

Research title

Ocular surface diseases in dogs and cats: new insights in the pathogenesis and emerging therapeutics

Patologie della superficie oculare nel cane e nel gatto: approfondimento dei meccanismi patogenetici e tecniche terapeutiche emergenti

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State of the art and aims of the project

Ocular surface (OS) is a delicate structure whose proper functioning depends on different systems (cornea, conjunctiva, lacrimal glands, CALT..) all contributing to its physiological integrity. Throughout life, external and internal environments interact in OS homeostasis as well as in onset of diseases: aging, inflammation, UV-exposure and drugs may induce epigenetic modifications triggering susceptibility to diseases. For example, exponential increase of canine corneal squamous cell carcinoma cases was recently observed, paralleled by increment of keratoconjunctivitis sicca (KCS) cases treated with cyclosporine: the correlation among inflammation (KCS), drug effect and carcinoma is currently debated.

In recent years, innovative therapeutical options for OS disorders also emerged, e.g application of cryopreserved amniotic membrane graft in reconstructive OS-surgery.

In the present project histological and immunohistochemical features of poorly understood OS diseases will be investigated and these disorders will be approached through innovative surgical techniques. Specifically, canine KCS/CSCC and feline symblepharon/pseudopterygium/herpesviral infection will be studied.

Recent publications of the tutor in the field

1. Barzago MM, Kurosaki M, Fratelli M, Bolis M, Giudice C, Nordio L, Cerri E, Domenici L, Terao M, Garattini E. Generation of a new mouse model of glaucoma characterized by reduced expression of the AP-2 β and AP-2 δ proteins. Sci Rep. 2017 Sep 11;7(1):11140.

2. Andreani V, Guandalini A, D'Anna N, Giudice C, Corvi R, Di Girolamo N, Sapienza JS. The combined use of surgical debulking and diode laser photocoagulation for limbal melanoma treatment: a retrospective study of 21 dogs. Vet Ophthalmol. 2017 Mar;20(2):147-154.

3. Nordio L, Fattori S, Vascellari M, Giudice C. Evidence of Vasculogenic Mimicry in a Palpebral Melanocytoma in a Dog. J Comp Pathol. 2018 Jul; 162:43-46.

4. Barachetti L, Giudice C, Mortellaro CM. Amniotic membrane transplantation for the treatment of feline corneal sequestrum: pilot study. Vet Ophthalmol. 2010 Sep;13(5):326-30.

5. Nordio L, Fattori S, Giudice C. Fibrosarcoma of the eyelid in two sibling Czech wolfdogs. Open Vet J. 2017;7(2):95-99.