بسم الله الرحمن الرحيم

شبكة المعلومات الجامعية

جامعة عين شمس

التوثيق الالكتروني والميكروفيلم

قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها

علي هذه الأفلام قد أعدت دون أية تغيرات

يجب أن

تحفظ هذه الأفلام بعيدا عن الغبار

في درجة حرارة من 15-25 مئوية ورطوبة نسبية من 20-40%

To be Kept away from Dust in Dry Cool place of 15-25- c and relative humidity 20-40%

شبكة المعلومات الجامعية

التوثيق الالكتروني والميكروفيلم

Cairo University
Faculty of veterinary Medicine
Department of Medicine
Infectious diseases and fish

STUDIES ON THE ROLE OF VIRUSES IN CALF DIARROEA

Thesis Presented by
NELLY OMAR ALY MOHAMED EL-SAYED
(B.V.Sc. Cairo University, 1989)

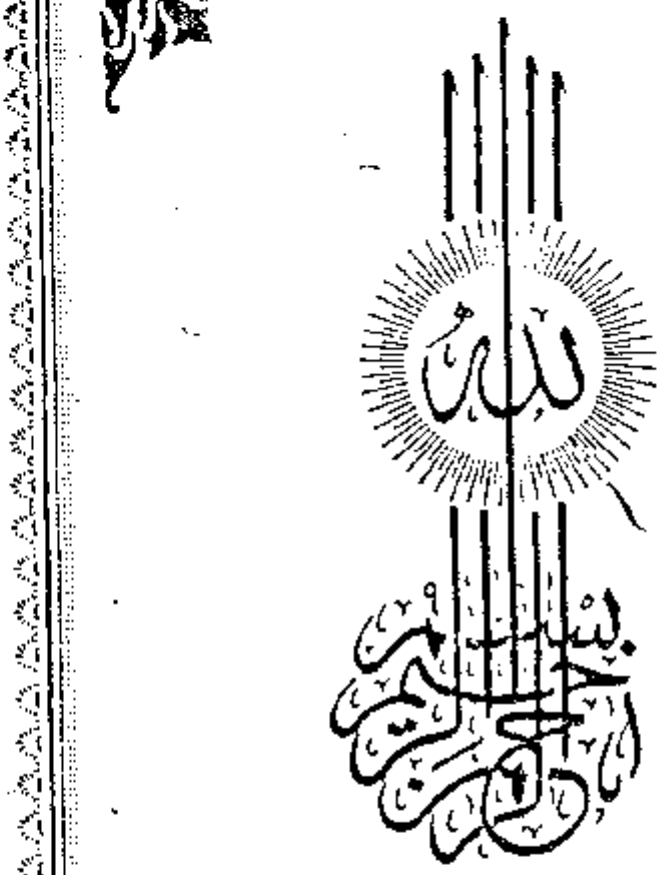
For

Master Degree in Vet.Science (M.V.Sc)
(Infectious Diseases)

Under Supervision of
Prof. Dr. ADEL ABD EL-AZEME FAYED
Professor of Infectious Diseases
Cairo University

. Prof. Dr. FATEHEIA MOHAMED MOHAMED
Professor of Virology
Animal Health Research Institute
Dokki,GIZA

1996



قَالُوا سُبْحَانَكَ لَا عِلْمَ لَنَا إِلَّا مَا
عَلَّمْتَنَا إِنَّكَ أَنْتَ الْعَلِيمُ الْحَكِيمُ.

صَدَقَ اللهُ الْعَلِيمُ
البقرة - ٣٢ -

Cairo University
Faculty of Veterinary Medicine
Department oInternal Medicine
Infections Diseases and Fish

Approval Sheet
Studie

The Role of Viruses
In calf diarrhoed
M.V.Sc Thesis

By
Nelly Omar Mohamed El - sayed
Approved By

Prof. Dr Mohamed Salah El Deen
Prof. of Infections Diseases, and Head of Department of Internal MedicineInfections and Fish disease
Faculty of veterinary Medicine, Zigazi University

Prof. Dr Amal Abd El. Azeis Elmolla
Prof. of Infectious Diseases,
Faculty of Veterinary Medicine
Cairo University

Prof, Dr. Adel Abd El. Azeme Fayed
Prof. of Infections Diseases
Faculty of Veterin Medicine, Cairo University
(Supervisor)

Date : /3/1996

ACKNOWLEDGEMENT

I am deeply grateful to prof.Dr.Adel Abd El-Azem Fayed professor of Infectious Diseases,Faculty of Veterinary Medicine Cairo University,for his father supervision,and issuing this work in the best possible scientific form.

I would like to mention with great respect and appreciation the encouraging supervision of prof.Dr.Fateheia Mohamed Mohamed,professor Virology; Animal Health Research Institute for her valuable assistance and facilitation of requirements I wish to express may deep gratitude to prof.Dr.M.Sami Saber, head of Department of Virology,Faculty of veterinary Medicine, for his cooperation and sincere help.

I am very grateful Dr.Hadia Abdel Rahim Senior Researcher Virology Department Animal Health Research Institute,Dokki,Giza for their help, suggestions and advice.

Also,I am deeply grateful to Dr.Nawal Mohamed Ali, Senior Researcher, Animal Health Research Institute,Dokki for the unlimitedhelp she offered during the course of this work.

My grateful thanks to Dr.Kamil N. Mettias ss.prof. Animal Reproduction Research Institute for his valuable help and laboratory facilities.

I will always remeber the Kidness, encouragement and help of all staff members of virology Department Animal Health Research Institute Dokki, Giza.

To my mother ,,,
my husband
and my daughter
WITH ALL MY LOVE

CONTENTS

INTRODUCTION

I. INTRODUCTION

Neonatal calf diarrhoea remains one of the most important causes of calf mortality The economic importance of the disease varies among herds and to some extent depends on the system of mangement and the degree of intensification.

The disease remains largely unchecked because of its complex aetiology. Over the years E. coli has generally been accpted as the cause of neonatal calf diarrhoea (TZIPORI 1981), although other agents particularly viruses have been suggested (Tzipori et al., 1983)

It was found that agreat economic losses in dairy and beef herds are due to neonatal calf diarrhoea in EGYPT and most of developing countries due to bad feeding , low hygenic conditions , deprivation of calves from colostrum, are predisposing factors which can be important in the complex aetiology of the disease .

Several microbial agents including bacteria as E.coli and Viruses as, Bovine virus diarrhoea (BVD), Infectious Bovine Rhinotracheitis (IBR) and Rinder pest (RP) were incriminated to play a roles in the aetiology of calf diarrhoea.

Also, the viral agents most commonly associated with this syndrom are rota and coronavirus .

Rotaviruses were first discribed in 1969 as the aetiological agent of neonatal calf diarrhoea.since that time rotavirus have been identified as one of the major causes of diarrhoea in newborn calves.

Bovine corona (BCV) was first identified as a possible cause of calf scours in 1972 by Stair et al. and is now recognized as one of the leading aetiology agents associated with neonatal enteritis in calves.

Distribution of bovine rotavirus (BRV) and coronavirus appears to be world-wide and prevalence rates of neonatal infection range from 11% Baljer et al. (1987) to 81% Saif et al. (1988).

In Egypt, Rotavirus and coronavirus had been detected and isolated as recorded by Hafez et al (1980) who detected rotavirus antibodies in serum of buffalo and cattle, Shalaby et al. (1981), isolated rotavirus for the first time in Egypt from newborn calves suffering from diarrhoea. Ikram et al.(1990) dectected coronavirus antigen in faeces of diarrhoeic buffalo calves.

In Egypt also, Coronavirus antibodies were detected by Shalaby et al.,(1991) in sera of some diarrheic calves

THE AIM OF THE PRESENT STUDY IS TO :

1- Study the clinical picture of corona virus, Rota virus and E. coli K99 infection in calves

2- Study the most available, rapid diagnostic and economic tests for diagnosis of corona virus antigens, rota virus antigens and E. coli K 99 antigens in faeces of diarrhoeic calves .

3- Comparison between different technigues used for stablishing the best diagnostic and economic method or methods which can be routinely used for rapid diagnosis.

REVIEW OF LITREATURE

II. LITERATURE

2.1.EPIZOOTIOLOGY :

Neonatal calf diarrhoea induce a clinical condition but they don't indicate it's etiology. It was found that diarrhoea cause great economic losses in our country and all over the world . Therefore many researches tried to find out the actual cause or causes and best way for control of many factors,

Away back in (1943) there was an out break in Baltimore among infants, however no pathogenic bacteria were grown from infant's faeces but faecal filtrate causes diarrhoea in calves .

Corona Virus as a Cause of Neonatal Calf Diarrhoea:

Valente et al., (1979) identified Corona - like viruses from faecal materials of neonatal calf - diarrhoea in Italy

Grover et al., (1980) detected coronavirus in diarrhoeic samples collected from animals under 1 month old in India during Jully to december

Leeuw et al., (1980) concluded that the main types of viruses involved in calf diarrhoea in the Netherlands were rotavirus and corona virus

Hofmann and Arens (1981) reported that during 1979 and 1980 , 105 faecal samples were collected and examined. Corona virus was isolated from 40 calves out of 105 calves with diarrhoea at Giessen , German Federal Repulic.

Tzipori (1981) said that Corona virus was one of the aetiological enteropothogens implicated to calf diarrhoea in U.K.

Opdenbosch et al ., (1981) found that sixteen calves divided into seven group were infected with bovine diarrhoea virus, Corona virus, and rota virus alone or in combination , up on birth and before being given colostrum at four hours. five of six given all three viruses developed diarrhoea and died between 4 and 23 days of age, all seven calves given any two viruses developed diarrhoea, and four died between 5 and 15 days of age.

Wellemans et al., (1981) reported that milk sampled from five cows in aherd where calf diarrhoea was present, and from 11 cows in ahered with little diarrhoea .contgined Antibodies to bovine Corona virus were present for at least three weeks after calving .

China, Fujian Provincial Institute Of Animal Husbandry And Veterinary Medicine (1981) mentioned that the disease occurred for the first time in 1974 in the longxi prefecture of fujian province (china) and was recognized as an acute intestinal infection. where Corona viruses was isolated from faeces of infected cattle.

Snodgrass et al., (1982) mentioned that faecal samples collected from untreated diarrhoeic and apparently normal calves, signifacant association of Corona virus and diarrhoea

Schulz (1982) found that Fecal samples collected from 50 diarrhoeic calves and from July 1978 to May 1979 tested for Corona virus all animals had acute diarrhoea and had been collected from 81 farms,Corona virus was found in 32% of the animals found that fecal samples collected from 50 diarrhoeic calves from 81 farm during the period from 1978 to May 1979 and examined