

The Role of Intestinal Microbiote in Neuromuscular Diseases in Paralyzed Dogs

Gheorghe GIURGIU^{1*}, Manole COJOCARU²

¹Deniplant-Aide Sante Medical Center, Biomedicine, Bucharest, 012371, Romania

²Titu Maiorescu University, Faculty of Medicine, Bucharest, 031593, Romania

* Corresponding author e-mail: deniplant@gmail.com

Abstract

In order to be able to move, animals like man need the nervous and muscular system to function optimally. The brain, spine, nerves and muscles must work together. If there is a disturbance, the messages will not reach the destination and the animal will not be able to move. Depending on the location and extent of the neurological lesions, the dog may paralyze in whole or in part. Post-traumatic paralysis is a complex condition that requires proper treatment and thorough investigations to establish an accurate diagnosis. There are several conditions that can cause paralysis in the dog. The interaction between the health of the microbiome and that of the brain as well as the way it communicates immune and neuronal cells has been studied. Intestinal cells affect the cells of the central nervous system in the brain. The intestinal-brain axis may influence different neurological disorders and it is possible that dysbiosis in the intestinal tract may lead to disturbance of the transmission of nerve controls on the neuromuscular plate. By-products of microorganisms in the intestine, which appear as a result of tryptophan processing in the diet, can limit the level of inflammation in the brain by the influence they have on microglial cells. The current research focuses on the influence that the gut microbiota has on microglial cells and astrocytes that play an important role in the health of the central nervous system. To reach these observations, the authors examined how intestinal microbiota and diet influence amelioration of paralysis in dogs. In conclusion, the link between the health of the microbiome and the health of the brain, shows how the microorganisms in the intestine influence the evolution of paralysis.

Keywords: microbiome, intestinal dysbiosis, neuroimmunomodulation, paralysis, dog.

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