





## TREATMENT OF REPEAT BREEDER BUFFALO-COWS (With 4 Tables)

By

M.A. EL-NAGAAR; A.M. OSMAN; B.H. SERUR and A.A.M. EL-TIMAWY

(Received at 16/2/1982)

### SUMMARY

In this study, eleven antibiotics were tested against the bacteria isolated from cervical samples of 200 buffalo-cows suffering from repeat breeder. The disc method used to detect the sensitivity of the isolated organisms which were, Micrococci; Staphylococci; B-haemolytic and  $\alpha$ -haemolytic streptococci; *E.coli*; coryne bacteria; Bacillus; Klebsiella; Pseudomonas spp. and proteus spp. It was found that these organisms were highly sensitive to the action of the following types of antibiotics; chloramphenicol (100%), garamycin (97.56%), cholistine colimycin (91.46%); Deoxy cycline (81.71%), and tetracycline (80.49%), whereas less sensitive to the previous drugs such as sulphadiazine (76.22%), ampicillin (60.80%), neomycin (59.15%) and penicillin (56.1%).

The medicaments containing antibiotics used to treat the repeat breeder buffaloes were PNF; garamycin; lotagen; U.T. forte, chloramphenicol, colimycin and Lugol's iodine. The conception rates recorded after treatment the Governmental farms were 83.33%; 75.00%; 66.66%, 58.33%; 58.33%; 58.33% and 57.90% for the previous medicaments respectively. As an important conclusion, it could be taken that antibiotics supplemented with Vit. A. as PNF; Lotagen and U.T. forte proved to be superior for the treatment of repeat breeder buffalo-cows than lugol's iodine solution with better conception rates.

### INTRODUCTION

EASLEY, *et al.* (1951); EVERTZ (1955) and AWAD and EL-HARIRI (1977) cited that the intrauterine treatment of repeat breeder animals with specific antibiotic selected on the bases of *in vitro* sensitivity test gave encouraging results. AWAD and EL-HARIRI (1977) applied the sensitivity test and they found that the organisms of repeat breeder cows and buffaloes were highly sensitive to garamycin and were less for polymyxine B, streptomycin and colimycin.

EVERTZ (1955) found that one million unites of penicillin gave better results than lugol's iodine in the treatment of the bobine endometritis. It was stated by ROBERTS (1971) that if the pathogenic organisms in the uterus were combated by the proper treatment, most probably these animals will breed normally.

It was evident from the available literature that repeat breeder in buffaloes received little attention especially with regard to treatment.

The present study was designed in order to achieve a suitable and effective treatment for repeat breeder in buffaloes.

### MATERIAL and METHODS

Samples from uterine discharges of 200 repeat breeder and 36 normal breeder buffaloes were available for this investigation. These animals were among those kept at El-Hawatka buffalo farm, Assiut Agriculture School, Assiut and Abutig animal health centers as well as their villages. 200 uterine samples were collectively subjected to the sensitivity test against eleven different antibiotics prepared according to STOKES and WATERWORTH 1972. The concentration of antibiotics per disc was 30 mg chloramphenicol, neomycin, ampicillin, colistine colimycin, deoxycycline and tetracycline, 15 mg in case of erythromycin and polymyxin, 10 mg in case of garamycin, 10 I.U. for penicillin and 500 mg in sulphadiazine.

For sensitivity tests, the above standardized 24 hrs broth culture prepared from 22, strains of the isolated organisms were used. The entire surface of nutrient agar was streaked with sterile soaked swabs and left to dry in incubator. Different sensitivity discs were aseptically applied on the tryptene agar, then incubated at 37°C for 24 hrs.

The medicaments used in this investigation to treat the repeat breeder buffalo cows were lugol's iodine solution, U.T. forte, lotagen, P.N.F. and drugs of choice from antibiotics such as garamycin, chloramphenicol and colimycin sulphate.

## RESULTS

For the sensitivity test, broth cultures prepared from 229 bacterial isolates obtained from the genital tract of 200 repeat breeder and normal breeder buffalo cows in the present investigation, were 32 isolates of micrococci; 20 isolates of staphylococci, 27 strains of B-haem-streptococci; 20 strains of -haemolytic streptococci; 12 strains of *C.pyogenes*; 16 strains of unclassified corynebacterium; 14 strains of *E.coli*; 31 strains of klebsiella; 30 strains of proteus spp. and 26 strains of anthracoides.

Table 1 showed the results of the sensitivity test for 229 bacterial isolates to different antibiotics discs. It was observed that garamycin and chloramphenicol were superior in their effect. However, comparatively less sensitivity was obtained by erythromycin, tetracycline and neomycin-respectively.

In spite of the fact that cholistine colimycin, polymyxin, garamycin and chloromphenicol are considered more valuable because the ratio between sensitive and refractory was more than in case of cholistine colimycin as shown in Table 2.

Table 3 revealed that after treatment with lugol's iodine solution 1/400, the conception rate (C.R.) in farms and villages was 57.9% and 53.21 respectively.

Table 4 showed the results obtained after treatment of the repeat breeder buffalo-cows with different medicaments and drugs of choice from antibiotics. It is evident that P.N.F. gave the highest conception rate (83.33%). The number of services per conception was calculated for the treated buffaloes and values of 1.7, 1.9, 2.0 were recorded for P.N.F., U.T. forte, lotagen and lugol's iodine solution respectively. The C.R. of repeat breeder buffaloes in relation to age showed that the buffalo cows with age ranged from 5-7 years responded more favourably to the treatment than the other ages. Moreover, animals which failed to conceive after third insemination or mating were found to be infected with one of the pathogenic organisms corynebacterium, unclassified corynebacteria, haem. streptococci, klebsiella and staphylococci.

## DISCUSSION

The medicaments containing antibiotics to treat the repeat breeder buffaloes of the present work were P.N.F. garamycin, lotagen, U.T. forte, chloramphenicol, colimycin and lugol's iodine. The sensitivity test applied in this study showed that the isolated bacteria were highly sensitive to garamycin, chloramphenicol and erythromycin. The effect of tetracycline and neomycin was lesser than that of the previous drugs. On the other hand, penicillin and sulphadiazine proved to be of no value in their action on the bacteria, as the ratio between the sensitive and refractory action was 1 : 1.38 and 1 : 1.29 respectively. Similar results were obtained by CALAPRICE (1959). On the contrary, DIMITROW *et al.* (1961) and SUVEGE (1965) proved that penicillin have a good antibacterial effect. This may be attributed to the fact these authors have tested penicillin on single organism, not on mixed infection.

The results obtained by AWAD and EL-HARIRI (1977) who applied the sensitivity test to the organisms isolated from the repeat breeder cows and buffaloes. They found that most isolated bacterial strains were sensitive to garamycin while polymyxin B, streptomycin, neomycin and colistin colimycin were lesser effect than that of garamycin.

AWAD *et al.* (1978) observed that the sensitivity test against the bacteria isolated from uterine samples of buffaloes and cows suffering from puerperal infection were the most sensitive to chloramphenicol, erythromycin and novobiocin while penicillin proved to be of no value in their action on these isolates. The medicaments used to treat the repeat breeder buffaloes were PNF, garamycin, lotagen, UT-forte, chloramphenicol, colimycin and lugol's iodine. The conception rates for these drugs were 83.33%; 75%; 66.67% 58.33%; 58.33%; 58.33

## TREATMENT OF REPEAT BREEDER BUFFALO-COWS

and 53.91% respectively. It was observed that PNF and garamycin were the superior drugs which gave the best conception rates. As an important conclusion, it could be taken that antibiotics supplemented with vit. A. as PNF; lotagen and UT forte proved to be superior for the treatment of repeat breeder buffaloe cows than lugol's iodine solution with better conception rates. The present results as regard to the application of lotagen were somewhat less than that of SCHMIDT (1971), but the application of lugol's iodine was nearly similar to the application of EVERTZ (1955), GOETZE (1955) and PIETZSCH (1958). Thus in agreement with ASDELL (1955) and ROBERTS (1956), it could be stated that the general health condition of the animal greatly controls its response to medication. Many workers reported the difficulty of treatment of genitalia suffering from similar infections with lugol's solution (ASDELL, 1955; ROBERTS, 1971; ARTHUR, 1975 and AFFIEFY *et al.* 1979).

## REFERENCES

- Affiefy, M.M.; Abo-el-Ata, M.M.; Shouman, M.T.; El-Sawaf, S. and Zaki, K. (1979): Assiut Vet. Med. J. Vol. 6: No. 11 & 12, 267.
- Arther, G.H. (1975): Veterinary reproduction and obstetrics 4th Ed., E.L. B.S. and Bailliers, Tindale.
- Asther, G.H. (1955): Cattle fertility and sterility. Boston, Little, Brown and Co.
- Awad, H.H. & El-Hariri, M.N. (1977): Assiut Vet. Med. J., Vol. 8, 205-208.
- Awad, H.H.; Zaki, K.; El-Sawaf, S.A. and Affiefy, M.M. (1978): J. Egyptian Vet. Med. Assoc., 38, 9-14.
- Calaprice, A. (1959): Acta. Med. Vet. Napoli, 5, 93-100.
- Dimitrow, O.; Cerbu, A. & Vasilescu, T. (1961): Arch. roum. Path. Exp. Microbiol, 20, 425-430.
- Easley, G.T.; Leonard, R.H. & Trollor, D.M. (1951): North. Am. Vet., 32, 258-266.
- Evertz, T. (1955): Dissertation, Honover.
- Goetze, R. (1955): Antibiotics treatment of infertility of bacterial origin in the cow., 5: 97-103.
- Pietzsch, W. (1958): Inaug. Diss., Munich, 63.
- Roberts, J.J. (1956): Cornell. Vet. 46: 21.
- Roberts, S.G. (1971): Veterinary Obstetrics and genital diseases. Ithaca, N.Y. published by the author. 346.
- Schmidt, H. (1971): Dissertation, Hannover, 1971.
- Stokes, E.G. & Waterworth, P.M. (1972): Association of clinical pathologists. Broad Shet, SS.
- Suvege, T. (1965): Mgy. Allatorvy Lap., 20, 42-46.

Table 1: The results of sensitivity test of bacterial isolates obtained from repeat breeder buffaloes cows.

	No. of iso-late	H.S.		M.S.		S.S.		R.	
		No.	%	No.	%	No.	%	No.	%
Chloramphenicol	229	90	39.3	92	40.18	47	20.52	-	-
Garamycin	229	115	50.21	76	33.19	34	14.85	4	1.75
Cholistine colimycin	229	-	-	128	55.9	87	37.99	14	6.11
Deoxycycline	229	-	-	123	53.71	76	33.19	30	13.10
Erythromycin	229	80	34.9%	101	44.10	18	7.86	30	13.10
Tetracycline	229	46	20.09	84	36.68	67	29.56	32	13.97
Sulphadiazine	229	-	-	83	36.25	107	46.72	39	17.63
Ampicillin	229	22	9.62	84	36.68	59	25.76	64	27.95
Neomycin	229	10	4.37	90	39.30	62	27.07	67	29.26
Penicillin	229	45	19.65	21	9.17	91	39.74	72	31.44
Polymyxin	229	12	5.25	86	37.55	30	13.10	101	44.10

M.A. EL-NAGGAR, et al.

Table 2 : The Ratio between sensitive and Refractory uterine samples to the different antibiotics used.

	Sensitive H.S.andM.S.		Refractory S.S.		Ratio S./ Ref
	No.	%	No.	%	
Chloramphenicol	182	79.48	47	20.52	3.87 : 1.0
Garamycin.	191	83.40	34	14.85	5.62 : 1.0
Colimycin	128	55.90	87	37.99	1.47 : 1.0
Deoxycycline	123	53.71	76	33.19	1.62 : 1.0
Erythromycin	181	79.04	18	7.86	10.06 : 1.0
Tetracycline	130	56.77	67	29.26	1.94 : 1.0
Sulphadiazine	83	36.24	107	46.72	1.00 : 1.29
Ampicillin	106	46.29	59	25.76	1.8 : 1.0
Neomycin	100	43.67	62	27.07	1.61 : 1.0
Penicillin	66	28.82	91	39.74	1.00 : 1.38
Polymyxin	98	42.79	30	13.10	3.27 : 1.0

Table 3: Treatment of buffalo-cows in farm and Village with different doses of lugol's iodine solution.

Animal groups	Total No.of treated	Amount of lugol's used (ml)	Most pregnant	C.R.
Governmental farm group	19	according to size of uterus 50-200ml	11	57.9
Villages group	109	50 ml	58	53.21

Table 4: The conception rate of repeat breeder buffalo cows of the treatment with different medicament as related to age.

Age group	3-5 y				5-7 y				7-9 y				more than 9 y.				Total				
	No. of anim.	No. of non preg.	No. of preg.	C.R.	No. of anim.	No. of non preg.	No. of preg.	C.R.	No. of anim.	No. of non preg.	No. of preg.	C.R.	No. of anim.	No. of non preg.	No. of preg.	C.R.	No. of anim.	No. of non preg.	No. of preg.	C.R.	No. of service/ concept
PNF	9	2	7	77.77	2	-	2	100	1	-	1	100	-	-	-	-	12	2	10	23.33	1.55
Garamycin	5	1	4	80.00	6	2	4	66.67	1	-	1	100	-	-	-	-	12	3	9	75.00	2.00
Lofagen	9	3	6	77.77	2	-	2	100	1	1	-	-	-	-	-	-	12	4	8	66.67	2.00
U.T. Forte	3	2	1	33.33	7	3	4	57.14	1	-	1	100	1	-	1	100	12	5	7	58.33	1.9
Chloramphenicol	8	3	5	62.5	3	1	2	66.67	1	1	-	-	-	-	-	-	12	-	7	58.33	1.9
Colimycin	4	1	3	75.0	7	3	4	57.14	1	1	-	-	-	-	-	-	12	5	7	58.33	1.9
Lugol's solution	31	14	17	54.84	53	19	34	64.15	25	15	10	40.00	19	11	8	42.11	128	59	69	53.9	2.2
Total	69	26	43	62.11	80	28	52	65.00	31	18	13	41.9	20	11	9	45	200	79	121	60.5	