

CLINICAL AND EPIDEMIOLOGICAL STUDIES ON RESPIRATORY MANIFESTATIONS IN SHEEP

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ABSTRACT

2390 Living sheep of different ages (1-12 months), sexes and breeds (Braky- Rhmany- Baladi) were examined clinically in the field for investigation of the animals which suffered from signs of respiratory manifestation [nasal discharge (serous – mucoid - mucopurulent), rapid breathing, sever dyspnea, pyrexia (rectal temp 40-41 c). congested mucous membranes, lacrimation, coughing and abnormal lung sound by auscultation. The study was carried out on (150) pneumonic lambs. The morbidity rate was 6.2 % (150/2390), mortality rate was 7.4 % and fatality rate was 19.3 % (29/150).

Bacteriological examination revealed that (75) samples were positive for bacterial growth with percentages (50%) from previously affected sites of samples. In total out of (127) bacterial isolates. Concerning Gram positive bacteria ; *staphylococcus aureus* was 10 (6.7 %) , streptococcus 8 (5.3 %) , *staphylococcus epidermidis* 14(9.3 %).while the gram negative bacteria were identified as *E.coli* 30 (20%) *Proteus* sp 28 (13.3%) *Enterobacter* sp 9 (6%) *klebseilla pneumoniae subsp pneumoniae* 5 (3.4)%

klebseilla ozaenae 7 (4.7 %), *citrobacter diversus* 6 (4%), *pasteurella multocida* 2 (1.3 %) , *providencia* 2 (1.3%) , *pseudomonas aeruginosa* 14 (9.3 %) isolated from the different examined collected samples. Bacteriological examination for (14) lung samples revealed that *staphylococcus aureus* and *Escherichia coli* were isolated from two samples (14.2) % and other bacteria were *mannheimia haemolytica* , *pseudomonas aeruginosa*, *Enterobacter agglomerans*, *Haemophilus somnus* every one of them were isolated from one sample (7.1%). Only *actinomyces pyogenes* was isolated from three samples (21.3%).

The bacterial examination of lung samples showed that ; all isolates were single such as *actinomyces pyogens* from two samples (14.2) , *mannheimia haemolytica* , *haemophilus somnus* *Enterobacter agglomerans* , *Staph .aureus* every one of them was isolated from one samples (7.1) % . Except two isolates were isolated from mixed cultures ; *Escherichia coli* + *Actinomyces pyogenes* and *E.coli* + *Staph aureus* .Every isolates was isolated from 1sample (7.1%). Sensitivity test revealed that

most isolates were highly sensitive to Enrofloxacin, Cephaloxine, and Ampicillin and were resistant to streptomycin

INTRODUCTION

Sheep play a vital economic role and support the survival of millions of people in our country, it is used as a source of meat, milk, wool as well as quite and effective means of money. Respiratory disorder is still a serious problem facing sheep rearing. (Hatem ;et.al2003.) the main causes of pneumonia are bacteria, fungi and viruses where poor hygienic measurement and climatic disorders are the most various predisposing factors to infection. (Radwan et al 2002). Communal bacteria were isolated with a percentage of 20% from clinically healthy sheep (Ibrahim and Mokhtar 2003). Also (Abdelatif and El-dossouky ,2006) isolated *Pasteurella multocida* (5.71%), *E.coli* (2.86%) ,*Klebsiella pneumoniae* and *Pseudomonas aeruginosa* (5.71%) from clinically healthy living lambs. Moreover (Elyas .1993) recovered *Staphylococcus aureus* (26%) , *E.coli* (16%) and *Pasteurella multocida* (3%) from clinical normal lambs. *Mannheimia hemolytica* were culturally isolated from the nasal secretion and lung of diseased pneumonic sheep (Quinn et al .,1994). Both *Mannheimia haemolytica* (*Pasteurella*) and *Pasteurella multocida* were associated with pneumoniae in sheep and goat (Davies : 1985). Moreover, (Radwan et al.,2002) reported that *Pasteurella multocida* was the most important cause of pneumoniae in goat. Also (Elyas .1993) isolated from pneumonic

lungs of sheep and goat *Mannheimia haemolytica* , *E.coli* and *Klebsiella pneumoniae*. The clinical source of *Klebsiella pneumoniae* infection is usually rapid with lung tissue necrosis and frequent formation of abscess (Reed .1973) *Pasteurella* spp. *Klebsiella* spp. and *Staphylococcus aureus* are the most bacterial cause of sheep pneumoniae (Martin.1996).

This study was directed mainly to determine:

1. Epidemiological studies of ovine pneumonia.
2. Clinical finding of ovine pneumonia.
3. Bacterial causes of ovine pneumonia.
4. The sensitivity of the isolated bacteria to different drugs to aid in the choice of drug.

MATERIAL & METHODS

I- Material

1-Samples

1- **Nasal swabs:** (2390) Living sheep of different ages (1-12 months), sexes and breeds (Braky- Rhmany- Baladi) were examined clinically in the field for investigation of the animals which suffered from signs of respiratory manifestation. Nasal swabs were taken under septic condition from (150) pneumonic lambs of both sexes' aged from 1-12 months suffering from respiratory disorder. Includes [nasal discharge (serous – mucoid - mucopurulent), rapid breathing, severe dyspnea, pyrexia (rectal temp 40-41 c). congested mucous membranes, lacrimation, coughing and abnormal

lung sound by auscultation. These lambs belonged to different herds at Alexandria governorate.

2- Lung samples (14) lung samples were obtained from slaughtered pneumonic lambs at abattoirs. And sent to laboratory directly for bacteriological directly examination

2-Media

The following media were used according to (***Finegold and martin 1982***) Nutrient agar, Blood agar, Tryptose soya agar. MacCkonkey agar, mannitol salt agar, dextrose starch agar. Nutrient broth, Brain heart infusion broth Muller Hinton agar, Muller Hinton broth and were obtained from (oxid Lt d)

Antibiotic sensitivity test ampicillin 10 ug , ampicillin 10 ug , cephaloxin 10mg , Enrofloxacin 10 mg , Erythromycin 10 mg ,Gentamycin 10 ug , oxyteracycline 30 ug penicillin 10 ug were used according to the instruction of the manufactures on random isolates from each species and obtained from (oxid Ltd)

3-Stains ; Gram stain and Giemsa stain were used according to (***Finegold and martin .1982***)

II- Methods

1- Collection of samples

Nasal swabs collected from clinical cases. The cotton swabs were pushed as possible into one nostril then transferred to sterile nutrient broth in tubes. (***Woldehiwt.et al 1990***).

Lung samples: the sterilization of lung tissue was done by flamed spatula and cut, take swabs or apiece of lung to cultures into peptone water. The samples were taken under aseptic

condition and sent without delay to laboratory. All media previously melted and cooled till 40c inoculated and control plates were incubated at 37c for 24-48 hours (***Cruickshank et al 1975***)

2- Isolation and identification of the isolates according to (***Quinn et al, 1994***)

All previously collected samples were inoculated into the following solid media ; nutrient agar . MacCconkey agar .mannitol salt agar 7.5 % . tryptose soya agar and dextrose starch agar . Incubated aerobically at 37c for 24-48 hours, the isolated colonies were streaked on new sterile pure culture of Nutrient agar and subcultured on slopes agar for further identification by study the culture characters pigment production. Staining reaction and cell morphology as well as aggregation. The biochemical activities of pure isolates were carried out according to (***Finegold and martin.1982***)

3- Sensitivity of microorganism to antibiotics was determined by using Muller Hinton agar plates and standard disc technique according to (***Quinn et al 1994***)

RESULTS AND DISCUSSION

((2390) Living sheep of different ages (1-12 months), sexes and breeds (Braky- Rhmany- Baladi) were examined clinically in the field for investigation of the animals which suffered from signs of respiratory manifestation Nasal swabs were taken under septic condition from (150) pneumonic lambs of both sexes' aged

from 1-12 months suffering from respiratory disorder includes [nasal discharge (serous – mucoid - mucopurulent), rapid breathing, severe dyspnea , pyrexia (rectal temp 40-41 c). congested mucous membranes, lacrimation, coughing and abnormal lung sound by auscultation. our results agree with *Radostits et al. (1995)*.

The study was carried out on (150) pneumonic lambs. The morbidity rate was 6.2 % (150/2390), mortality rate was 7.4 % and fatality rate was 19.3 % (29/150) as shown in table (1).

Nasal swabs were collected under septic condition from (150) clinically diseased sheep suffering from respiratory disorders and examined bacteriology.

Table (2), showing (75) Samples were bacteriologically positive (50%), 50 from them showed single cultures (33.3 %) and 25 mixed cultures (16.7 %).

Table (3), revealed The bacteriological examination of (150) nasal samples collected from lambs showing respiratory manifestation revealed that *Escherichia coli*, *pseudomonas aerogenosa* and *staphylococcus epidermidis* were the most predominant bacteria. As *Escherichia coli* was isolated from 30 samples (20%), *pseudomonas aerogenosa* and *staphylococcus epidermidis* as each of them were isolated from 14 (9.3%) followed by *proteus vulgaris* and *staphylococcus aureus* as each of them were isolated from 10 (6.7%), *proteus mirabilis* and *streptococcus sp* bacteria as each of them were isolated from 8 (5.3%), *klebsiella subsp ozaenae* was isolated from 7 (4.7%), *klebsiella pneumoniae subsp pneumoniae* and *enterobacter*

agglomerans as each of them were isolated from 5 (3.4%), *citrobacter diversus* from 6 (4%), *enterobacter cloaca* was from 4 (2.6%) and *proteus myxofaciens*, *providencia* and *pasteurella multocida* as each of them were isolated from 2 (1.3%).

Table (4), showed that *E.coli* were the most isolate as a single culture were isolated from 17 samples (11.3 %) followed by *staphylococcus epidermidis* from 11 samples (7.3%), *pseudomonas aeruginosa* from 10 samples (6.7 %) , *streptococcus sp* from 4 samples (2.7%), *staph. aureus* from 3 (2%), *klebsiella pneumoniae subsp pneumoniae* and *pasteurella multocida* as each of them were isolated from 2 (1.3%) and *Enterobacter agglomerans* from one samples (0.7). The total isolates 50 isolates (33.3 %).

Table (5), showed that mixed cultures of total number of isolation from pneumonic lambs was 25 isolates (16.75%) were *E.coli*, *Proteus vulgaris* and *Staphylococcus aureus* were isolated from 7 samples (4.7 %) , *Proteus vulgaris* and *Klebsiella ozaenae* were isolated from 3 (2%), *Proteus mirabilis*, *Citrobacter* ,*Enterobacter cloaca* from 3 (2%), *E.coli*, *Enterobacter agglomerans* and *Klebsiella ozaenae* were isolated from 3 (2%), *Proteus mirabilis*, *Citrobacter* , *Pseudomonas aeruginosa* and *Staph. epidermidis* were isolated from 3 (2 %). *E.coli*, *Providencia* and *Streptococcus sp* were isolated from 2 (1.3%). *Proteus myxofaciens*, *Klebsiella pneumoniae subsp pneumoniae* and *streptococcus sp* were isolated from 2 (1.3%). *proteus mirabilis*, *pseudomonas aeruginosa*,

enterobacter agglumerans and klebsiella pneumoniae subsp pneumoniae were isolated from 1 (0.7%). proteus mirabilis E.coli Klebsiella ozaenae and Enterobacter cloaca were isolated from one samples (0.75%)

These finding in general are somewhat similar to those obtained by **El-Sherif and Abd-El-Ghani (1974)** who found that from 157 sheep with respiratory disease, 135 contained specific bacteria. pasteurella multocida was recovered at percent of (3.9%). Esherichia coli representing 12%. Pseudomonas aeruginosa were also recovered at percent of (7.352%). Staphylococcus epidermidis have been isolated with staphylococcus aureus and alpha-haemolytic streptococci from diseased sheep. The percent of last two bacteria were 6.2% and 8.5%, respectively. Corynebacterium pyogenes have been isolated with unclassified Corynebacterium at percent 7% and 6.2% respectively. **Gameel et al. (1991)** isolated Klebsiella pneumoniae from sheep suffering from pneumonia. **Elyas (1993)** isolated Staphylococcus aureus, staphylococcus epidermidis, and Streptococcus pneumoniae from 60 affected sheep at percent 6%, 5%, and 8%, respectively. Corynebacterium pseudotuberculosis also have been isolated at percent of 8%. On the other hand Escherichia coli, Klebsiella pneumoniae, and Pseudomonas aeruginosa were also isolated at a percentage of 3%, 7%, and 7%, respectively.

On other hand these findings were contrast with **Alley, (1975)** who recorded that The percentages of *mannheimia haemolytica (pasteruella)*

isolated from 184 normal sheep and 246 sheep with subacute and chronic forms of pneumonia were 73% from the nasal cavities, 5% from trachea and 5% from lung of normal sheep, and 78% from the nasal cavities, 54% from trachea and 59% from lung of pneumonic sheep. Also Escherichia coli have been recovered from normal and diseased sheep suffering from pneumonia. **Kaya and Erganis (1991)** isolated pathogenic bacteria from 57 out of the 102 affected adult sheep and 41 out of 50 affected lambs with pneumonia. The commonest bacteria isolated were Pasteurella haemolytica (16) isolates and Pasteurella multocida (7) isolates. Staphylococcus aureus was recovered alone or in combination with other organism from 23 cases. Also Klebsiella pneumoniae have been isolated from 15 out of 41 pneumonic lambs. **Blanco-viera, et al. (1995)** reported that about 112 strains of pasteurella spp. were isolated from cattle and sheep. Forty isolates were identified as *mannheimia haemolytica (pasteruella)* and 72 isolates as pasteurella multocida. 100% of *mannheimia haemolytica (pasteruella)* belonged to biotype A. But 61% of pasteurella multocida isolates belonged to type A, 25% to type D and 14% were untypified. **Boujihad and Leipold (1995)** reported that about 64 sheep suffering from respiratory disorders, were examined bacteriologically the bacteriological examination resulted in isolation of pasteurella multocida from 55 sheep and *mannheimia haemolytica (pasteruella)* from 9 sheep. **Mohamed and Shaker (2002)** isolated *mannheimia haemolytica (pasteruella)* from apparently healthy and diseased sheep at percent of 56% and 75%,

respectively. And 66% and 90% from emergency slaughtered and dead sheep, respectively. Those studies showed that the *Pasteurella multocida* and *Mannheimia haemolytica* (*Pasteurella*) were the predominant bacteria contrast to our study may be due to *Pasteurella* sp be located at intervals in nasal cavities several studies indicated the high incidence of *Escherichia coli* isolate and *Pseudomonas aeruginosa* from nasal swabs of pneumonic lungs. (Sayed 1996) and (Quinn et al 1994) cited that *Pseudomonas aeruginosa* , *Bordetella parapertusis* *Actinomyces pyogenes* and *Klebsiella* sp were implication as causes of pneumonia among lambs and adult sheep concentration of her member of *Enterobacteriaceae* and *Staphylococcus epidermidis*, their role in the pathogenesis of lambs pneumonia is unknown But may indicated poor hygienic practice or other factors such as overcrowding bad climates or method of husbandry regarding single and mixed cultures. *Escherichia coli* and *Pseudomonas aeruginosa* were the most frequent bacteria isolated as a single and mixed pathogen as shown in table (2,3,4).

Table (6), showed bacteriological examination for (14) lung samples revealed that *Staphylococcus aureus* and *Escherichia coli* were isolated from two samples (14.2) % and other bacteria;- *Mannheimia haemolytica* (*Pasteurella*), *Pseudomonas aeruginosa*, *Enterobacter agglomerans*, *Haemophilus somnus* every one of them were isolated from one sample (7.1%). Only

Actinomyces pyogenes was isolated from three samples (21.3%).

Table (7), showed that the bacterial isolates from lung samples were single such as *Actinomyces pyogenes* from two samples (14.2), *Mannheimia haemolytica* (*Pasteurella*), *Haemophilus somnus* *Enterobacter agglomerans* , *Staph. aureus* every one of them was isolated from one samples (7.1%). Except two isolates were isolated from mixed cultures *Escherichia coli* + *Actinomyces pyogenes* and *E.coli* + *Staph aureus*, every isolates was isolated from one sample (7.1%).

The important of *Actinomyces* and *Escherichia coli*, *Pasteurella*, *Haemophilus influenzae* as causative agents of pneumonia among sheep was fully described by **Shurma woldehivet (1990)**, and **Elyas (1993)**. Who compare the bacterial groups which were isolated from nasal swabs of lambs and those isolated from pneumonic lungs. He noticed that prevalence of *Escherichia coli* and *Pseudomonas aeruginosa*, *Staphylococcus epidermidis* following *Proteus vulgaris* and *Staphylococcus aureus* were high in nasal swab samples of affected lambs in contrast to lung samples where it was not found also *Haemophilus somnus* was not isolated from swabs samples.

Table (8) showed that, Sensitivity test revealed that most isolates were highly sensitive to Enrofloxacin, Cephaloxine, and Ampicillin and were resistant to streptomycin

REFERENCES

- Alley, M. R. (1975):** The bacterial flora of the respiratory tract of normal and pneumonic sheep. New-Zealand Vet. J. 23, 113-118.
- Blanco-viera, F. J., Trigo, F. J., Jaramillo-Meza, L. and Aguilar-Romero, F. (1995):** Serotypes of *Pasteurella multocida* and *Pasteurella haemolytica* from pneumonic lesions in cattle and sheep from Mexico. Rev Latinoam Microbiol. 37(2), 121-126.
- Bouljihad, M. and Leipold, H.W. (1995):** Preliminary pathological observations of sheep with chronic progressive pneumonia. Agri-Practice 16(2), 25-27.
- Cruickshank, R., Duguid, J.P. and Swain, R.H.A. (1975):** Medical microbiology. vol.2, the practice of medical microbiology. 12th Ed. Churchill Livingstone, Edinburgh. London.
- Davies D.H (1995)** pasteurellosis of sheep. in progress in vet. microb. Imm.vol. 229 Basel;Karger.
- El-Sherif, M.T. and Abd El-Ghani, M. (1974):** Some studies on the respiratory affections of lambs. Assiut Vet. Med. J. 1(1-2), 199-211.
- Elyas, A.H(1993):** some studies on sheep pneumoniae of bacterial and fungal origin Assiut. Vet. Med. J.(29),89-95.
- Finegold, E.M and Martin, W.J. (1982):** Baily and Scott diagnostic microbiology 6th the C.V; mosby C, Toronto London.
- Gameel, A. A., EL-Sanousi, S. M.; Al-Nawawi, F. and Al-Shazly, M. O. (1991):** Association of *Klebsiella* organisms with pulmonary lesions in sheep. Revue d'Elevage et de Med. Vet. Des pays Tropicaux. 44(2), 161-164.
- Hatem M, E, Mona, S. Zaki Osman A, H. and Mona El Shabrawy (2003):** bacteriological, histopathological and clinical pathological studies on respiratory affection in sheep and goats in Egypt. J. Egypt Vet. Med. Assoc, 63(1): 97-109.
- Ibrahim E. mohamed and mokhtar A ;(2003)** pathology and bacteriology studies on out break of pneumonic pasteurellosis in sheep at sharkia proviance ; Egypt J.Agric Res .81 (1):32-49.
- Kaya, O. and Erganis, O. (1991):** A etiological survey of pneumonia in sheep and lambs. Veterinarium 2(3-4), 27-29.
- Martin, W.B.(1996):** Respiratory infection of sheep comp. immune microb infec.Dis.19.
- Mohamed, S.R. and Shaker, M.H. (2002):** Immuno-etiological studies on *Pasteurella haemolytica* in sheep. Vet. Med. J. Giza. 50(4), 695-705.
- Quinn, P.J ; Carter, M.F ; Markey, B and Carter, G.R.(1994):** clinical veterinary microbiology 16th Ed. Mosby. Year Book. Europe limited
- Radwan 1.A; Abd El-twab A, A. and Mona A. El shabrawy(2002):** A treatise on the Bacterial causes of pneumoniae in goat ; J.Egypt Vet ,Med Ass-c,63 (6):179-187

Reed ,W .P.(1973): Indolent pulmonary abscess associated with klebsiella and Enterobacter . AM Rev Res ; 107: 1055-1059.

Radostits OM, Blood DC and Gay CC (1995): Veterinary Medicine. A textbook of the Diseases of Cattle, Sheep, Pigs, Goat and Horses. Bailliere Tindall, London.

Sayed , A.M .(1996):Some bacteriological and mycological studies on sheep pneumonia at Assiut governorate .Assiut Vet .Med ., 36(71):68-73.

Sharma ,R. and Woldehiwet ,z.(1990) : Increased susceptibility to pasteurella haemolytica in lambs infected with bovine respiratory syncytial virus .j.comp.pathol.,103:411-420.

Woldehiwt, Z., Hamache B. and Rowan T.G. (1990): the effect of age, environmental temperature and relative humidity on the bacterial flora of the upper respiratory tract in calves. Br. Vet. J. 146:211-215.

Table (1): Morbidity, mortality and case fatality rates of pneumonic lambs.

No .of sheep	pneumonic sheep no.	morbidity rate		Mortality rate		Fatality rate	
		No.	%	No.	%	No.	%
2390	150	150	6.2	179	7.4%	29	19.3

Table (2): No of positive bacterial isolates from nasal swabs collected from pneumonic lambs.

Total no of Samples	Negative samples		positive samples			
	No.	%	No.		%	
150 nasal swabs	75	50	75		50	
			Mixed cultures		Single cultures	
			NO.	%	NO.	%
			25	16.7	50	33.3

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Table (3) bacterial isolates from nasal swabs
collected from pneumonic lambs.

Bacterial isolates	No. of samples	No. of isolates	%
Escherichia coli	150	30	20
Proteus vulgaris		10	6.7
Proteus mirabilis		8	5.3
Proteus myxofaciens		2	1.3
Enterobacter cloaca		4	2.6
Enterobacter agglumerans		5	3.4
Klebsiella pneumoniae subsp pneumoniae		4	3.4
Klebsiella subsp ozaenae		7	4.7
Staphylococcus aureus		10	6.7
Staphylococcus epidermidis		14	9.3
Streptococcus sp		8	5.3
Citrobacter diversus		6	4
Pasteurella multocida		2	1.3
Providencia		2	1.3
Pseudomonas aerogenosa		14	9.3
Total isolates		126	84

Table (4): Single cultures of bacteriological examination of nasal swabs collected from pneumonic lambs.

Bacterial isolates	No. of samples	No. of isolates	%
Escherichia coli	150	17	11.3
Pseudomonas aerogenosa		10	6.7
Staphylococcus epiderimidis		11	7.3
Staphylococcus aereus		3	2
Klebsiella pneumoniae subsp pneumoniae		2	1.3
Enterobacter agglomerans		1	0.7
Pasteurella multocida		2	1.3
Streptococcus sp		4	2.7
Total no. of isolates		50	33.3

Table (5) Mixed cultures of bacteriological examination of nasal swabs collected from pneumonic lambs.

Bacterial isolates	No. of samples	No. of isolates	%
Proteus vulgaris +Escherichia coli Staph. aureus+	150	7	4.7
Proteus vulgaris + klebsiella ozaenae		3	2
Proteus mirabilis + citrobacter +entero- cloaca-		3	2
Escherichia coli +enterobacter agglomerans + Klebsiella ozaenae		3	2
Proteus mirabilis +citrobacter +pseudomonas- aerugenosa + staphylococcus epidermidis		3	2
Escherichia coli+ providencia + streptococcus sp		2	1.3
Proteus myxofaciens + klebsiella pneumoniae + Streptococcus sp		2	1.3
Proteus mirabilis + pseudomonas aerogenosa + Enterobacter agglomerans +klebsiella pneumoniae		1	0.6 6
Proteus mirabilis + Escherichia coli+ klebsiella Ozaenae +enterobacter cloaca		1	0.6 6
Total no. of isolates		25	

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Table (6): Bacterial isolates of lung samples collected from pneumonic lambs.

Bacterial isolates	No. of samples	No. of isolates	%
Pasteurella haemolytica	14	1	7.1
Staphylococcus aureus		2	14.2
Escherichia coli		2	14.2
Enterobacter agglomerans		1	7.1
Actinomyces pyogenes		3	21.3
Pseudomonas aeruginosa		1	7.1
Haemophilus somnus		1	7.1
Total of isolated		11	

Table (7): Single and mixed cultures of bacteriological examination of lung samples collected from pneumonic lambs.

Bacterial isolates	No. of samples	No. of isolates	%
Actinomyces pyogenes		2	14.2
Pasteurella haemolytica		1	7.1
Pseudomonas aeruginosa		1	7.1
Haemophilus somnus		1	7.1
Enterobacter agglomerans		1	7.1
Staphylococcus aureus		1	7.1
Escherichia coli + actinomyces pyogenes		1	7.1
Escherichia coli + actinomyces pyogenes		1	7.1
Total of isolated		9	64.3

Table (8): sentivity of bacterial isolates to antibiotics.

Bacterial isolates /antibiotics	amoxy cillin	ampi cillin	cepha loxin	Enrof loxin	erythro mycin	genta mycin	oxyetra cycline	pene cillin	strepto mycin
Staph .aureus	S	SS	SSS	S	SSS	R	S	R	SS
Staph .epidermidis	S	SS	SSS	S	SSS	R	S	R	S
Strepto. Sp	S	SS	SSS	SS	SSS	R	S	R	R
E ,coli	R	SS	SSS	R	SSS	S	S	R	R
Klebsielliae pneumoniae	R	S	SS	S	SS	S	R	R	R
Proteus vulgaris	R	SSS	SSS	S	SSS	S	S	SS	SS
P. haemolytica	R	S	SSS	R	SSS	R	R	R	R
P. multocida	R	S	SSS	S	SSS	S	SS	S	S
Citrobacter sp	S	SS	SSS	S	SSS	R	SS	R	SS
Enterobacte r aerogenes	R	SSS	SSS	S	SS	R	SS	S	S
Pseudomon as aeruginosa	R	SS	SSS	R	SS	R	R	R	R

R= resistant

S= suscepibility

Staph- Saphylococcus

Srept= Streptococcus

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