SOME STUDIES ON OUTBREAK OF LUMPY SKIN DISEASE "EGYPT 2005"

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ABSTRACT

This study was carried out from April to November 2005 in Demietta and Dakahlia governorates. A total of (4417) cattle and (756) buffaloes were examined clinically for lumpy skin disease. Out of them (1143) cattle and (5) water buffaloes showed skin nodules of LSD. Different clinical forms, acute and subacute were noticed. The study revealed total morbidity and mortality rates in cattle were (25.87%, 3.28%) respectively, whereas in buffaloes were (0.66%, 0.0%) respectively. Higher morbidity rate was recorded in adult cattle either vaccinated herds (19.6%) or non-vaccinated herds (42.9%) while higher mortality rate was recorded in suckling calves (2.71%) in vaccinated herds and (8.08%) in non-vaccinated herds. The higher incidence was recorded in summer in cattle and buffaloes.

The emergency vaccination by local produced sheep pox vaccine was used against Lumpy skin disease outbreak and it succeeded in lowering the economic losses by minimizing the morbidity, mortality and abortion rates in vaccinated herds compared to non-vaccinated one. The vaccinated herds showed morbidity rate (14.36%), mortality rate (1.13%) and abortion rate (0.55%) whereas non-vaccinated herds showed morbidity rate (33.5 %), mortality rate (4.7 %) and abortion rate (6.62 %).

Eighty two different samples were collected during the outbreak for virus isolation from cattle (Buffy coat 25, lymph nodes biopsy 10, skin biopsy 35, tracheal plague 2 and saliva 10) and 5 Buffy coat from buffalos. All samples were processed for virus isolation. Isolated virus from cattle and buffaloes were identified by using SNT and IFAT.

Serum samples were collected from clinically diseased and in- contact animals (cattle 250 and buffalo 25). Antibodies were detected in all serum samples by varied titer by using SNT and ELISA as the mean titer by SNT in cattle were (64, 128, 32) and

by ELISA were. (3200, 4500, 2000) in early infection, late infection and in-contact animals respectively and in Buffaloes were (32, 16) by SNT and (1400, 1200) by ELISA in diseased and in-contact animals respectively. The isolated viruses from cattle and buffaloes were inoculated subcutaneously in susceptible cattle . The cattle virus was caused a generalized reaction while buffaloes virus were producing localized reaction.

It could be concluded that: The severity of LSD outbreak Egypt 2005, LSD of cattle occasionally affecting buffaloes with variant degree of severity, local produced sheep pox vaccine was succeeded in protection against the disease.

INTRODUCTION

Lumpy skin disease is a disease of cattle, primarily in Africa and rarely in Middle East. It caused by a "Neethling Strain" belonging to Capri pox genus that belongs to the poxviridae **(Tuppurainen et al., 2005)**. Lumpy skin disease is an acute, sub acute and chronic or inapparent viral disease of cattle and occasionally water buffalo and characterized clinically by fever, multiple firm, circumscribed skin nodules, necrotic plaques in the mucous membranes and generalized lymphadenitis **(Coetzer et al., 1994 and Hamoda et al., 2002)**.

Lumpy skin disease was recognized as an infectious disease in 1943 when an outbreak accureed in Ngamiland in Bitswana and spread to south Africa and appeared to be confined to southern Africa until 1956 and the disease recorded for 1st time out side Africa in 1989 when recorded in southern Israel **(Davidson 1990)**. While LSD vires was isolated for the first time from cattle in Egypt in 1988 in suez and Ismailia provinces by **(House et al., 1990)** and from buffaloes by **(Ismael 2000)**.

LSD is firstly recognized in Egypt among cattle in may 1988 in serious outbreak and many mild outbreak or sporadic cases were recorded after that at 1994 and 2002. **(Agag et al., 1989., El Allawy et al; 1992, Hassan, et al., 1992; Hassan 1993; Abo Zeid et al., 1994; Daoud; 1998 Mageda et al., 1999 Abd El- Rahim et al., 2002 and Hamoda et al., 2002)**.

In Egypt water buffalo considered the most preferable animal especially in Delta governorates and usually found incontact with cattle and the clinical LSD were recently diagnosed in Egypt in water buffalo by **(All et al., 1990, Hassan 1993, Ismael 2000 and Hamoda et al., 2002) and Radostitis et al., 2000** published that there was only one reported of the natural occurrence of LSD in water buffaloes.

Although LSD dose not caused a high mortality rates even during acute outbreaks "5-10%" it

has economic importance due to the prolonged debilitating effect, the losses resulting from emaciation, temporary or permanent cessation of milk production, infertility in both bulls and cows, abortion and permanent damage to hides **(Green 1959 , Henning 1956 and OIE 1989)**.

There is no specific antiviral treatment available for LSD infected cattle so.The control of the disease depends mainly on vaccination of all population to provide non susceptible host. Two vaccine neethling and Kenya sheep and goat pox have been used widly in Africa with success. In Egypt local sheep pox vaccine (Romanian strain) were used to vaccinate cattle allover the governorates but mild and sever outbreak of LSD were recorded. So our study was directed to through the light on:

1- The nature and severity of last outbreak on Egypt 2005.

2- Observation the clinical signs of naturally infected cattle and infected Buffaloes.

3- Study the efficient of emergency vaccination by sheep pox vaccine in control of LSD outbreak.

4- Trials for isolation and identification of the virus from different samples of naturally infected cattle and Buffaloes.

5- Estimating the pathogencity of isolated LSD viruses from Egyptian Buffaloes and cattle in out break Egypt 2005 and flow the clinical picture of both strains in susceptible cattle.

MATERIAL AND METHOD

Clinically and epidemiolgically investgated animals

A - Cattle

This studies were carried out from April to November 2005 on 4417 mixed breed cattle with different ages and sex. Located on four herds in Dakahlia and Demitta governorates. The animals were divided according to history of emergency vaccination by local sheep pox vaccine before outbreak into two groups.

Group I : (Vaccinated): All animals over one month were injected by sheep pox vaccine (1/ 2 ml I.d) at least 4 weeks before 1st clinical case of LSD

Group II: (Non vaccinated) : All animals not vaccinated at least 1 years before the out break.

Each group were sub divided according to age of the animals into three sub groups (table 1& table 2).

Subgroup 1: Adult animals which were over 2 years old.

Sub group 2 : Growing animals (6 months up to 2 years) old.

Subgroup 3 : Calves (1 weeks up to 6 months) old.

Age and season were recorded and all animals were clinically examined according to **(Kelly1980)**.

B. Buffaloes :

A total of 756 non vaccinated buffalo with different ages and sex located at Dakahlia governorates in contact with infected cattle during outbreak of summer 2005.Five buffalo showed signs of nodules on their skin with or without systemic disturbances suspected to be LSD infection (table 4).

Experimental animals infection :

The aim of this experiment was to clarify and confirm clinical LSD among buffaloes. it was carried out at Pox Dept. Veterinary serum and vaccine Research Institute, Abbasia, Cairo. The study was carried on 5 mixed breed cattle of 2-4 years old. All animals were clinically normal and their sera proved to be free from LSD anti-bodies using serum neutralization test by using standard LSD virus. 2 cow. were injected I/D on the lateral side of the neck with 0.5 ml of the virus isolated from diseased buffaloes and 2 cows. were injected I/D on the lateral side of the neck with 0.5 ml of the field virus isolated from cattle, while one cow was kept in contact with the inoculated animals as control. All animals were kept in insect proof stables under observation daily for fever .skin lesions and lymphadenitis along the period of the experiment (6weeks).

Sampling

A- Cattle samples

1- Buffy coat :

Heparinized blood samples were collected from 25 recently infected animals which showed fever with or without nodules Buffy coat were separated for virus isolation.

2-Lymph node biopsy :

Lymph node biopsy for virus isolation were collected from 10 animals by using steril syring from prescapular and prefemoral lymph nodes.

3- Skin biopsy :

Skin biopsy were collected by surgical sections from 35 diseased cattle with different age , sex and different stage of the skin nodules.

4- Tracheal lesion :

Tracheal plaques from two newly born calves which freshly died or emergency slaughtered were collected and processed for virus isolation

5- Saliva :

Saliva were collected from ten clinically suspected animals which showed excessive salivation and laceration with skin nodules.

All the samples were transmitted cooled to Pox Dept, Veterinary serum and vaccine Research Institute, Abbasia, Cairo for virus isolation.

6- Serum samples :

A total of 250 blood samples from clinically infected and apparently normal contact cattle without anticoagulant were obtained for serum sepnotion. The samples were collect at different stage of the disease, 90 at early stage of the disease , 75 at late stage (3 weeks after beginning of the signs) and 85 from apparently normal in contact animals.

B-Buffaloes samples

1- Buffy coat :

Five heparinized blood samples for buffey coat separation from the clinically suspect water buffaloes two of them showed generalized nodules with systemic disturbance and three with localized nodules.

2- Serum samples :

25 blood samples without anticoagulant for serum separation were collected, 5 from clinically diseased water buffaloes and 20 from clinically normal in contact water buffaloes with deferent age and sex.

Reference virus and antiserum.

It was kindly obtained from the foreign animals diagnostic laboratory Plum Island, USA and stored at pox Dept, veterinary serum and vaccine research institue, Abbasia, Cairo, these agents were used for application of SNT, IFAT and ELISA tests.

A- Virus isolation :

According to **(Van rooyen et al., 1969)**

B-Virus titration:

According to **(Van rooyen et al., 1969)** and infective dose 50 end point were calculated by the method of **Reed and Muench., (1938)**.

The titration of the isolated virus in monolayer MDBK cell line using the method of FADDL Diagnostic laboratory **Protocol 602 (1985)**.

C-Virus identification: The isolated virus was identifying mainly by:

1- Indirect fluorescent antibody technique (IFAT): It was carried on MDBK cells **(Davies et al.: 1971)**.

2- Histopathological examination: It was performed on MDBK cell line and on skin biopsy samples collected from diseased animals **(House et al, 1990)**.

3- Virus neutralization test (VNT): It was conducted using reference serum according to Manual of serological microtitration techniques, (1981).

D- Serological tests:

The following tests were carried out to detect specific antibodies against LSD virus

1- Serum neutralization test (SNT): It was carried out using standard LSD virus according to FADDL Diagnostic laboratory **Protocol 602 (1985)**.

2- Enzyme linked Immunosorbent assay (ELISA): It was applied according to the methods of **(Voller et al, 1976)**.

RESULT AND DISCUSSION

Lumpy skin disease is insidious epidemic disease has a potential rapid spread with ability to causes great economic losses **(Anon 1985; Wood; 1988, House; 1996 and Radostis et al 2000)** LSD is now considered as enzootic disease in Egypt as several mild outbreak recorded in Egypt after 1988 but with low morbidity and nil mortality, **Davies 1991 , Hassan 1993 and Hamoda et al 2002**. In our studies the new outbreak of LSD appeared in Egypt during the summer of 2005 in cattle and the clinical observation revealed different clinical forms of the disease acute, sub acute and unapparent infection. The clinical forms were classified according to the body temperature and size ,site and number of skin nodules and the systemic

disturbance.

The acute form characterized by high diphasic fever ranged from 41-42°C for 3-5 days with hared pulse and respiration, congested mucous membranes, off food and the skin covered by painful nodules from 0.5 to 5cm in diameter and flat topped with erected hair which appear 3- 5 days after onset of fever (plate A photo 3,6) .Lymphadenitis and swelling in dewlap and legs, mucopurulent discharge from nostrils, coughing and often stertorous respiration, conjunctivitis and keratitis may be seen. The nodules appeared as erythematic area followed by nodules which become necrotized later and sloughed to leave ulcer or may be reabsorbed (plate C). Mucous plaques were noticed on the conjunctiva, nostrils, lips and vulva (plate B). The course were prolonged and if animal survive it shwoed sitefast with cutenous inflemation and in same cases fibrinous myositis was noticed. (plate D) some few cases were die in this time due to hyperthermia and other died after complication at 4th weeks and the recovered animals showed sever emaciation and loss of condition and the course usually 5-7 weeks.

Subacute form characterized by short course fever 40-40.5°C for 1-3 days, in same cases the 1st signs of illness were few number small size nodules on neck ,trunk and legs with partial loss of appetite the course usually 3-5 weeks (plate A photo 4&5)

Inapparent form in animal without any clinical sings but serodiagnosis detect antibodies titer in their serum table (7). and this clinical sings were similar to the finding of **El-Kanowaty 1989,Youssef et al; 1990, Agag et al; 1992, Sedeek 1992 Hafez et al; 1992, Hassan 1993, Abo Zaid et al; 1994, and Coetzer 1994, Redostitis et al; 2000, Abd El-Rahim et al; 2002 and Hamoda et al ;2002.**

This outbreak showed morbidity rates 14.36% and 33.5% in vaccinated and non vaccinated cattle groups respectively. Mortality rates were 1.13% and 4.7% while case fatality rates were 7.9% and 14% in vaccinated and non vaccinated groups respectively (Table 4). The our result are agree with **Coetzer et al; 1994** who mentioned that the morbidity rate of 5 to 45% on affected farms in South Africa is usual. And the mortality rate may be as high as 10% and same animals appear to be naturally resistance to LSD as only 40-50% of experimentally infected cattle developed generalized skin lestons. the same result were nearly recorded by **Ali et al 1990** but it higher than recorded by **Hafez et al; 1992, Abd El-Rahim et al; 2002 and Hamoda et al 2002.** The higher morbidity and mortality indicate the severity of this out break and this may be expland as at last years the LSD had rarely presented a problem to the former since 1988 and epidemic use of LSD vaccine had declined to low levels and the level of immunity in the hard were there for low so the spreed of the disease were high and this notice supported by (**OIE 1989, Davies 1991; Moussa 1996 and Radostitis et al., 2000**) they revealed as Lumpy skin

Geering., 1978 and Ali et al, 1990 and Hamoda et al 2002).

The presence of serum neutralizing antibodies in water buffaloes serum although there dose not Capri pox vaccination program for water buffaloes in Egypt gave an indication for the ability of LSDV to introduce, infect and stimulate immune defense mechanism of buffaloes **(Hassan., 1993)**.

Regarding to the age subgroups the high morbidity rate was recorded in adult cattle 19.6% and 42.9% in both groups I&II(table 1&2) respectively and this may be due to milking and parturition stress which leading to immune suppression and increase host susceptibility.

While the high case fatality rate recorded in calves subgroup 3 (20.8% and 21.15%) in both groups I&II respectively (table 3).This may be due to ill developed calves immune system and failure of passive immunization (**Quinn et al, 1994**).

Laboratory Virus isolation and identification from different samples (table 6) revealed that the available of skin biopsy and lymph node biopsy for virus isolation during the course of LSD while other negative samples may be due to absence of viremia during sampling and this supported by **(Tuppurainen et al; 2005)** they revealed that the length of the viraemic period did not correlate with the severity of the clinical disease and viremia was detected from 1-12 days using virus isolation while the virus can be isolated from skin up to 39 days post experimental infection.

Regarding to the results of experimental infection, ID inoculation of the field virus isolated from buffaloes revealed formation of circumscribed firm swelling at the site of injection of two inoculated cattle from the 3rd days post inoculation till the 7th days which regress rapidly within one week without generalization or systemic disturbance. While in the field virus isolated from cattle, there was systemic reaction (increase in temperature, respiration and pulse) beside local nodular lesion and there was no generalization. Incontact animals appeared clinically normal during the period of the experiment. These results were co-incided with that reported by **Carn and Kitching., (1995)** who concluded that following I/D inoculation of LSD virus, local lesions were developed at the site of challenge without viremia and generalization of infection and **Coetzer et al; (1994)** who mentioned that some animals appear to be naturally resistance to LSD as only 40- 50% of experimentally infected cattle developed generalized skin lesions. Moreover the above results were in parallel to that noticed by **Hassan., (1993) and Hamoda et al; 2002** who observed the characteristic clinical signs on cattle and buffalo after 5-7 days post inoculation at the sites of inoculation only with some respiratory signs, fever and marked increase of skin thickness with appearance of characteristic skin nodules and the cattle showed clear signs than buffalo, also these findings resemble those obtained by **Young et al, (1968)** who

reported that LSD might occur in buffaloes as well as in cattle.

It could be concluded that:

The severity of LSD outbreak Egypt 2005, LSD of cattle occasionally affecting buffaloes with variant degree of severity. Local produced sheep pox vaccine succeeded in protection against the disease and we advice to flow regular policy for vaccination against LSD due to the endemic nature of the disease in Egypt. Insect proof isolation house is indicated in all farm to prevent rapid spread of the disease especially during outbreaks hand by hand with vaccine program.

Table:(1)Number of clinically disease animals and deaths in group I(vacciuated) in relation to examined animals numbers in each age subgroup(S.G.) of cattle.

Locality / Age		Examined animals	Clinically disease	Morbidity rates	Emergency slaughter and deaths	Case fatality rates	Abortion	
							No.	Rate
S.G.1	Demitta	297	86	28.9	1	1.16	3	3.48
	Dakahlia	600	90	15	12	13.3	2	3
	Total	**897**	**176**	**19.6**	**13**	**7.38**	**5**	**0.55**
S.G.2	Demitta	180	23	12.7	-	0	-	-
	Dakahlia	500	30	6	2	6.66	-	-
	Total	**680**	**53**	**7.7**	**2**	**3.7**	**-**	**-**
S.G.3	Demitta	34	11	32.3	2	18.1	-	-
	Dakahlia	150	13	8.6	3	23	-	-
	Total	**184**	**24**	**13.**	**5**	**20.8**	-	-

Group I vaccinated cattle
Group II nonvaccinated cattle

SG1= Adult cattle
SG2 =6-24m old cattle
SG3 =Calves under 6 months

Table:(2) Number of clinically disease animals and deaths in group II (Non vaccinated) in relation to examined animals numbers in each age subgroup(S.G.) of cattle.

Locality / Age		Examined animals	Clinically disease	Morbidity rates	Emergency slaughter and deaths	Case fatality rates	Abortion	
							No.	Rate
S.G.1	Demitta	1143	51	45.3	54	10.42	35	6.75
	Dakahlia	120	25	20.8	4	16	1	4
	Total	**1263**	**543**	**42.9**	**58**	**10.68**	**36**	**6.62**
S.G.2	Demitta	757	182	24.04	37	20.3	-	-
	Dakahlia	500	113	22.6	19	16.8	-	-
	Total	**1257**	**295**	**23.46**	**56**	**18.98**	-	-
S.G.3	Demitta	93	37	39.7	7	18.9	-	-
	Dakahlia	43	15	348	4	26.6	-	-
	Total	136	**52**	**38.2**	**11**	**21.15**	-	-

Group I vaccinated cattle
Group II nonvaccinated cattle

SG1= Adult cattle
SG2 =6-24m old cattle
SG3 =Calves under 6 months

Table (3)Morbidity ,Mortality and case fatality rates in groups (I&II) in different age subgroups (1,2&3)of cattle

Age subgroups		Number			Morbidity rate	Mortality rate	Case fatality rate
		Examined	Disease	Deaths			
Group I	SG1	897	176	13	19.6	1.44	7.3
	SG2	680	53	2	7.7	0.29	3.77
	SG3	184	24	5	13	2.71	20.8
	Total	**1761**	**253**	**20**	**14.36**	**1.13**	**7.9**
Group II	SG1	1263	543	58	42.9	4.59	10.68
	SG2	1257	295	56	23.46	4.45	18.98
	SG3	136	52	11	38.2	8.08	21.15
	Total	**2656**	**890**	**125**	**33.5**	**4.7**	**14**
	Total	**4417**	**1143**	**145**	**25.87**	**3.28**	**12.68**

Group I vaccinated cattle
Group II nonvaccinated cattle

SG1= Adult cattle
SG2 =6-24m old cattle
SG3 =Calves under 6 months

Table (4) Morbidity , Mortality and case fatality rates in water buffalo in different age groups.

Age	Number			Morbidity rate	Mortality rate	Case fatality rate	Abortion
	Examined	Disease	Deaths				
Over 3Y	453	3	0	0.66	0	0	0
1-3 Y	215	2	0	0.93	0	0	0
1 D- 1Y	88	0	0	0	0	0	0
Total	**756**	**5**	**0**	**0.66**	0	**0**	**0**

Y=Year **D=Day**

Table (5) Diseased and deaths percent in cattle and buffalo in different seasons

season	Cattle				Buffalo			
	diseased. No	diseased %	Deaths No	Deaths %	diseased No	diseased %	Deaths No	Deaths %
Winter	0	0	0	0	0	0	0	0
spring	285	24.93	21	14.48	1	20	0	0
Summer	524	45.84	72	49.65	3	60	0	0
Autumn	334	29.22	52	35.86	1	20	0	0
Total	**1143**	**100%**	**145**	**100%**	**5**	**100%**	**0**	**0**

Table (6): virus isolation, identification and titration from cattle and Buffalo.

Samples	Ex. No	+ve No	Virus isolation			Virus identification		Mean of Virus titiretion	
			ECE	L.T	MDBK	VNT	IFAT	ECE	MDBK
Buffy coat	25	20	+	+	+	+	+	4.6	4.2
LN biopsy	10	10	+	+	+	+	+	4.8	4.4
Skin biopsy	35	33	+	+	+	+	+	4.2	4
Tracheal plaques	2	2	+	+	+	+	+	4.5	4.2
Saliva	10	0	-	-	-	-	-	-	-
Buffalo Buffy coat	5	2	+	+	+	+	+	3.6	3.5

ECE: embryonated chicken egg
MDBK: medein darby bovine Kidney cell line
L.T.: Lamb testicle primary cell
VNT :virus neutralization test
IFAT: indirect fluorescent antibody technique

Table (7) Mean antibody titer of infected and contact cattle serum by using SNT and ELISA.

Groups	Number of samples			SNT titer	ELISA titer
	Demitta	Dakhlia	Total		
Early infection	30	60	90	64	3200
Late infection	20	55	75	128	4500
contact cattle	20	65	85	32	2000
Total / Control	70	180	250	+ve 32 –ve 8	+ve 1000 –ve 100

Table(8) Mean antibody titer of infected and contact buffalo serum by using SNT and ELISA.

Group	Samples number	SNT	ELISA
Clinically infected	5	32	1400
Contact buffalo	20	16	1200
Total / control	25	+ve 32 -ve 8	+ve 1000 -ve 100

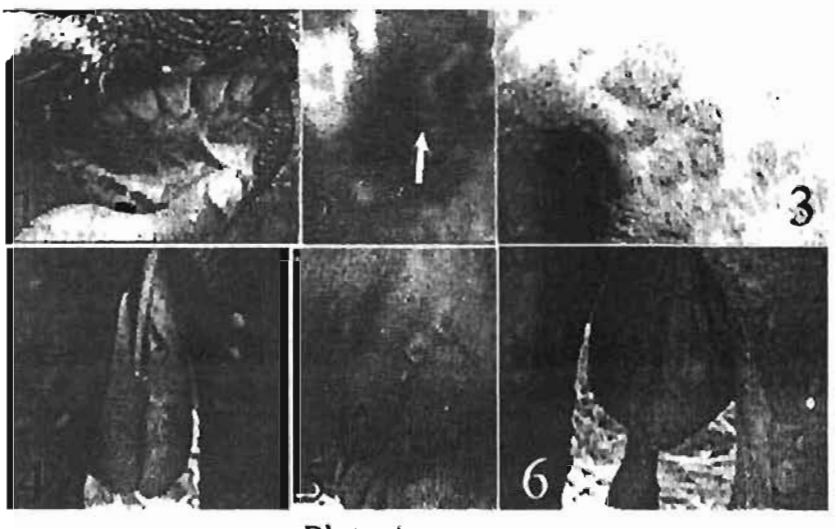

Plate A

Acute and subacute LSD in cattle

1-Mucosal plaques in gum
2- Mucosal plaques in nostrils
3-Skin nodules around nostrils
4- Few skin nodules on hind limps
5- Few skin nodules on shoulder
6- Sever skin nodules in hind limps

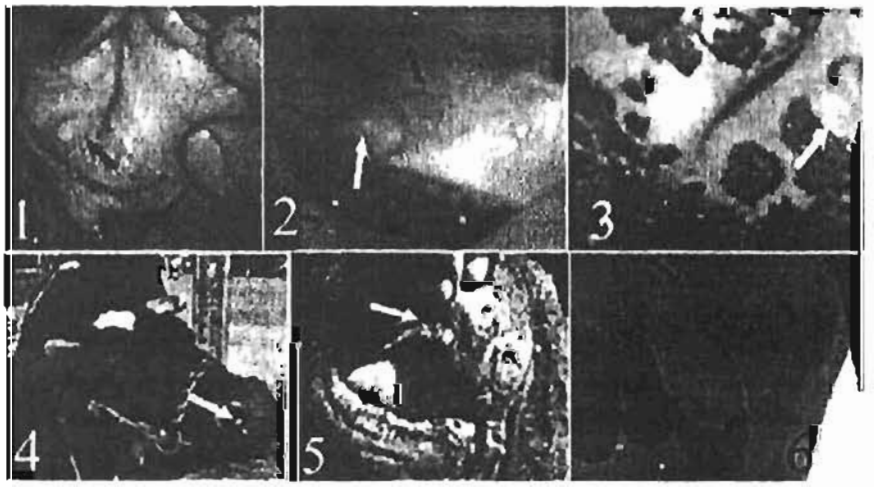

Plate B

LSD lesions on mucous membrane and teat in cattle

1-Mucosal plaques in vulva
2- Mucosal plaques in lip
3- Mucosal plaques in nostrils
4- Mucosal plaques in nostrils
5- Mucosal plaques in conjunctiva
6- Skin nodules in the teat

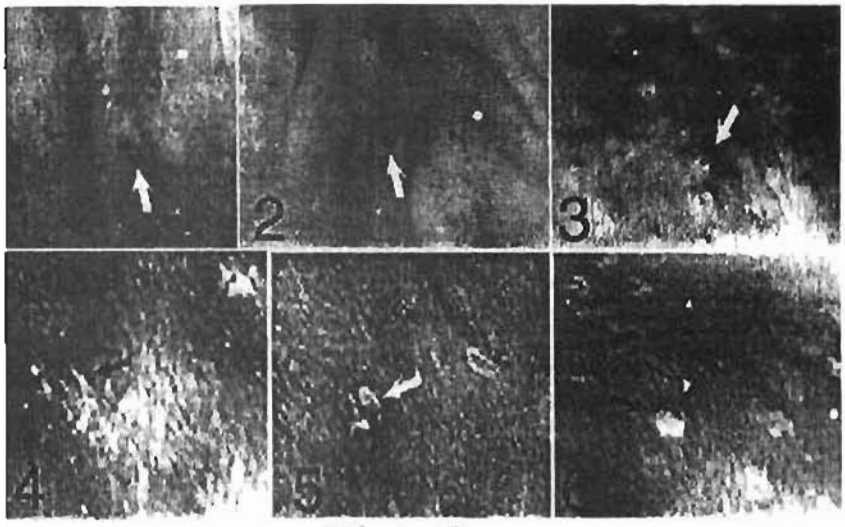

Plate C

LSD nodules stages in cattle

1- Erythematic skin nodules
2-Early skin nodules
3-Mature skin nodules
4-Site fast Skin nodules
5-Sloughing Skin nodules
6- skin scar

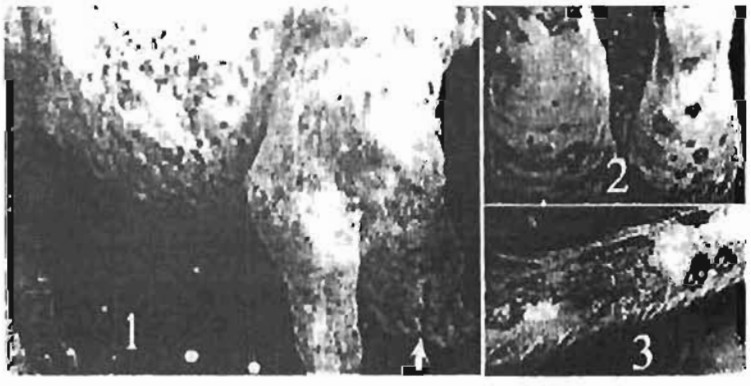

Plate D

LSD complication in cattle

1-oedematous swelling in dewlap
2- edematous swelling in leg
3-cutenous skin necrosis in tail

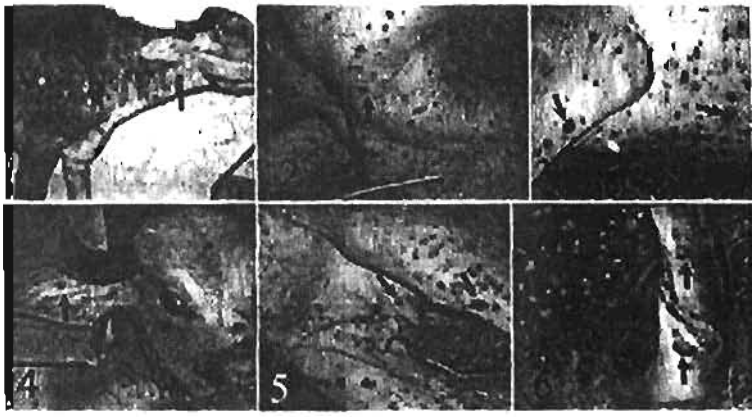

Plate E

Generalized LSD nodules in buffaloes

1-Generalized skin nodules
2- Skin nodules on shoulder
3- Skin nodules on fore leg
4 Skin nodules on external ear
5- Skin nodules on udder and teat
6- Skin nodules on ventral of the tail

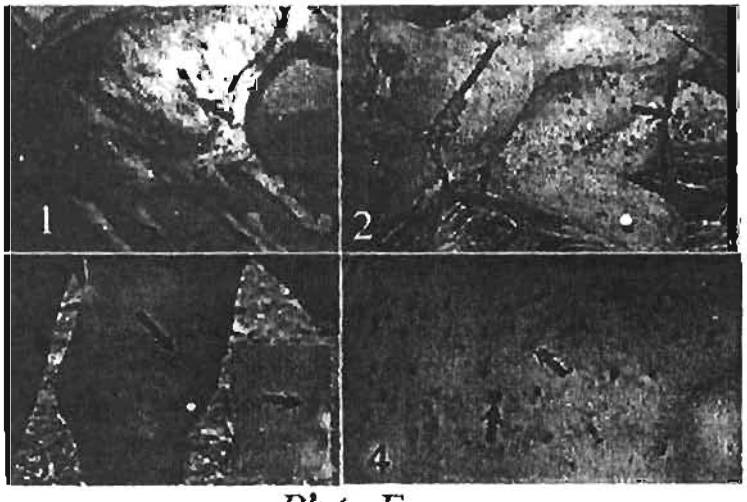

Plate F

Generalized and localized LSD nodules in buffaloes

1-Generalized skin nodules
2- Generalized skin nodules
3-Localized skin nodules
4 – permanent scar allover the skin

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بعض الدراسات عن وباء الجلد العقدى (مصر ٢٠٠٥)

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مرض الجلد العقدى مرض مستوطن فى أفريقيا ولم يسجل خارجها إلا عام ١٩٨٨ فى إسرائيل والكويت ومصر، يصيب المرض الأبقار بصفة خاصة ويسبب المرض خسارة إقتصادية فادحة تتمثل فى نسبة الوفيات التى قد تصل إلى (٤٠٪) ولكنه عادة ماتكون (٥-١٠٪) بالإضافة لطول فترة المرض التي تتراوح من (٥ - ٧) أسابيع مما يؤدى إلى توقف إنتاج اللبن فى الأبقار الحلابة والتى قد تعانى من هزال شديد والذى يحتاج إلي فترة علاج طويلة.

ولقد شوهد هذا المرض إبتداء من عام ١٩٩٣ فى الجاموس المصرى وبخاصة فى الدلتا والذى يعتمد عليه كحيوان أساسى فى إنتاج اللبن.

أجريت هذه الدراسة فى الفترة من أبريل حتى نوفمبر ٢٠٠٥ وتم فحص عدد (٤٤١٧) حالة أبقار تمثل فى حيوانات كبيرة ونامي وعجول رضع وتم تشخيص المرض إكينيكياً فى عدد (١١٤٣) حالة بنسبة (٢٥٫٨٪) وكانت نسبة النفوق (٣٫٢٨٪)، وبالنسبة للعمر شوهد المرض فى الأبقار الكبيرة حيث كانت نسبة الإصابة (١٩٫٦٪) في الحيوانات المحصنة و(٤٢٫٩٪) فى غير المحصنة كانت نسبة الوفيات فى العجول الرضع من أمهات محصنة (٢٫٧١٪ و٨٫٠٨٪) من أمهات غير محصنة أما بالنسب للجاموس المصرى فلقد سجلت (٥) حالات مصابة من إجمالى (٧٥٦) حيوان بنسبة (٠٫٦٦٪). وكانت الأعراض موضعية في عدد (٣) حيوانات فيما شوهد المرض بالصورة الشاملة فى عدد (٢) حيوان حيث شوهدت التغيرات الجسدية فى الحيوانات من الحرارة وعدم الرغبة فى الأكل، كانت أعلى معدلات الإصابة فى شهور الصيف حيث يتواجد أعداد زائدة من الحشرات الناقل للمرض.

أما بالنسبة للتشخيص فقد تم تجميع (٨٢) عينة لعزل الفيروس من الأبقار المصابة والنافقة بعدد (٢٥) عينة طبقة البفى، (١٠) من الغدد الليمفاوية، (٢٥) عينة من الجلد، عدد (٢) من القصبة الهوائية و(١٠) عينات من اللعاب وتم تجميع عدد (٥) عينات من طبقة البقى من الجاموس ولقد تم عزل الفيروس بنسب مختلف من جميع العينات من الأبقار والجاموس وتم التعرف على الفيروس المسبب للمرض باستخدام إختبار التعادلى المصلى واختبار الفلوروسنتى المشع الغير مباشر باستخدام أجسام مضادة معروفة.

تم تجميع عدد (٢٥٠) عينة دم لفصل السيرم من محافظتي دمياط والدقهلية من مراحل مختلفة من فترة المرض في الأبقار في البداية (٩٠) والنهاية (٧٥) ومخالط بدون أعراض للمرض (٨٥) وتم قياس معدل الأجسام المناعية باستخدام الاليزا واختيار التعادل المصلى وتراوحت نسبة الأجسام المناعية من (٣٢-١٢٨) بالنسبة للتعادل المصلى ومن

(٢٠٠٠ - ٤٥٠٠) لاختبار الاليزا، أما بالنسبة للجاموس فقد تم تجميع (٢٥) عينة من حالات مصاب و(٢٠) عينة من المخالط، وتم تشخيص الأجسام المناعية فى السيرم التى تراوحت مابين (١٦-٣٢) للتعادل المصلى و(١٠٠٠-١٤٠٠) بالنسبة لاختبار الاليزا.

ثم تم عمل عدوى تجريبية فى الأبقار باستخدام فيروسى الحقل (فيروس الأبقار وفيروس الجاموس).

وكانت النتيجة بالنسبة لفيروس الأبقا حدوث عدوى جسيمة شاملة إرتفاع حرارة وعقد جلدية موضعية أما بالنسبة لفيروس الجلد العقدى الجاموسى فقد تم ملاحظة رد فعل موضعى مكان الحقن لمدة إسبوع ثم إختفى فى خلال إسبوع.

وقد تم دراسة فاعلية إستخدام لقاح جدرى الأغنام المنتج محلياً فى مواجهة وبا، الجلد العقدى وبالرغم من ظهور حالات مرضية فى الحالتين إلا أنه لوحظ إنخفاض عدد حالات الإصابة وعدد حالات النفوق والإجهاض بالمقارنة بالمجموعة الغير محصنة حيث كانت بالترتيب (٣٦ر١٤٪، ١٣ر١٪، ٥٥ر٥٪) بالنسبة للقطعان المحصنة بينما كانت بالترتيب (٥ر٣٣٪، ٧ر٤٪، ٦٢ر٦٪) بالنسبة للقطعان الغير محصنة مما يدل على فاعلية اللقاح فى مواجهة المرض وتقليل الخسائر الاقتصادية.

ومماسبق نستخلص الآتى :

١- ظهور المرض بنسبة بصورة وبائية فى صيف ٢٠٠٥.

٢- إعتبار الجاموس من العوائل الفقارية للمرض جنباً إلى جنب مع الأبقار ومع الفارق الكبير فى القابلية للمرض.

٣- نجاح لقاح جدى الأغنام فى تقليل الإصابة وبالتالى الخسارة الاقتصادية ولذلك نوصى باستمرار إستخدامه إجبارياً.

٤- يجب أن يتم تخصيص مكان للعزل مقاوم للحشرات للسيطرة على المرض وقت تفشى الوبا،.