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ABSTRACT

Canine hip dysplasia (CHD) is a highly prevalent disease. In many breeds in Europe prevalence in 1976 was as high as 35%. From 1976 until 1995, a steady decrease of the disorder was seen, but between 1995 and 1997 a slight increase of the prevalence was observed again. In the United States, the prevalence seems to keep on decreasing. The prevalence of CHD in Belgium during the ten last years shows no decline of CHD all over breeds and even an increase of dysplastic individuals in some breeds such as the German shepherd is seen. The prevalence of CHD in the medical imaging department is almost twice as high when compared to figures obtained by the official screening program. The results of this survey indicate CHD remains an important problem in the canine population and success of the eradication program is very low to non-existing.

SAMENVATTING

Heupdysplasie (HD) komt frequvent voor bij honden. In bepaalde Europese populaties was de prevalentie in 1976 35%. In de periode tussen 1976 en 1995 daalde de prevalentie van de aandoening zichtbaar. Tussen 1995 en 1997 stagneerde de daling en was er zelfs terug een kleine stijging te zien. Nochtans lijkt het er op dat in de USA de daling zich doorzet. In België is de laatste tien jaar geen daling te zien. Er is bij sommige rassen (o.a. Duitse herder) zelfs opnieuw een stijging merkbaar. In de kliniek van de medische beeldvorming worden er bijna twee maal zo veel dysplastische honden gevonden als in het officiële screening programma van de nationale commissie voor erfelijke skeletaandoeningen. Uit de resultaten van dit onderzoek blijkt duidelijk dat HD een fundamenteel probleem blijft in de Belgische hondenpopulatie en dat het eradicatieplan totaal geen effect heeft.

1. INTRODUCTION

Canine hip dysplasia (CHD) is an abnormal development of the hip joint (1). Laxity is increased, hips are partially or totally luxated, femoral head is abnormal and deformed and finally osteo-arthritic changes become visible. It is a multi-factorial disorder, meaning both genetic and environmental factors influencing the outcome of the disease (4).

According to Kapatkin et al. (2), CHD is a highly prevalent disease and is nowadays present in 19.3 % of the total canine population (5). Many authors agree that the prevalence of CHD is underestimated because many radiographs of dogs are not officially scored (5, 6, 7).

In many breeds in Europe, such as the German shepherd and the Rottweiller, prevalence in 1976 was as high as 35%. From 1976 until 1995, a steady decrease of the disorder was seen, but between 1995 and 1997 a slight increase of the prevalence was observed in the Rottweiller, Bernese mountain dog and Golden retriever (personnel communication, Fams Eukanuba). The records of the Orthopaedic Foundation for Animals (USA; 3) indicate that between 1980 and 2000, the prevalence of CHD decreased, the amount of excellent hips rose and the ratio of mild versus moderate dysplasia changed positively. The aim of this study was to estimate the evolution of CHD in Belgium during the last decade.
2. MATERIALS AND METHODS

Records (13006 dogs) of the National Institute of Inherited Skeletal Disorders (NCISD) and of the Medical Imaging Department; Ghent University (MI; 184 dogs) were used. The prevalence (%) all over and within breeds was estimated for every year of the last decade (1995 – August 2004; NCISD) and for the last three years (2002 – August 2004; MI), using an excel worksheet. The main difference between both data sets is that data of NCISD are more biased because radiographs are send by private practitioners, that do not send radiographs of obvious dysplastic dogs for official evaluation, while the radiographs made in our Department are all send in for official scoring, making them less biased. Finally, the amount of moderate hip dysplasia in affected dogs was estimated for different breeds.

3. RESULTS

Considering all breeds, no clear rise or fall in prevalence of CHD between 1995 and 2001 was seen, but between 2001 and August 2004, a slight increase of about 2 % CHD was visible as is clear from fig. 1.

![Graph showing prevalence of CHD over years](image1)

Fig. 1: The amount of sound hips all over breeds slightly decreases during the last three years. Rise of affected hips is almost 2 %

In the German shepherd, this increase is almost 6 % from 2000 on (fig. 2).

![Graph showing prevalence of CHD in German shepherd over years](image2)
Fig. 2: The evolution of the amount of sound hips in the German shepherd clearly decreases, especially during the last three years. Rise of affected hips is more than 6%.

In 2001, the amount of excellent hips decreased consistently in favour of nearly normal hips, as shown in fig. 3. For the German shepherd, this evolution already started in 1997.

![Graph showing the evolution of the amount of sound hips](image)

Fig. 3: The evolution of the different scores for hip quality during the ten final years all over breeds. The amount of perfect hips (A) declines and rates of transitional hips (B) increases consistently. The ratio of different types (C; D; E) of dysplastic dogs remains the same.

The ratio of moderate CHD (D) in German shepherd decreased during the last three years, but increased spectacular in de Golden retriever breed. The prevalence calculated using the data of the MI department shows a comparable evolution but at a 12 to 20% higher level.

4. DISCUSSION AND CONCLUSIONS

No comparable evolution as seen by the OFA (3) was found in Belgium. The slight increase seen in Europe (personnel communication, Iams Eukanuba) is confirmed and goes on beyond 1997. Although the prevalence of CHD is already high, it even seems to be underestimated and to be twice as high compared to the official screening results. Also the amount of excellent hips decreases consistently. It can therefore be concluded that CHD remains an important problem in Belgian breeding dogs and that the eradication program fails to lower the prevalence of this disorder. The eradication program should therefore be refined.

5. REFERENCES