

Short Communication

EVALUATION OF PESTE DES PETITS RUMINANTS AND RINDERPEST VIRUS INFECTIONS OF CAMELS IN BORNO AND KANO STATES OF NIGERIA

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INTRODUCTION

Peste des Petits ruminants (PPR) is a highly fatal disease of sheep and goats caused by a Paramyxovirus of the genus Morbillivirus. The disease is endemic in sub-Saharan Africa and parts of the Middle East. Although PPR primarily affects small ruminants, other species of livestock are associated with the epidemiology of the disease (Nawathe and Taylor, 1979; Obi *et al*, 1988; Furley, *et al*, 1989). From these reports, it is evident that camels, donkeys and large ruminants could sero-convert when infected, but do not suffer clinical disease. This shows that these species could act as reservoirs of the virus for sheep and goats. Their carrier status is however, largely unknown. Control of PPR was primarily through vaccination of sheep and goats with Tissue Culture Rinderpest Vaccine (TCRV). With the control of Rinderpest in the country and provisional declaration of freedom from the disease, a halt in the vaccination of cattle was enforced and the immunization of sheep and goats with TCRV discouraged. The recent introduction of PPR homologous vaccine by NVRI Vom for sheep and goats could eventually lead to the control of the disease. The definition of the role of other animal species in the epidemiology of PPR at this stage is therefore necessary. This study was carried out to detect not only viral antibodies in serum but also viral antigens in tissues of the same animals to ascertain the role of camels as carriers of the PPR virus using the highly sensitive Enzyme-Linked Immunosorbent assays.

KEY WORDS: PPR, Rinderpest, ELISA, Camels, Nigeria.

MATERIALS AND METHODS

Sixty (60) parallel samples each of lungs, mesenteric lymph nodes, spleen and sera were collected from apparently normal camels at slaughter in Kano abattoir while seventy six (76) lungs, 1 lymph node and 76 sera were obtained from Maiduguri abattoir. Twenty percent (20%) homogenate of each tissue suspension was made in cold phosphate buffered saline (PBS, PH 7.4) and clarified at 2000 RPM for 15 minutes. The supernatant was preserved at -20°C in sterile cryovials, until required.

Screening for PPR and Rinderpest virus antigens in tissue suspensions was conducted using the Immunocapture ELISA (I.C.E) test. The I.C.E was

carried out using the protocol and kit propagated by the Centre d' Application et de Methodologie de diagnostic des maladies Animals de l'office International des Epizootics (CAMDA/OIE). The cut-off points were calculated from the PPR and RP blanks at 3 times their mean optical density (OD) values.

The competitive ELISA Kit for PPR used to screen the sera was developed by Centre de Cooperation International, en recherche Agronomique pour le Development Department d'elevage Veterinaire (CIRAD-EMVT), in collaboration with FAO/IAEA (Libeau, *et al*, 1995). The diagnostic threshold for this assay was preset at 50% inhibition (SOPI) of the monoclonal antibody control. All test sera were tested in duplicates using

NUNC Immuno I maxisorp micro-titre plates and read at 492nm filter using BDSL immunoskan plus (MK II 352) connected to an IBM computer. The computer utilizes an FAO/IAEA software (EDI, version 3.0) which automatically runs series of calculations on each serum sample and reveals the status of the serum as positive, or negative or retest. All sera with retest status were retested. Based on this, the mean OD replicates were calculated.

RESULTS AND DISCUSSION

All the tissue samples tested negative for PPR and Rinderpest virus antigens. Similarly, all the serum samples tested were negative for PPR virus antibodies. The failure to detect PPRV antigens and antibodies in this work is at variance with earlier workers who detected PPRV antibodies in 4% of 250 camel sera collected from Sokoto central abattoir (Daneji, *et al*, 1997).

Reports of antigen detection in camels in the country are rather scanty. However, since these species share grazing pastures and drinking points with sheep and goats in the field, assessment of their viral status becomes imperative.

A negative result as obtained herewith is an indication that these species may not pose a serious threat to the occurrence of PPR in small ruminants in the areas sampled. Further studies with increased sample size over a larger geographical area is however necessary for definitive conclusions to be drawn.

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