisheries
mRNA	Messenger Ribonucleic Acid
ºC	Degree Centigrade
ORF	Open Reading Frame
PAGE	Electrophoretic Profile in Polyacrylamide Gel
PCR	Polymerase Chain Reaction
PCV	Porcine circo virus
µl	Microliter
SPF	Specific pathogen free
SPSS	The Statistical Package for Social Sciences for Windows®
VNT	Virus Neutralization Test
R E	Restriction Endonuclease
CsCl	Cesium Cloride
kDa	Kilo-Dalton
MDCC	Marek"sDisease Chicken Cell
P .i	post inoculation

IIFA	Indirect Immuno Fluorescent Assay
IIFT	Indirect Immuno Fluorescent Technique
IP	Immuo Peroxides
HV	Hyper Variable
FFPE	Formalin Fixed Paraffin Embedded

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ABSTRACT

This study aimed to determine the prevalence and risk factor and to assess the occurrence of chicken anaemia virus (CAV) in Khartoum state. Sudan. A total of 450 serum samples were collected randomly from commercial chickens' farms in different areas in Khartoum State (210 layers and 240 broilers). The samples were tested by indirect ELISA commercial kit. Out of 210 serum samples 201 from layers, were found positive for chicken anaemia virus (95.7%). In broiler flocks, 129 were found positive and the prevalence rate was 53.8%. The estimated overall sero-prevalence rate of CAV was found to be 73.3%. In the univariate analysis using the Chi square test for risk factors , governorate and locality, (type of production, poultry population, husbandry system, body condition ,source of poultry, floor type, vaccination, breeds and age), (p-value ≤ 0.05), were found to be significant risk factors. The risk factors found to be significantly associated with increased odds of being ELISA positive in the multivariate analysis were governorate, type of production, poultry population, husbandry system, source of poultry and vaccination (p-value $\leq$ 0.05)were significant risk factors. While the factors found not significantly associated with increased odds of being ELISA positive were , ages, floor type and poultry population(p-value > 0.05). Investigation results suggest that CAVD has wide spread in Khartoum State. In conclusion, the disease is highly prevalent in Khartoum State, Sudan. Urgent need therefore exists to initiate a realistic network for surveillance, control and eradication of this important viral poultry disease in the Sudan.

Keywords: Sudan, chicken, CAV, sero-prevalence, risk factors

ملخص البحث

هدفت هذه الدراسة لتحديد معدل إنتشار فيروس مرض انيميا الدجاج وعوامل الخطر في ولاية الخرطوم بالسودان. تم جمع ٤٥٠ عينة مصل من مزارع الدواجن فى مناطق مختلفة من ولاية الخرطوم.(٢١٠عينة مصل من الدجاج البياض و٢٤٠ عينة مصل من الدجاج اللاحم).تم إستخدام تقنية المقايسة المناعية الغير المباشرة المرتبطة بالانظيم . من ٢١٠عينة مصل من الدجاج البياض٢٠١ عينة مصل كانت موجبة بنسبة (٩٥٠٧٪)،ام فى الدجاج اللاحم ١٢٩ عينة مصل من جملة٢٤٠ عينة مصل وجدت موجبة بنسبة (٥٣٠٨٪) .من المجموع الكلى للامصال ٣٣٠ عينة مصل بنسبة (٧٣٠٣٪) وهو عبارة عن نسبة إنتشاراضدادفيروس انيميا الدجاج فى مختلف الاعمار من عمر يوم وحتى عمر ٥٤٠ يوم .

التحليل الاولى بإستخدام مربع كاى لعوامل الخطر(المجالس،المحليات ، نوع الانتاج، عدد القطيع، نظام التربية، المظهر العام للقطيع، مصدر الدواجن، نوع الارضية، التطعيم، السلالةوالعمر) اوضح ان هذه العوامل ذات علاقة معنوية بإنتشار المرض (P- value≤0.05).اما فى التحليل المتعدد اوضح ان كل عوامل الخطر ذات علاقة معنوية بإنتشار المرض(P- value≤0.05) عدا العمر،نوع الارضية والحالة العامة للقطيع ليست لهم علاقة بالمرض (P- value>0.05) . اكدت النتائج ان المرض واسع الانتشار فى ولاية الخرطوم لذا يجب الإهتمام ببرنامج التقصى الحقلى، المسح والسيطرة على المرض فى السودان .