Trends In Antimicrobial Resistance For Pseudomonas Isolates From Dogs

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Pseudomonas aeruginosa and *Pseudomonas fluorescens* are associated with many infections, and are intrinsically resistant to many antibiotics. Among effective drugs against these bacteria, only fluoroquinolones can be administered orally, are used extensively, and this selects for resistance.[1,2]

We hypothesised that canine *Pseudomonas* isolates exhibited significantly higher incidences of resistance against fluoroquinolones compared to other anti-*Pseudomonas* antibiotics. A systematic review and meta-analyses were done to determine incidences and distribution patterns of antimicrobial resistance in *Pseudomonas* isolates from canine infections. Extracted data were stratified by infection, year of isolation, geographical location and tested antibiotics. Statistical evaluations were done using Chi-square tests and analysis of variance.

Data were extracted from 73 studies with antimicrobial susceptibility tests based on a total of 9911 isolates. In these isolates, 47.8% were cases of otitis while mixed, skin and systemic infections contributed 52.2%. Relative to carbapenems, tested isolates exhibited significantly higher incidences of resistance to fluroquinolones (OR = 7.1, 95% CI 6.35, 7.84; Figure 1). The highest incidence of resistance was against enrofloxacin with resistance in 53%, 49% and 29% of isolates from otitis, respiratory infections and ocular conditions respectively.

These data imply a higher selection pressure for resistance against fluoroquinolones; this may be exacerbated by the empirical use of antibiotics such as enrofloxacin, as exemplified by its use in some cases of otitis externa.[3] For clinical cases with suspected involvement of *Pseudomonas* spp., caution should be exercised in using fluoroquinolones empirically.

References

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Figure 1

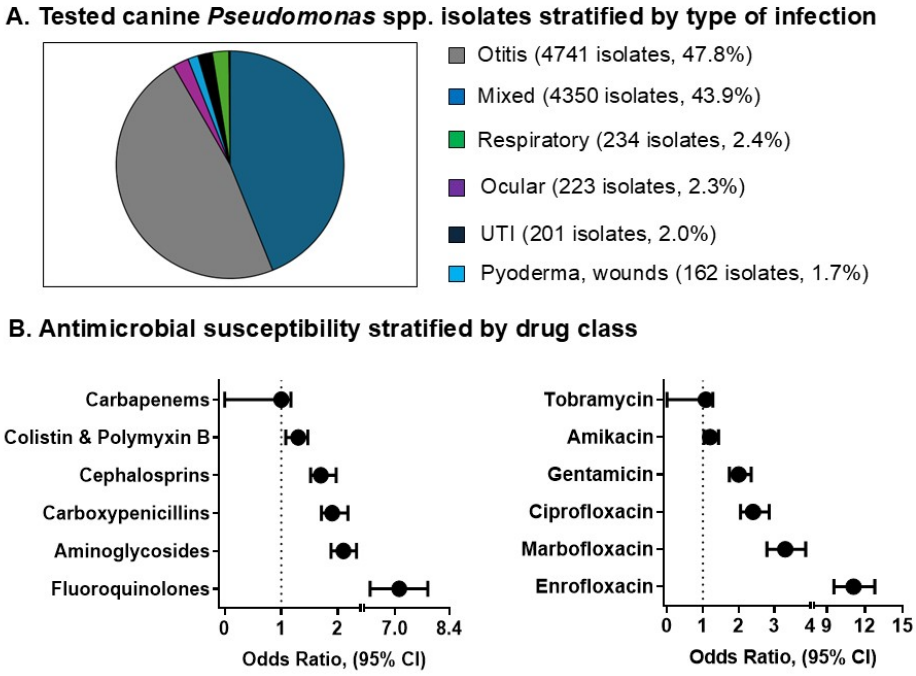

Figure 1