ANALYSIS OF SUDDEN ACQUIRED RETINAL DEGENERATION SYNDROME (SARDS): A DISEASE THAT CAUSES IRREVERSIBLE BLINDNESS IN DOGS

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INTRODUCTION

Sudden acquired retinal degeneration syndrome (SARDS) is one of the main causes of acute and irreversible blindness in dogs. A lot of theories have been hypothesized but etiopathogensis remains unknown. Moreover, a lot of medical treatments have been described but with a low percentage of success.

OBJECTIVES

- Analyze the immunologic mechanisms related to the disease.
- Comprehend the factors that limit the development of an effective treatment.
- Identify early biomarkers for the diagnosis of the disease.

RESULTS

- **Immunologic mechanisms related to the disease**

Dogs with SARDS exhibit systemic clinical signs compatible with hyperadrenocorticism. Lab tests reveal neutrophilia, elevated liver enzymes, thrombocytopenia, proteinuria, and low urine density. In addition, T lymphocytes were found in postmortem immunochemistry. A study found 90% had elevated adrenal sex hormones and/or cortisol levels. Retinal immunofluorescence showed significant IgG antibodies in the photoreceptor layer of SARDS-affected animals and OCT scans revealed a thinner retinal layer in these dogs.

- **Factors that limit the development of an effective treatment**

Multimodal therapy had a >5% of effectivness but monotherapy only had 3.2%. Most effective multimodal therapy was a combination of cyclosporine and human immunoglobulins. In addition, treatment with hormones (like thyroxine) were administered when SARDS was related to systemic clinical signs.

- **Early biomarkers for the diagnosis of the disease**

A study showed that some genetic expressions were statistically higher in Dachsunds affected by SARDS than the control group.

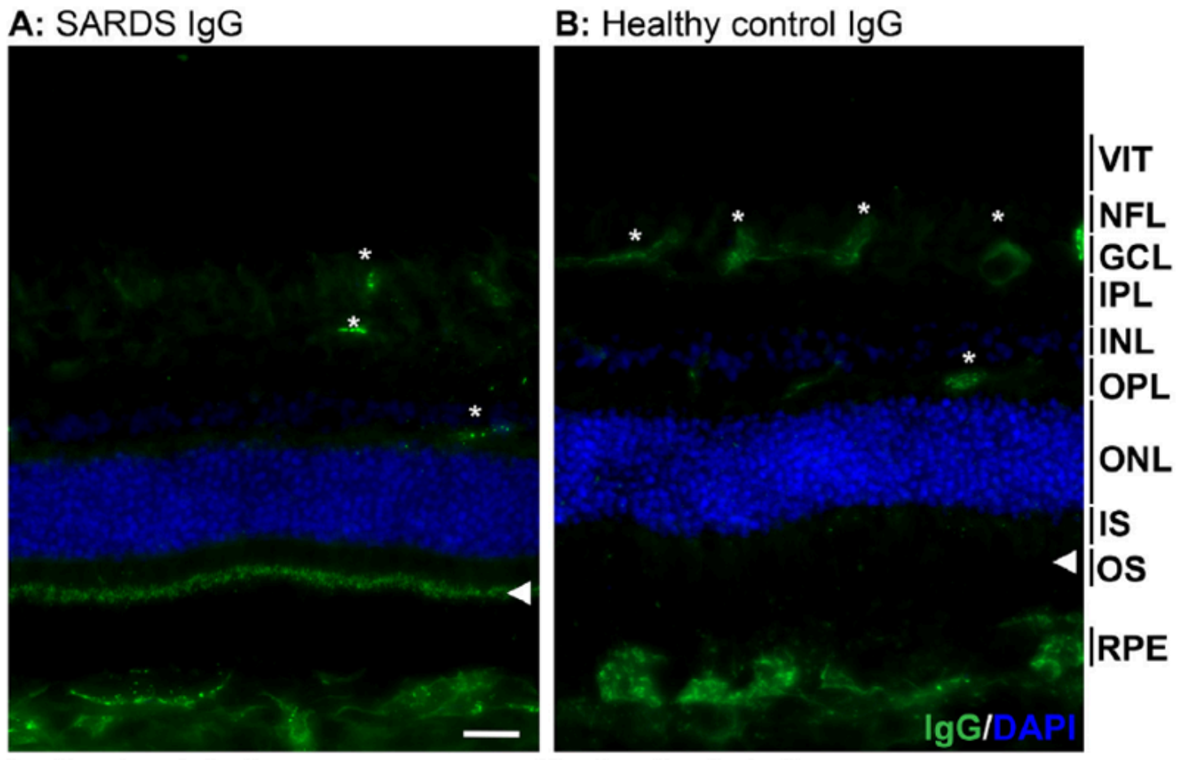

Figure 1. Indirect immunochemistry of a dog with SARDS compared with a healthy control dog (Mowat *et al*., 2020).

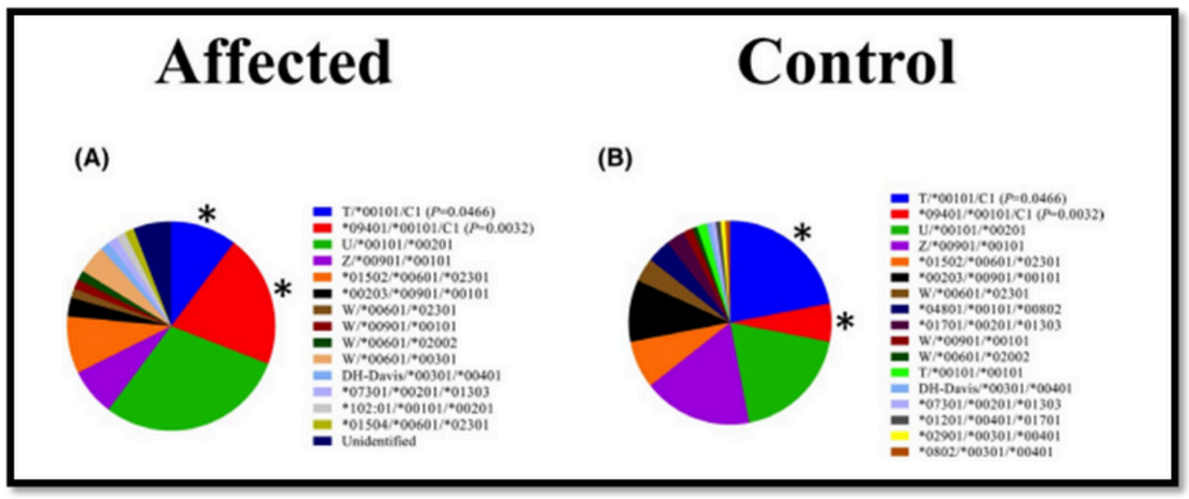

Figure 2.. Results of gene characterization between Dachsunds affected by SARDS and healthy Dachsunds (Stromberg *et al*., 2019).

CONCLUSIONS

- Presence of a systemic process preceding the loss of vision.
- No completely effective treatment has been found.
- The genetic expression of Dachshunds plays a role in the analysis of SARDS onset.

REFERENCES

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