



Incidence of corneal ulcer development in cats and dogs hospitalised in an intensive care unit

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BACKGROUND

In veterinary medicine the incidence of exposure keratopathy and corneal ulcer development during hospitalisation within an intensive care unit (ICU), or risk factors associated with this, is not currently known. The risk of developing exposure keratopathy, and subsequent corneal ulceration, is increased in people hospitalised within an intensive treatment unit¹. Risk factors for the development of corneal surface disease have been identified in people, and include increased length of hospitalisation, mechanical ventilation, lagophthalmos, and sedative medication.^{1,2,3,4}

OBJECTIVES

To describe the incidence of corneal ulceration, and the prevalence of risk factors for ulcer development, in cats and dogs hospitalised in the intensive care unit (ICU).



Figure 2: a brachycephalic dog on mechanical ventilation, demonstrating a patient with 'risk factors' for corneal ulcer development in the ICU.



Figure 1: a cat with a superficial corneal ulcer secondary to exposure within the ICU.

METHOD

Single-centre retrospective review of medical records (March 2019-September 2022) to identify cats and dogs that developed corneal ulceration during hospitalisation in the ICU. Cases were excluded if a corneal ulcer was present at admission to ICU.

RESULTS

Fifty-eight cases were identified (37 cats and 21 dogs). The overall incidence of the development of corneal ulceration was 1.9% (58 of 3102). Median time to the development of corneal ulcer(s) following admission to the ICU was 2 days (range, 1-10 days).

Known risk factors for the development of corneal ulceration, such as opioids (87.8%; n=51), sedative medication (44.8%; n=26), ketamine (22.4%; n=13), general anaesthesia (41.4%; n=24), altered mentation (43.1%; n=25), neurological deficits (25.9%; n=15), pre-existing ocular disease (17.2%; n=10), oxygen therapy (15.5%; n=9), brachycephalic conformation (12.1%; n=7), mechanical ventilation (8.6%; n=5) and cardiopulmonary arrest (3.4%; n=2) were present in this patient population.

CONCLUSIONS

This study highlights the incidence of corneal ulceration in a veterinary ICU. Risk factors associated with the development of corneal ulceration in human ICU patients were present, further evaluation for association is required. Prospective studies are needed to determine optimal ocular care protocols for veterinary ICU patients and to assess if standardised protocols reduce the incidence of corneal ulceration.

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