

Isolation, identification and antibiotic sensitivity pattern of the uterine secretions in cows with metritis.

M.V. INGAWALE¹, R.L. DHOBLE^{2†} AND A.G. SAWALE³

Department of Gynaecology and Obstetrics, College of Veterinary And Animal Sciences, M.A.F.S.U., Parbhani- 431 402

Received: January 1, 2002

Accepted: September 7, 2002

ABSTRACT

Microbial agents were isolated from forty eight cases of metritis and recorded their antibiotic sensitivity pattern. *Cornybacterium* species were the most prevalent followed by *E. coli* and then *Pseudomonas*. Maximum percent of uterine isolates were sensitive to Ciprofloxacin, Enrofloxacin and Gentamycin and were resistant to Ampicillin and Sulphamethaxazole.

Key Words: Metritis, Antibiotic sensitivity, Cows.

Uterine infections contribute major cause of economic losses to cattle industry and occur mostly in cows during first few weeks post partum. In early post partum period, there is increased pituitary sensitivity to GnRH and continue until the first post partum ovulation. During this period the infection with pathogenic bacteria are reduced or eliminated in normal cows. Uterine infection that persist after this period is often referred as metritis and the incidence of post partum metritis increases due to unsanitary conditions during parturition. Uterine bacterial ecology and endocrine status during post partum period affects this condition. This leads to decreased reproductive efficiency, which increases days open, services per conception and reduced milk production and losses on treatment. Drug sensitivity of uterine isolates has become very important for effective therapy of uterine infection and to limit the development of drug resistant strains (Gupta and Deopurkar 1993). So an investigation was carried out to isolate the common microbial agents associated with metritis and to study their antibiogram pattern.

The present study was undertaken at Red Khandhari Cattle farm, College of Veterinary and Animal sciences, M.A.F.S.U. Parbhani. Forty-eight cows affected with postpartum metritis were selected for this experiment.

Metritis cases were diagnosed on the basis of history and gynaecological examination. The uterine secretion was collected from each animal

under sterile condition by using swab. Primary and sub culturing of bacterial isolates was done employing routine methods. Most predominant occurring isolates from each sample were identified as per standard procedures based on morphology and colony characters and staining reaction (Cowan, 1974).

Antibiotic sensitivity test was conducted by using various antibiotic biodisc.

RESULTS AND DISCUSSION

Bacterial isolates were identified from the forty eight metritis cows during early post partum period. Predominant bacterial isolates were *Cornybacterium* (62.50%), *E. coli* (52.08%), *Pseudomonas* (20.83%), *Staphalococcus* (16.66) (Table 1).

Table 1: Bacterial isolates from the uterine Secretion of metritis cases.

S. N.	Name of Organism isolated	No. of isolates from 48 samples	% of isolates
1	<i>Cornybacterium pyogens</i>	30	62.50
2	<i>E coli</i>	25	52.08
3	<i>Pseudomonas aeruginosa</i>	10	20.83
4	<i>Staphylococcus aures</i>	08	16.66
5	Unidentified gram +rods	03	6.25
6	<i>Klebsiella aerogenes</i>	02	4.16
7	<i>Streptococcus pyogens</i>	1	2.08

The results were comparable with Jacob (1991) and David and Bonnier (1987). Antibiogram revealed that maximum number of isolates were

¹JRF, ²Professor & Head, ³M.V.Sc Scholar

[†]Corresponding author

sensitive to Ciprofloxacin (83.33%), followed by Enrofloxacin (79.16%), then Gentamycin (77.08) and Chlorempenicol (62.5%). On the other hand maximum resistance was to Ampicillin and Sulphamethaxazole (Table 2). The result of this study are in close agreement with Srinivasrao, *et al.* (2001).

Table 2: Drug resistance pattern of microflora isolated from uterine discharge.

S. N.	Name of antibiotics tested	No. of Samples	No. of samples Sensitive	Percent
1	Ciprofloxacin	48	40	83.33
2	Enrofloxacin	48	38	79.16
3	Gentamycin	48	37	77.08
4	Chlorempenicol	48	30	62.50
5	Terraymcin	48	13	27.08
6	Ampicillin	48	12	25.00
7	Sulphamethaxzole	48	08	16.66

Bretzlaff *et al.* (1982) and Sinha *et al.* (1977) have reported highly varying antibiotic pattern to uterine isolates. These differences might be an account of indiscriminate use of antibiotics as well as resistance of organism involved. Hence on present investigation it can be concluded that *Cornybacterium* species of bacteria was most prevalent in metritis cases and Ciproloxacin showed maximum antibiotic sensitivity and maximum resistance was to Ampicillin and Sulphamethaxzole.

ACKNOWLEDGMENT

The author is thankful to Associate Dean, College of Vety. Sciences, MAFSU, Parbhani and HOD of Microbiology for providing necessary facilities to conduct this study.

REFERENCES

- Bretzlaff K.N., Whitmore, H.C., Saphr. S.C. and Ott R.C. (1982). Incidence of treatmet of postpartum productive problems in dairy herds. *Theriogenology* 17: 507 - 535.
- Cowan, S.T. (1974). *Manual for the identification of medical bacterial*. University printing house, Cambridge, Great Britain, 2nd Edition.
- David, C. and Bonnier, M. (1987). Bovine Chronic endometritis bacteriological findings between 1973 and 1985 in 770 samples from 440 birds. *Recveill demedicine vetrorniarie* 163 (2): 217 cited in *Veterinary Bulletin* 57: No. 5969.
- Gupta, A.G. and Deopurkar, R.L. (1993). Microbial study of gynaecological infection in cattle. *Indian J. Anim. Reprod.* 14(2):118-119.
- Jacob, J.C. (1993). Prostaglandin therapy for postpartum clinical end metrics M.V.Sc. thesis, Kerala Agricultural University.
- Sinha, A.K., Ameja, D.V. and Singh B. K. (1977). Antibiotic Sensitivity test and treatment of endometritis in cow. *Indian Vet. J.* 54: 528-532.
- Srinivasa Rao, Y., Venugopal Naidu, K., Ravikumar, P. and Venkata Reddy, T. (2001). Microbial flora and antibiogram pattern of the uterine isolates from cross bred cows with endometritis. *Indian J. Anim. Reprod.* 22: 54-56.