In brief

Dogs with cystinuria are not able to reabsorb the amino acid cystine in their kidneys and therefore high concentrations can accumulate in the urinary tract causing formation of cystine crystals and stones that can obstruct the urinary tract. While cystinuria has been reported in a number of breeds, it is particularly severe in Newfoundlands. Several mutations have been shown to cause the condition and the inheritance pattern varies between them. This variant is known to be inherited in an autosomal dominant fashion; males tend to exhibit clinical signs earlier than females.

Clinical overview

All clinical signs result from the failure to reabsorb certain amino acids and their subsequent precipitation in the urine. Dogs affected by cystinuria present with signs of recurring cystitis, hematuria, stranguria, and pollakiuria. The precipitation of amino acids in the urine results in the formation of crystals and calculi, leading to urolithiasis and urinary tract obstruction, in some cases.

References

Online database
Online Mendelian Inheritance in Animals, OMIA (http://omia.angis.org.au/). Faculty of Veterinary Science, University of Sydney.

Scientific articles