



Report appointment cardiologist:

12/7/2012 12:15uur – 14:40uur

Stavelot, Belgium, with drs. Nicole van Israel, DVM, CESOpht, CertSAM, CertVC, MSc, Diplomate ECVIM-CA (Cardiology), European specialist™ in Veterinary Cardiology, MRCVS.

Present: Drs. Nicole van Israel (cardiologist), Cyrilla Pulmans (CGG member breed club / kennel Glaginye), Angelique Jongbloets (veterinarian), Bianca van der Post (kennel Dinky-Di-Dutch)

In response to the posts about various Kelpies with heart problems, there has a relevant research taken place in cooperation with the breed club about to the heart problem and the frequency in which it occurs, especially in a certain bloodline. Multiple Kelpies have been echography tested incl. color doppler screened through this research. Below is the result of the research discussed.

The dogs that gave rise to the research were Kalan Watta Dandy and his son Piet Kelpiebrink (deceased now), in a message which came via Facebook that they suffered from a heart defect, and in short time after that the death of 2 Kelpies from the same blood line. As a result, there are 29 Australian Kelpies (except 1 all partly in the same blood line) tested by echography incl. color doppler and we have submitted, in our opinion, the heart problems of the Australian Kelpie to drs. N. van Israel.

Bianca took all by her received heart results of echography incl. color doppler tested dogs and other heart results of Kelpies with her, and has submitted them to drs. N. van Israel. Of all these (29) through echography incl. color doppler tested dogs there is so far only 1 dog that has actually physical complaints by a heart defect.

The so far tested Kelpies exhibit a free image, or a minimal insufficiency which is due to a 'sport heart' (demonstrably by echography incl. color doppler), or the disorder Degenerative Mitral Valve Disease with / without endocardia's (nodules / intergrowth on the valves due to the degeneration).

Information about DMVD:

- 1 <http://www.acapulco-vet.be/publications/publications-par-sujet.htm?lng=nl>
- 2 <http://www.uu.nl/faculty/veterinarymedicine/NL/Actueel/media/2010/februari/Documents/201002%20In%20Praktijk2.pdf>
- 3 <http://www.kkush.be/Portals/kkush/documents/Externe%20studies/ERFELIJKE%20HARTAAN DOENINGEN%20BIJ%20DE%20HOND.pdf>
- 4 <http://www.whgdierenartsen.nl/Bibliotheek/tabid/69/ItemID/124/Default.aspx?Word=Hartklachten+-+behandelingsmogelijkheden+regulier+en+homeopathisch>
- 5 http://www.dierenkliniek-ridderkerk.nl/cms/dierenkliniek_ridderkerk/1/25/206/hartaandoeningen_en_echocardiografie.html#MITRALISENDOCARDIOSE



This defect is found in 70 – 80% of all older dogs (breed or none breed) and belongs to an old-age condition. Inquiry of several Australian Kelpie owners from various blood lines has shown that the old-age murmur (mitral valve insufficiency) indeed occurs regularly in older Kelpies.

In some dog breeds this defect comes at a very young age (before the age of 5 years) than it is a problem within the breed.

Littermates, and also the father of Ginny, Kalan Watta Dandy, that have died due to a heart defect are discussed. The father and one sister could be attributed to old age Degenerative Mitral Valve Disease. About the other littermate there is no data available.

Drs. N. van Israel reported us that given the aforementioned symptoms, from which both dogs were totally different, the sudden deaths of Dakota (Manual Included Dinky-Di-Dutch) and Ivar (Ivar Dinky-Di-Dutch) are certainly not the result of Degenerative Mitral Valve Disease, and self-contained. In addition, dogs that lead to Degenerative Mitral Valve Disease almost never suddenly drop dead. Degenerative Mitral Valve Disease is a disease of the wear of the heart, and there is a decent time in advance with accompanying noticeable symptoms such as fatigue, poor endurance, many sleep, coughing, chest tightness, falling down due to excitement, before the heart will eventually fail, and the dog will die.

A dog with this defect has just as much risk of a suddenly death as any other (healthy) dog.

Drs. N. van Israel reported us that in the breed Australian Kelpie there is a defect called PDAB (Persistent Ductus Arteriosus Botallis) known to the cardiology. This can be a cause of some early deaths within the Kelpies with noticeable symptoms. There is a heart murmur already present directly after birth and is then established by the litter checkup or at the first vaccination check. This is actually not a heart defect, but the problem of a blood vessel that is supposed to close after the birth, but this so does not (yet). This causes a portion of the blood not going to the lungs, causing insufficient lack of oxygen in the blood, and the heart has to work harder in order to get enough oxygen in the tissues. The heart will get exhausted with mortality result (defect is operable). By incorrect screening this is often diagnosed as cardiomyopathy or Degenerative Mitral Valve Disease.

Information PDAB:

- 1 <http://www.acapulco-vet.be/publications/publications-par-sujet.htm?lng=nl>
- 2 <http://www.kvgd-eersel.com/operaties-dierenkliniek-eersel/weke-delen-mainmenu-38/pdab-video.html>
- 3 <http://www.kvgd-eersel.com/operaties-dierenkliniek-eersel/weke-delen-mainmenu-38/pdab-hartoperatie.html>

A Kelpie bitch, Inoeh Kelpiebrink (Almdalens Majsan x Free Uluru) from another bloodline, which was diagnosed with Cardiomyopathy and deceased at the age of 4 probably had a PDAB (Persistent Ductus Arteriosus Botallis), so another problem.

In addition, the bitch Bluey Jillaroo Uluru was 12 years ago suspected of cardiomyopathy after being tested by echography (without color doppler), however this is not sure to say. The dog is still alive without any heart medication (13.5 yrs old now), so probably this dog has no heart defect.



In the meantime, we also got in contact with owners of Working Kelpies with various heart problems. The heart diseases are therefore not limited to the FCI Australian Kelpie, or to 1 certain blood line.

The seemingly minor heart problem within our breed, is according to drs. N. van Israel found within the normal range as in other breeds or none breed dog populations.

Degenerative Mitral Valve Disease is in addition Polygenetic (the genetic defect is on multiple spots in the DNA) which leads that makes screening through breeding policy not easy. So there is no test now or in the near future in order to determine whether a dog is affected or carrier. And the disorder is Multifactorial (multiple conditions; training, nutrition, parasitic infections, smoking in the vicinity of the dog, poor physical condition, circumstances in which the dog is kept (trip, moisture, hygiene)). At the moment a dog is genetically affected the multifactorial conditions will determine whether the dog actually develops the disease (expression of the disorder). This does not prevent that the dog under optimal conditions can still develop this disease. Not all factors that bring this condition to an expression are known yet.

So we must absolutely make no panic, but stay realistic. In any case, we now have a good idea what heart defects some Kelpies are suffering from, and this is thanks to all the people who have let their dogs recently tested (our thanks to you all!).

The advice of drs. N. van Israel is to definitely not by definition exclude bloodlines or dogs for breeding but breed in a wise manor.

For all breeding dogs it would be better that dogs would be used only if they are at least 5 years old and have no heart murmur (yet), to ensure that it remains an old age disease. Of course it's not realistic to wait until the age of 5 years, certainly not for bitches. (rule of the Dutch Kennelclub, bitches first litter must be born before their 6th year of life!)

Drs. N. van Israel her advice is to ensure that every Kelpie annually (or interim when visiting a veterinarian) is checked through by stethoscope by a very skilled veterinarian to listen for a heart murmur. Should your Kelpie suffer from Degenerative Mitral Valve Disease, then it is advisable to take this dog in consultation and follow ups by a cardiologist, to get the right medication in a timely manner, so the dog will live as long as possible.

Once there is a murmur heard, it would be good if the owner passes this info to the breeder and the breed club, where they can put all info in a database to keep track at what age the heart murmurs are found within this breed. The owner of the dog basically don't have to do echography incl. color doppler test, because 90% of all heart murmurs found at an older age (over 5 years) have been incurred due to Degenerative Mitral Valve Disease.

At first the dog has no expense of this murmur. Usually the heart can compensate this little leak well for years. At the moment the heart murmur decreases again (because the heart, how contradictory it sounds, starts to wear out) or if the dog gets clinical complaints (e.g. less stamina, breathe faster, falling at rest with excitement, cough) it is wise to make an x-ray of the chest cavity, to see how the quality of the heart muscle or breast engorgement occurs in the lungs because of less functioning of the heart. With this than can be decided whether and what medications the dog needs. The owner does absolutely not have to be afraid that the dog will suddenly drop dead.



If it is a breeding bitch or male younger than 5 years, it is wise to make an echography incl. color doppler test by a cardiologist to find out whether it is indeed Degenerative Mitral Valve Disease or 'sport heart' or another defect, and to ensure that you know what is present within the blood line. An echography incl. color doppler test can best be judged by a cardiologist because the radiologist in training learned nothing in his training package about heart research .

This allows a dog with a sporting heart to be wrongly sentenced to sufferer from Degenerative Mitral Valve Disease! In the past there have already been made big mistakes which had a major impact within a dog breed.

This heart screening should according to drs. N. van Israel be carried out on **3 places** on the body:

- 1 right side chest, at the height of heart,
- 2 left side chest, at the height of heart,
- 3 In the middle under the diaphragm, in direction to the heart (for PDAB and aorta).

If this test is not carried out on these 3 places, then there is an incomplete imaging and the screening is not executed correctly, and is the outcome of this test not complete and may even be incorrect.

If there is a breed dog dying at a young age, then it is recommended to carry out both macroscopic as histological section on the dog, and provide this result to the breed club and to the breeder, so there are certainties about the cause of death and we get more insight in the prevention of any (heart) problems in young dogs, and we within the breed stay on top of the physical disorders. Note that if breeders are doing their best to breed pedigree dogs as healthy as possible, they dependent on the information and feedback that puppy buyers submit about their dogs. Thus the responsibility of the health of a breed is located at both the breeder and the owner of a (breed) dog.

If indeed there must be done an echography incl. color doppler test, as a breeding bitch/male has a heart murmur, then one can go to drs. N. van Israel (<http://acapulco-vet.be>) in Stavelot or in Ridderkerk (NL) where she takes consults every 1 x per month, or to Mr. H. Gerritsen in Ommen (NL) (<http://www.dekompaan.com/>), or in Utrecht (NL) at the Faculty at Mr. V. Szatmari (he currently has only 1 day in the week access to the ultrasound doppler equipment). These are locations for dog owners in The Netherlands, for people living in other countries we advise you to make an appointment to have the test done by a cardiologist.

On the website of drs. N. van Israel are several publications, this is a direct link to the publication page:

<http://acapulco-vet.be/publications/publications-par-sujet.htm?lng=nl>



After consultation, we as breed Club recommend the following to the breeders:

Only use dogs that does not have a heart murmur at the age of 5 years or younger.

- Bitches younger than 5 years will only be mated by males (who are) older than 5 years. (with a signed and dated statement, that there is no heart murmur detected in the physical examination of the dog with an indication of the test date)
- Only use males younger than 5 years on bitches older than 5 years. (with a signed and dated statement, that there is no heart murmur detected in the physical examination of the dog with an indication of the test date)
- If one wants to use an older dog with heart murmur it must be known when the heart murmur started and there must be a declaration of a cardiologist that it's going to be a murmur that it is Degenerative Mitral Valve Disease related to old age and not the aforementioned variant that is found in younger dogs.

The breed club will organize a consultation in which this item will be discussed with their breeders, to then submit the results to the yearly club meeting.

Australian Cattle Dog & Kelpie Vereniging (ACD&K Breeding Club) icw Australian Kelpie breeders

