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Short Communication

BACTERIA FLORA OF THE ANTERIOR GENITALIA OF THE SAHELIAN DOE IN MAIDUGURI-BORNO STATE, NIGERIA

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INTRODUCTION

The genital tract of animals especially the posterior part is known to harbour non-specific bacteria that are sometimes called the "normal flora". Although the type of bacteria present and the role they play is not well understood, under stressful conditions they may cause disease (Hirsh, 1990). A variety of bacteria have been isolated from the genitalia of the doe and these include Staphylococci, Streptococci, Actinomyces, Pseudomonas, E. coli, Mycoplasma and Brucella species (Amin, 1988; Fasanya et al.,1987; Ababneh and Degefa,2006; Safiriyu et al.,2006). These organisms have been associated with disease conditions of the genitalia of animals. Adams, 1975 reported that isolation of pathogenic Staphylococci under normal and disease conditions of the genital tract revealed that they may be natural inhabitants of these organs but under conditions of stress such as following lambing, abortions etc they may cause metritis and infertility. Isolation of potentially pathogenic organisms from the normal genitalia of live and dead ewes has been reported previously (Hopwood, 1956; Amin 1988). Most of the reported cases were made from apparently healthy animals and in the absence of experimental infection; the true role of many of the isolates in reproductive disease has remained in doubt. Thus, this study was carried out to determine the 'normal' aerobic bacterial flora of the genitalia of apparently healthy sahelian does during different phases of the reproductive cycle.

KEYWORDS: Anterior genitalia, Bacteria, Sahelian doe, Reproductive phases.

MATERIALS AND METHOD

Study area

This study was carried out in Maiduguri metropolis. Maiduguri is the capital of Borno State. Borno State lies between latitude 11° 32' North and 11° 40' North and longitude 13° 20' East and 13° 25' East; and located between the Sudan savannah and Sahel savannah vegetation zones (Udoh, 1981).

Sample collection

Samples were taken from a total of 103 does in various locations in Maiduguri metropolis. The samples were taken from 15 does on heat, 23 pregnant does in the last month of pregnancy, 50 samples were from does during pueperium between 1-5 weeks after parturition and 15 samples were from immature non-cycling female goats. These reproductive stages were identified by history of kidding, palpation of abdomen, anatomical changes and signs of standing heat. Animals sampled were restrained and the vulval lips were disinfected using a mild disinfectant (Savlon ®). The vulval lips were parted and a sterile guarded Swab (Medical wire and equip Co. Corsham England) was pushed into the vagina and rotated. The swab was withdrawn and placed in nutrient broth and transported to the laboratory.

Experimental Procedure

Swabs were streaked on 5% sheep blood agar and MacConkey agar. These plates were incubated at 37°C for 24-48 hours. In cases were more than one type of colony occurs, they were further subcultured to obtain pure cultures. Further tests employed for the identification of the colonies were gram stain, catalase, coagulase and biochemical tests based on standard procedures (Cowan and Steel, 1993 and Carter and Chengappa, 1991).

RESULT AND DISCUSSION

A total of 167 bacterial isolates belonging to six genera were isolated from the 103 does sampled. The bacteria include: Bacillus species, Staphylococcus species, Proteus species, Corynebacterium species, Streptococcus species and E. coli. These bacteria were isolated from does on the various reproductive stages examined (Table 1). Twenty seven Swab samples yielded pure cultures of bacteria. These pure cultures were obtained in all the reproductive stages except for the immature non-cycling female goats.

Of the 103 does sampled, Bacillus species was the predominant bacteria accounting for

TABLE 1: BACTERIA ISOLATED FROM THE ANTERIOR VAGINA OF APPARENTLY HEALTHY SAHELIAN DOES IN THEIR DIFFERENT REPRODUCTIVE CYCLE

BACTERIA	HEAT (n=15)	Pregnant (n=23)	1st Week post partum (n=15)	2nd Week post partum (n=15)	4-5th Week post partum (n=20)	Immature non-cycling (n=15)	Total (n=103)
1) Bacillus species	8	12	8	4	13	7	52
2) E coli	4	3	7	2	5	8	29
3) Proteus Species	2	-	-	-	2	3	7
4) α-hemolytic Streptococci	4	2	1	1	2	-	10
5) Staphylococcus aureus	3	2	1	3	1	1	11
6) Coagulase negative Staphylococci	8	12	6	10	6	5	47
7) Actinomyces pyogenes	-	7	1	1	-	-	9
8) Corynebacterium bovis	-	2	-	-	-	-	2
Total:	29	40	24	21	29	24	167

Bacillus species, coagulase negative Staphylococci and E. coli seem to be found commonly among the sahelian does and could therefore be considered as part of the normal aerobic flora of the anterior vagina of the sahelian does. This result indicates that these organisms are the common resident of the genital tract of the sahelian does and supports previous studies by Moorty and Singh (1982), Amin (1988), Fasanya et al., (1987), Amin et al., (1996), Ababneh and Degefa (2006) and safiriyu et at.,(2006). Bacteria were isolated from the anterior vagina of the immature non-cycling female goats despite their sexual inactivity; this could further prove that the vagina has a resident bacterial flora (Amin et al., 1996). Few enterobacteriaceae were isolated inspite of the anatomical location of the vulva to the anus. This is similar to what was obtained in the ewe and cow reported by Amin, (1988) and Amin et al. (1996). The fact that similar bacteria were isolated from the four categories suggests that these bacteria may constitute the normal genital flora of the doe.

Species of bacteria recognized as pathogens are present in the genitalia of the does. The mere presence of these bacteria in the genitalia does not necessarily mean that an active infection exists. The bacteria may be present as saprophytes or "opportunists" which under conditions of stress may result in disease. The role played by these "non-specific" bacteria is not known but may result in disease under unfavourable conditions of stress (Hirsh, 1990).

The bacteria isolated may not be significant pathogens and may not have any harmful effect on the reproductive life of the does. Infact, they may be protective (Hirsh, 1990).The bacteria isolated in this study may constitute the 'normal' genital flora of the sahelian doe. These bacteria could be studied further to establish their status as possible pathogens and to observe if they have any effect on fertility of the does.

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