

P-74

Evaluation of the *in vivo* effects of Tris-EDTA and chlorhexidine digluconate 0.15% solution in chronic bacterial otitis externa: 11 cases

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Abstract

The objectives of this study were to evaluate *in vivo* tolerance, and antimicrobial and clinical activities of a topical otic preparation containing EDTA tromethamine (Tris) and chlorhexidine digluconate 0.15% solution (Otodine®) in dogs with chronic bacterial otitis externa. Eleven dogs were included. The affected ears were filled with the solution once daily during a 2-week period. Dogs were evaluated on days 0, 14 and 28. Three clinical parameters (exudate, erythema, pain) and three cytologic parameters (*Malassezia*, cocci, rods) were scored (0–4 scale) by otoscopic and cytological examinations of otic exudate. Bacterial cultures were performed at each time point. If there were bacteria on cytological examination on day 14, the dogs were treated with the original product, with the addition of enrofloxacin (5%) applied 10 min after the original product, for a further 2 weeks. All 11 cases yielded isolates of resistant gram-negative bacteria; gram-positive bacteria were also isolated from six of 11 dogs. On day 14, six of 11 dogs were negative on culture examination; on day 28, 10 of 11 were negative and only one case had a positive culture. On day 14, clinical and microbial scores (cytology) were reduced by 54.6 and 71.1%, respectively, and by 85.7 and 94% on day 28. All cases reported good tolerance of the treatment. The results show that this ear solution was helpful in the management of chronic bacterial otitis externa in dogs and was well tolerated. There seems to be a synergistic effect of the combination of Tris-EDTA/chlorhexidine digluconate 0.15% solution, and an antimicrobial agent (enrofloxacin) against resistant gram-positive and gram-negative bacteria.

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