Hypocatalasia or Acatalasemia

In brief

Hypocatalasia, the deficiency of catalase enzyme activity in red blood cells, has been studied in Beagles. The catalase enzyme plays an important role in the cellular defence against oxidative damage. The disorder has only been recognised in a laboratory colony of Beagles. The acatalasemia phenotype caught particular interest as an animal model of a human condition called Takahara’s disease. The disorder is characterised by ulcers and progressive gangrene (tissue death) of the oral cavity. To our knowledge, the disorder is inherited as an autosomal trait, but the exact mode of inheritance is yet to be confirmed. Carriers may potentially show some degree of clinical signs.

Clinical overview

The clinical signs of hypocatalasia in dogs have not been described properly in the literature but include progressive gangrene in the oral cavity. In the human condition, the severity of signs can vary remarkably. The erythrocytes of affected dogs show no signs of catalase activity.

References

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

Scientific articles

