

FREQUENCY OF MULTIDRUG, EXTENSIVELY DRUG AND PANDRUG-RESISTANT BACTERIA ISOLATED FROM EXTERNAL OTITIS AND DERMATITIS IN DOGS

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Objectives

To report the frequency of multidrug, extensively and pandrug-resistant bacteria isolated from external otitis and dermatitis in dogs.

Materials and methods

SAMPLES

Five hundred eighty-seven antimicrobial susceptibility records were analyzed between 2014 and 2017 from pets that were examined at an University Veterinary Clinic in the northeast of Lima, Peru.

DATA ANALYSIS

Antimicrobial susceptibility was determined by disk-diffusion method according to the CLSI breakpoints. Multidrug-resistant (MDR), extensively drug-resistant (XDR) and pandrug-resistant (PDR) were determined as resistant to at least one agent in three or more, at least one in all, and to all antimicrobial categories, respectively.

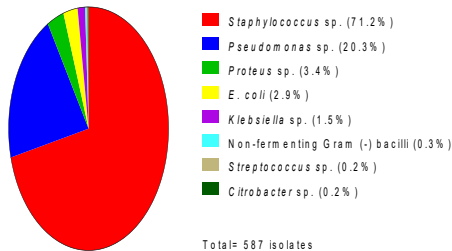


Figure 1. Frequency of isolates from dogs with external otitis and dermatitis

Results

Gram-positive strains were identified in 71.4%, *Pseudomonas* spp. in 20.3% and Enterobacteriaceae in 8% from 587 isolates (Figure 1). The 22.7% and 2.4% of *Staphylococcus* spp. were MDR and XDR, respectively. The 2.13% (1/47) strain isolated from dermatitis was an XDR *Proteus* spp. and the 1.6% of *Pseudomonas* spp. isolated from otitis was MDR (Table 1).

Table 1. Frequency of MDR, XDR and PDR isolates

Bacteria	MDR	XDR	PDR
<i>Staphylococcus</i> spp. (n=418)	57.9% (242/418) ^a	2.39% (10/418) ^b	-
Enterobacteriaceae (n=47)	21.28% (10/47) ^c	2.13% (1/47) ^d	-
<i>Pseudomonas</i> spp. and non-fermenting gram-negative bacilli. (n=121)	1.65% (2/121) ^e	-	-

^a Resistant to more than three categories of sulfamides, fluoroquinolones, aminoglycosides, tetracyclines, lincosamides. ^b Resistant to five categories of sulfamides, fluoroquinolones, aminoglycosides, tetracyclines, lincosamides. ^c Resistant from four to seven categories of folate pathway inhibitors, fluoroquinolones, penicillin with inhibitors of beta-lactamase, first and third generation cephalosporins, carbapenems, aminoglycosides, tetracyclines. ^d Resistant to at least one agent of eight categories of folate pathway inhibitors, fluoroquinolones, penicillin with inhibitors of beta-lactamase, first and third generation cephalosporins, carbapenems, aminoglycosides, tetracyclines. ^e Resistant to three categories of fluoroquinolones, cephalosporins, and aminoglycosides (Magiorakos et al., 2011).

Conclusions

Most *Staphylococcus* strains and an important group of Gram-negative isolates were predominately MDR. Bacteria carrying antimicrobial resistance to more than one category can limit the antibiotic therapy choices in small animals.