

USE OF A NOVEL DISINFECTANT AGENT IN REPTILE RESPIRATORY DISEASE

J.R. Chitty BVetMed CertZooMed CBiol MIBiol MRCVS

Strathmore Veterinary Clinic, London Road, Andover, Hants SP10 2PH, UK

Abstract

Respiratory disease is common in reptiles and a range of micro-organisms are aetiologically implicated. F10 (Health & Hygiene (Pty) Ltd) is a broad-spectrum disinfectant that has proved of benefit as an aid in the management of upper and lower respiratory tract disease when administered as a localised therapy.

Introduction

Respiratory disease is commonly seen in reptiles.^{4,5,7,8} This may take the form of upper respiratory tract disease (URTD) or lower (LRTD). Both forms are seen commonly in chelonians while snakes are commonly seen with LRTD. The frequency with which these are seen may be principally related to the anatomy of reptilian respiratory system^{7,11} and poor husbandry practices. Infectious agents are also implicated, including nematode and pentastomid parasites. Bacteria, mycoplasmas, fungi and viruses may be involved as secondary or complicating factors although some may be primary pathogens in certain situations.⁹

However, considering the role of husbandry in these conditions they are probably best termed “viral-associated”,⁶ “Mycoplasma-associated”, etc. Investigation of these syndromes involves appropriate history-taking, clinical examination, diagnostic imaging and sample-taking with the aim of discovering and correcting underlying causes and treating the relevant associated infectious agents where appropriate.^{3,4,5,7,8}

However, many of the diagnostic tests and cultures may take a long time or it may not be possible to achieve definitive diagnosis (eg. lack of owner funds). There is therefore a role for “generalised” anti-microbial therapies as a first aid therapy or where diagnosis has not or cannot be achieved. It is also useful to give localised therapies by non-systemic routes. This may reduce undesirable side-effects as well as giving beneficial side-effects (eg. expectorant effects of nebulisation, mechanical removal of debris by nasal flush). F10 disinfectant (Health & Hygiene (Pty) Ltd(SA)) has been evaluated in this role.

F10 Super Concentrate Disinfectant

F10 Super Concentrate Disinfectant (“F10”) was originally developed for disinfection within pharmaceutical plants particularly aseptic fill areas (eg. intravenous drips). It is a complete spectrum virucidal, bactericidal, fungicidal and sporicidal aldehyde-free compound of six main active ingredients. The exact formula remains a commercial secret but does contain quaternary ammonium and biguanide compounds (5.8%), non-toxic ampholytic surfactants and sequestrants. Its use in a fogging system to prevent

and treat aspergillosis has been described in falcons,¹⁰ as well as in treating psittacine respiratory disease¹ and in chelonian URTD.²

Uses of F10

Nasal Flush: in cases of URTD in terrestrial chelonians F10 has been used at a concentration of 1:250 as a nasal flush. 0.1ml is used in each nostril daily. Environmental correction is used where indicated. Most cases resolve in a few days though some persist with a permanent clear discharge.

Nebulisation: F10 at a concentration of 1:250 is used once daily for 30-60 minutes in both snake and chelonian LRTD. In general it is used as an adjunct to systemic antimicrobials though some snakes have cured on nebulisation alone.

Intra-Pneumonic: In chelonian LRTD where there are focal pneumonic lesions, a hole is drilled in the carapace into the lesion. F10 (at 1:250 concentration) is given directly into the lesion (0.2ml once daily) and by daily nebulisation. Appropriate systemic anti-microbials are also given.

Conclusion

F10 is non-irritant and appears to improve clinical recovery when given as an adjunctive therapy in LRTD. As a broad-spectrum disinfectant with anti-viral properties it is a useful therapy before a definitive diagnosis is made. In chelonian URTD it is often the only drug therapy used. In many cases it appears effective and certainly bears comparison to therapy with intra-nasal antibiotics and/ or systemic antibiotics. F10 appears to be a useful therapy in many of these cases which appear to be linked to chelonian herpesvirus. In particular F10 appears to be safe for human operators. When used in nebulisation this is an important consideration.

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