Bacteriolgical And Histopathological Study In Repeat Breeding Cows

Ali. K. AL-SODANY

Education College / Misan

Basrah University

Summary: Biopsy tissues of uterine endometrium and uterine samples were taken from 20 reapet breeding cows and examined histologicaly and bacteriologicaly Of the 20 cows 2 (10%) showed acute endometritis 12 cows. 1609 showed subacute endometritis while 6 cows (30%) showed chronic edometritis. Acute endometritis was characterized by congestion of blood vessels. high infiltration of lymphocytes arround uterine glands.in subacute endometritis the changes included moderate infiltration of neutrophils and lymphocytes in the lamina propria, in addition to the above findings in chronic endometritis there was dens infiltration of lymphocytes and plasma cells in the stratum compactum fibroblastic and early proliferation arrounduterine glands.Uterine mucus was also collected from reapet breeding cows and the organisms isolated were correlated with the type of the endometritis. In conclusiong acute and subacute endometritis were associated with staphylococcus ssp. streptococcus in addition corynebacterium tound only in acute endometritis.In chronic endometritis was associated with Bacillus and E.coli. All the organisms were resistance to impciline penciline and streptomycine.

Introduction:

Repeat breeder can being amajor factor involved in infertility. Repeat breeder is generally defined as any cow that has not concieved after three or more services associated with true esrus (1). In herds of normal fertility conception rates are commonly 50-55%, about 2-9% of the cows are expected to be repeat breeders (2).In general, if more than 15%of the cows require more than three services repeat breeding should be considered asignificant problem and need further investigation. Repeat breeding in animals has great economic importance which cause increased calving intervals, less number of offspring, decreased milk production, wastage of time and money on treatment and culling of useful breeding animals. Among various causes of repeat breeding, bacterial infections has prime importance Specific and non-specific infectious agents during pre and postpartum periods frequently invaded the uterus and produces metritis and endometritis leading to repeat breeding (3). The isolation of the micro-organism with histopathological studies of uterine endometrium by biopsy are known to be importance in the diagnosis prognosis and treatment of repeat breeding cows (4). Many times the repeat breeder is negative on culture subclinical endometritis can be postively diagnosed by microscopic examination of uterine biopsy (5). Such vital studies have scarcely been conducted in Iraq, therefor the present project was undertaken to find out the urterine bacterial organism and their sensitivity for drugs associated with different types of histopathological changes in repeat breeding cows.

Material And Method:

Twenty repeat breeding cows were selected from the cows brought for veterinary clinic in Amarah city. breeding history was recorded which included last date services,previousnumber of services provided and number of previous arturitions.

For bacteriological study uterine mucus from all the cows were collected by passing asterlized plastic rod through the cervix. To the outer end of the rod, asyringe with ashort rubber tube was connected for suctioning the mucus, then both ends of the rods were heremtically sealed. The rods were then brought to the laboratory for bacterial cultural and sensitivity test. Each rod was broken and the mucus was cultured in nutrient broth at 37c for 24 hours. The broth bcultured on plates of nutrient, blood, MacConkeys was agar and staph-110 medium. Bacterial growth was recultured on nutrient agar plates to obtain pure culture (6). The cultural

morphological and sensitivity tests were applied to identify and characterize the type of organisms and their sensitivity to impciline, penciline, gentamycine chlorimphenicol,seprofloxacine, doxycycline tetracycline, trimethpream, streptomycine Biopsy tissues of uterine endometrium were obtained from all the cases under study. The tissues were preserved in formaline solution(10%), for 48 hours and dehydrated in asending grades of ethylalcohol then cleared in xylene and stained with H. andE. Stian(7) and examined under microscope for histopathological studies.

Results:

In this study isolation and identification of organisms from mucus samplesof 20 repeat breeding cows showed bacterial isolates and type of endometritis (Table 1). Based on degree of reaction, the histopathological findings of uterine tissues obtained by biopsy revealed subacute endometritis in 12(60%), chronic endometritis in 6 (30%) and acute endometritis in 2 (10%) (Fig. 1). In subacute endometritis the changes included moderate infiltration of neutrophils and Lymphocytes in the lamina propria and some times congestion of blood vessels (Fig.3) In chronic endometritis, in addition to the above findings, there was dense infiltration of lymphocytes and plasma cells in stratum compactum and early fibroblastic proliferation around someendometrial glands. There was also found periglandular and perivasicular leukocytic infiltration.Endometrial glands were larger and fewer than in the other types of endometritis (Fig. 2).In acute endometritisinfilamation was limitted to endometrium, thicknees in endometrium due to odema, congestion blood vessels, high infiltration of lymphocytes arround utrine glands and sometimes causing damage to the uterine glands(Fig.4). The predominant organisms involved in subacute endometritis were streptococcus staphylococcus spp., and Bassilus, in chronic endometritis these were streptococcus, staphylococcus spp.and Escherichia coli, while in acute corynebacterium was isolated with Bacillus in one case of acute endometritis. All the organisms were resistance to ampicilline.penecilline and streptomycine(Table 2).

Figure-1- The histopathological findings of uterine biopsy

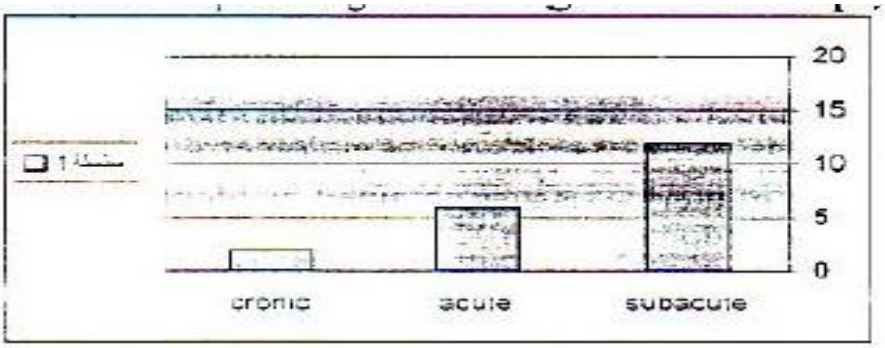

Table 1: correlation between bacterial isolate with type of endometritis.

Bacteria isolated	Type of endometritis		
	Acute	Subacute	Chronic
Streptococcus	-	+	+
Staphylococcus spp.	-	+	+
Bacillus	+	+	-
Escherichia coli	-	-	+
corynebacterium	+	-	-

Table 2:sensitivity degree of bacteria to antibiotic.

Degree of sensitivity	antibiotics		
sensitive	Gentamycine	chlorimpheniol	seprofloxacine
moderate	Doxycycline	tetracycline	Trimethpream
Resistance	ampiciline	penecilline	Streptomycine

Figure -2- chronic endometritis: infiltration of lymphocytes and plasma cells in stratum compactum

Figure -3- subacute endometritis: moderate infiltration of neutrophils and Lymphocytes in the lamina propria

Figure -4- acute endometritis: congestion blood vessels, high infiltration of lymphocytes around uterine gland

Discussion:

The type of bacterial isolates in the present study coincided with the findings of (8). They also found streptococcus, staphylococcus ssp., E.coli and corynebacterium in addition proteus and pseudomonas which not recovered in present study. (9)in addition reported klebsiella and pseudomonas. Furthemore (10), reported yeast and molds. The organisms like klebsiella and pseudomonas were not recovered in presentstudy, either due to small number of cases recorded in or the animales included in the present study were repeat breeder with minor pus flakes in their uterine discharge. The efforts were not made to isolates yeast and moulds.

(11). among 50 repeat breeder cows have detected acute,subacute and chronic endomtritis in 26,50 and 24 percent respectively. In other study (12), has reported acute in 9, subacute in 4 and chronic in 21 cows. The present study conducted, favors the findings of (11)as high incidence of subacute endometritis Acute endometritis was detected in 10%, this may be due to that acute endometritis can easly clinicaly diagnosised and treated.as well as it not cause high percentage of repeat breeding causes. The histological changes recorded in chronic endomtritis were similer to those reported by (13). In subacute endometritis, the results of histological changesagree with the studies (14). In subacute and acute endometritis staphylococcus and streptococcus ssp. were the organisms recovered with high incidence, while the corynebacterium was isolated only from acute endometritis. In chronic endometritis 10 cows were positive on culture and involved E.coli and Bacillus, the

other 2 cows were egative on cultures and could not be diagnosed only by the histologicalexamination and these results were in line with the study of (15). The resistance of the organisms to the ampciline, penciline and streptomycine may be due to the more uses of these drugs in treatment The modrate and sensitivity of the other drugs may explian the specifity of these drugs to these organisms or may be less uses in treatment.

References:

1-ustafsson.h.;larson, K.andustavsson, 1.(1985). Karyotype and morphological and histological alterations of genital tracts of repeat reeder heifers with known breeding history.acata.vet.scand.26:1-9

2-Bage, R.:Larsson, B.; Gustafsson, 11. and Rodrighes.11.(2000). Growth pattern and selection of the pre-ovulatory follicle in the repeat breeding heifers .rep.fert.20.22.

3-Helmet,K. Gustafsson, U., Magnos son, U.and Kinhal, H. (1999). Showcase

bacteriology, histology, resumption of ovarian activity and granulocyte function of the postpartum cow in miliking frequencies.Acta.vet.scand., 40.287-297.

4- Baishya.S.K.:DAS.K.K.; Rahman,Hand Borgohain.13.N.(1998).

Antibiogram of bacteria isolated from uterine discharge of repeat breeding cattle.Ind.J.Comp.Mie.Immu.Infee. This. 19.2:130-1

5- Kask, K.; kindhal, II.and Gustafsson, H. (1998).Bacteriolo gical and histological investigation of the postpartum bovineuterus in two estonian dairy herds. Acta. Vet. Scand.39(4):423-432.

6-Vacca. 1.(19985). Laboratory manual of histochemistry.(1ST ed.) Ravan pres.New York, U.S.A.118-121.

7-Moon, L.G. (1968). Manual of histological staining methods or armed forces insituteof pathology (3ed ed.)McGrawlfill Book Company. New York,USA -8-
8-Osman.AM.; El-nagar.M.A.El-timway A.M.;and Serur.B.11.(1983).