

A RETROSPECTIVE EVALUATION OF THE INCIDENCE OF HEREDITARY OCULAR DISORDERS IN LAGOTTO ROMAGNOLO DOG BREED IN ITALY



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PURPOSE

To describe the ophthalmological findings of Lagotto Romagnolo dog breed and to report the prevalence of ocular disorders that are known or presumed to be inherited (KPHED).

METHODS

Medical records of Lagotto Romagnolo dogs between 2012 and 2020 were included. Data about the ocular status were collected through ocular screening examinations (OSE) or clinical ophthalmic examinations (COE). The prevalence of each KPHED was expressed as a function of the total number of the KPHED (Fig.1).

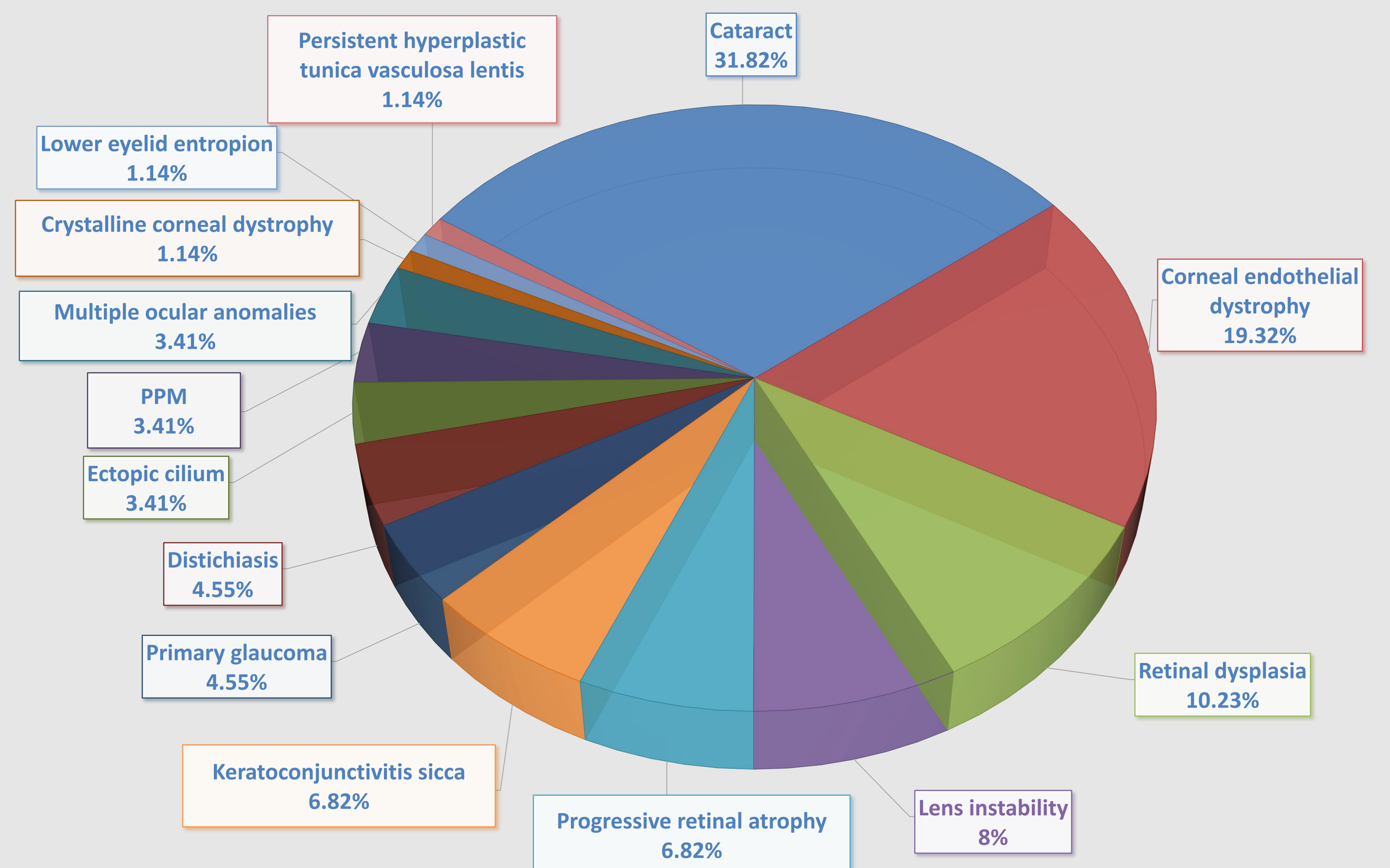


Figure 1. Total prevalence of KPHEDs. Each KPHED was expressed as a function of the total number of the KPHEDs

RESULTS

Two hundred and sixteen dogs were examined and included in this retrospective study (116 COE and 100 OSE). A total of 85 dogs (39.35%) were ophthalmologically healthy, ocular diseases presumably not related to genetics were found in 43 dogs (19.91%), and 88 dogs (40.74%) were affected by at least one KPHED. The most common KPHEDs diagnosed were cataract (28/88; 31.82%), corneal endothelial dystrophy (17/88; 19.32%), retinal dysplasia (9/88; 10.23%), lens instability (7/88; 7.95%), progressive retinal atrophy (6/88, 6.82%) and keratoconjunctivitis sicca (6/88, 6.82%) (Fig.2). Other KPHEDs were detected with a percentage inferior to 5%. The majority of dogs detected with a KPHED (77.27%, 68/88) was identified from COE group.



Figure 2. The most common KPHEDs in Lagotto Romagnolo. A. Cataract. B. Corneal endothelial dystrophy. C. Retinal dysplasia. D. Lens instability. E. Progressive retinal atrophy

DISCUSSION

Lagotto Romagnolo, also known as the Romagna Water Dog, is an ancient and historic Italian breed dating back to medieval times, being probably the founding breed from which all the water dogs descended. Interestingly, Lagotto Romagnolo dog has been especially selected to sniff out tubers, in fact, it is the only pure breed dog in the whole world recognized as a truffle searcher.¹

Non-ophthalmic genetic disorders have been previously described in Lagotto Romagnolo breed, including benign familial juvenile epilepsy,² neurodegenerative storage disease,³ osteogenesis imperfecta⁴ and cerebellar cortical abiotrophy.⁵ Inherited ocular diseases can cause serious ocular health issues and negatively alter breeding fitness of many purebred dogs. Unfortunately, little data have been published about KPHED in Lagotto Romagnolo.^{6,7}

Guandalini et al. reported the prevalence of PIED in 6 Italian purebred dogs with maximal and minimal incidence of 92.1% and 35.4% respectively.^{8,9} A total of 88 out of 216 Lagotto Romagnolo dogs (40.74%) were diagnosed with at least one KPHED. Results of the present and previous KPHED reports in Italy highlight the importance of a collective effort by breeders and scientific community to improve genetic screening and breeding programs in Italy.

CONCLUSION

This study suggests a relatively high prevalence of KPHED in the Lagotto Romagnolo breed. Many of these diseases lead to ocular pain and irreversible blindness. Consequently, the authors emphasize the importance of reaching an early diagnosis. Breeder's efforts should be directed at limiting such disorders, even if the late onset might hinder the reduction of KPHED's prevalence.

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