

VETERINARY TECHNICAL DATASHEET

Early-Onset Progressive Polyneuropathy; mutation originally found in Alaskan Malamute



Mutation Found In :Alaskan Malamute

Disorder Type

- Neuromuscular

Disease Severity

- Severe

Background

Early-onset polyneuropathy is characterized by progressive degeneration of peripheral nerves or nerves outside of the brain and spinal cord. This condition starts with small changes like voice changes and progresses to severe weakness in all four legs (tetraparesis).

Key Signs

- Walking difficulties
- Exercise intolerance
- Voice changes
- Progressive severe muscle atrophy
- Ataxia
- Paralysis of larynx and extremities

Clinical Description

The first observable signs in are voice changes, inspiratory stridor, and pelvic limb weakness with progression to muscle weakness of all four limbs, muscle atrophy, and exercise intolerance beginning about 3 to 19 months of age. Affected dogs are usually reluctant to stand still and climb stairs and eventually progress to tetraparesis. Dogs suffering from this condition have decreased spinal reflexes in all four limbs.

Mode of Inheritance

- autosomal recessive

Gene Name

- NDRG1_Alaskan Malamute

Next Steps

Treatment is supportive care and symptomatic depending on the severity of the dog's clinical signs.

References

Drogemuller C, Becker D, Kessler B, Kemter E, Tetens J, Jurina K, Jaderlund KH, Flagstad A, Perloski M, Lindblad-Toh K, Matiasek K. A deletion in the N-myc downstream regulated gene 1 (NDRG1) gene in Greyhounds with polyneuropathy. PLoS One 5:e11258, 2010.

Bruun CS, Jäderlund KH, Berendt M, Jensen KB, Spodsberg EH, Gredal H, Shelton GD, Mickelson JR, Minor KM, Lohi H, Bjerk's I, Stigen O, Espenes A, Rohdin C, Edlund R, Ohlsson J, Cizinauskas S, Leifsson PS, Drögemüller C, Moe L, Cirera S, Fredholm M. A Gly98Val mutation in the N-Myc downstream regulated gene 1 (NDRG1) in Alaskan Malamutes with polyneuropathy. PLoS One 8(2):e54547, 2013.

Rentmeister K, Bilzer T, Petri S., Schanen G, Fehr M, Distl O, Tipold A. Hereditary polyneuropathy in the Alaskan Malamute. Tierärztl Prax 2012;40:26-34.