GENETIC BACKGROUND IN CANINE ATOPIC DERMATITIS

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INTRODUCTION

Canine atopic dermatitis (CAD) is a multifactorial disease that depends on many aspects, including the genetic factor. Various breeds are at elevated risk of developing CAD and different genomic studies have suggested the existence of genes related to immune function and to the development of the skin barrier that could be involved in it's appearance. Unfortunately, genetic associations are still not well defined.

OBJECTIVES

Review of existing scientific studies on the role of genetics

Influence of heritability

Identification of genetic variants and associated genes

Identify the existing limitations in terms of research

GENOMIC STUDIES

- Microarray analysis
- Genome-wide linkage analysis
- Candidate genes
- Genome-wide association analysis

DISCUSSION

- High heritability and an important genetic component
- Specific genetic variations in certain breeds
- One of the most deregulated genes is the S100A8 calcium binding protein gene, part of the Epidermal Differentiation Complex (CDE) that also includes the filaggrin
- Genome-wide association studies are the most indicated and complete
- Studies are limited by the size of the pupulations and the environmental factor.
- Observations over longer time periods, targeting specific breeds and regions are required.
- Most studies are based on human atopic dermatitis. More studies of the genetic factor are needed in veterinary medicine.
- Understanding the genotype could improve treatment options and help predict the future onset of the disease, allowing management of different factors that may increase the risk of its development.

CONCLUSION

The genetic component of CAD can explain many of the variations observed in this disease

Understanding the genetic component could improve diagnosis, treatment and prediction.

More research is needed in the field of veterinary medicine.