

Antibiotic resistance profiles of *Staphylococcus pseudintermedius* isolated from dogs and cats

ABSTRACT

Aims: Antibiotic resistance in *Staphylococcus pseudintermedius* is increasing gradually towards those antibiotics that are frequently used leading to limited therapeutic options due to multidrug resistance. The objectives of the study were to investigate the antibiotic resistance profiles of *S. pseudintermedius* isolates from pet and stray dogs and cats in Selangor, Malaysia and to detect the resistance genes (*mecA* and *BlaZ*) within the isolates.

Methodology and results: A total of 200 stray and pet dogs and cats were sampled. The samples were cultured onto Mannitol Salt agar and all the presumptive colonies were subcultured, then identified using biochemical tests and confirmed by PCR assay targeting the *nuc* gene. The isolates were subjected to antibiotic susceptibility test against 12 antibiotics. Twenty three isolates (11.5%) were positive to *S. pseudintermedius* (stray cats, 11/50; stray dogs, 9/50; pet dogs, 3/50 and pet cats, 0/50). One hundred percent (100%) of the *S. pseudintermedius* isolates were found to be resistant to penicillin, erythromycin and tetracycline while they showed 100% susceptible to oxacillin, amoxicillin-clavulanic acid, gentamicin, chloramphenicol, vancomycin, ciprofloxacin, enrofloxacin, cephalexin and rifampicin. The *blaZ* gene which codes for β -lactamases production was found in all of the isolates that were resistant to penicillin but not to methicillin.

Conclusion, significance and impact of study: A high number of *S. pseudintermedius* from dogs and cats developed antibiotic resistance which is a public health concern.

Keyword: Antibiotic resistance; *BlaZ*; *mecA*; Polymerase chain reaction; *Staphylococcus pseudintermedius*