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PRELIMINARY STUDY OF SERO-SURVEILLANCE OF PESTE DES PETITS RUMINANTS (PPR) ANTIBODIES IN GOATS AND SHEEP IN KINGDOM SAUDI ARABIA

(With 1 Table)

By

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دراسة أولية على الاستقصاء المصلى لمرض طاعون المجترات الصغيرة في الماعز والأغنام في المملكة العربية السعودية

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أجريت الدراسة على عدد ١٨٨ عينة مصل (١١٤ عينة لأغنام و ٧٤ عينة لماعز) تم جمعها من مناطق المملكة المختلفة خلال عام ١٩٩٧. تلك العينات كانت سالبة للأجسام المناعية النوعية لفيرس الطاعون البقري. وتم الكشف عن الأجسام المناعية النوعية لفيروس طاعون المجترات الصغيرة باستخدام اختبار الاليزا التنافسي القياسي. وقد أظهرت النتائج وجود وجود معدلات تواجد لطاعون المجترات الصغيرة بمتوسطات قيامها ٥٤% في الماعز في إثنى عشرة منطقة من المناطق الأربعة عشره المختبرة و٤٧% في الأغنام في جميع المناطق وهذه النتيجة تقودنا ولا شك إلى إجراء استقصاء مصلى أشمل للمرض للتأكد من مدى استيطان المرض بمناطق المملكة المختلفة وكذلك جدوى توفير اللقاح النوعي الواقي من المرض.

SUMMARY

Peste des petits ruminants virus (PPR) is a highly contagious morbillivirus infecting goats, sheep and other small ruminants. One hundred and eighty eight serum samples (114 sheep and 74 goats) were collected from 14 areas of Kingdom Saudi Arabia in 1997. The samples were seronegative for rinderpest and they were screened for PPR antibodies using competitive ELISA kit. The data revealed that incidence rate averages of PPR where 54% in goats in 12 out of 14 areas

and 47% in sheep samples in all 14 areas. These results will gave the way to complete a large scale of sero-surveillance of PPR antibodies in all areas of Kingdom Saudi Arabia.

Key words: Sero-surveillance, peste des petits, ruminants, antibodies, goats, sheep

INTRODUCTION

PPR is an important contagious viral disease, affects goats, sheep and small wild ruminants, characterized by acute-subacute clinical signs of necrotizing and erosive stomatitis, enteritis, pneumonia, pyrexia and catarrhal rhino-conjunctivitis with variable rates of mortalities (Appiah, 1982), caused by a genus member of morbillivirus in the family Paramyxoviridae (Gibbs et al., 1979) and endemic in most countries in Africa, middle east and in India.

In Kingdom Saudi Arabia (KSA), the last record of PPR-outbreak was in 1988 (Abou El-Zein et al., 1990). Several years ago before 2000, the intended veterinary authorities in the kingdom has been approved the use of rinderpest (RP) virus kabete'o strain vaccine for immunization of sheep and goats against PPR. This preliminary sero-surveillance of PPR im KSA was undertaken to declare the endemicity of the disease before the use of PPRV-Nigerian (75/1) strain vaccine in the Kingdom.

MATERIAL and METHODS

Serum samples:

A total of 188 serum samples collected from 114 sheep and 74 goats were received from 14 provinces during 1997 and kept in serum bank in Riyadh Veterinary Laboratory until used in this work. These serum samples were seronegative to RPV as screened before by competitive ELISA.

Competitive ELISA (C-ELISA):

Serum samples were tested for the presence of PPRV antibodies using BDS-X PPRV-CELISA kit. The presence of antibodies to PPRV in the serum samples with compete anti-PPRV monoclonal antibody to bind the PPRV-antigen resulting in a reduction in expected colour following the addition of enzyme labelled anti-mouse, conjugate and substrate chromogen solution. The test sera demonstrating mean percent of inhibition (PI) values of 50% or greater are considered to be positive and the test sera demonstrating mean PI values less than 50% are considered to be negative.

RESULTS

As shown in the associated table, PPRV antibodies were detected by competitive ELISA in range of (7.7%-90%) with average (47%) in 114 sera of sheep and in range of (Zero%-100%) with average (54%) in 74 sera of goats. Also, 12 of 14 provinces were positive for PPR in both sheep and goats; while the rest two province were positive for PPR in sheep.

DISCUSSION

The present sero-survey was carried out for the first time in the Kingdom using CELISA according to standards of FAO/OIE for specification of PPRV antibodies in sera of sheep and goats to declare situation of the disease in different areas in spite of the continous clinical reports concerning cases of broncho-pneumonia, rhino-conjunctivitis, pyrexia and mortalities in lambs and goat kids in different areas of the Kingdom especially in Al-Kasseem, Riyadh, Al-Hufof and Jiddah with missing of PPR clinical suspicion in between hemorrhagic septicaemia and other respiratory diseases. The results showed incidence rate average of PPRV antibodies of 54% in goats and 47% in sheep are confirmed; firstly, durable endemicity of PPR in all examined 14 provinces in the Kingdom; secondly, focussing on PPR clinical suspicion in goats, sheep and gazelle populations, and thirdly, importance of availability of homologous PPR vaccine in the Kingdom to be used in control and eradication program of the disease.

REFERENCES

Abou El-Zein, E.M.; Hassanin, M.M.; Al-Afaleq, A.I.; Abd El-Hadi, M.A. and Howawi, F.M. (1990): Isolation of peste des petits ruminants from goats in Saudi Arabia. Vet. Rec., Sep. 22, 127 (12): 309-310.

Appiah, S.N. (1982): Peste des petits ruminants. A review. Bull. Anim. Hlth. Prod. Af., 30: 179-184.

Gibbs, E.P.J.; Taylor, W.P.; Laarman, M.J.P. and Bryont, J. (1979): Classification of peste des petits ruminants virus as the fourth member of the genus morbillivirus. Inter-Virology, 11 (5): 268-274.

Prevalence of PPRV antibodies in sera of sheep and goats, collected from several provinces in the Kingdom during 1997, as assayed by C-ELISA.

Province	Sheep			Goats		
	No. of tested sera	No. of positive samples	% of positive	No. of tested sera	No. of positive samples	% of positive
Al-Kharj	20	18	90	10	10	100
Wadi Eldwasser	20	12	60	-	-	-
Uniza	13	6	46	5	5	100
Mecca	5	2	40	5	1	20
Medina	-	-	-	5	3	60
Al Mkwa	-	-	-	4	2	50
Bni Kabber	-	-	-	2	2	100
Al Bahha	5	3	60	-	-	-
Shakrah	3	1	33	5	2	40
Al Ghaat	5	3	60	3	3	100
Becha	3	1	33	5	-	-
Najran	10	1	10	5	3	60
Abha	17	6	53	15	9	60
Jizan	13	1	7.7	10	-	-
Total	114	54	47	74	40	54