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Con il patrocinio di
A RETROSPECTIVE EVALUATION OF VIPERA ASPIS ENVENOMATION IN DOGS TREATED WITH AN EQUINE-DERIVED F(AB’2) VIPERID ANTIVENOM

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Viper snakebite is an important health problem in dogs in Italy, where four poisonous species of the Vipera genus are commonly found: Vipera aspis, Vipera berus, Vipera ammodytes and Vipera ursini [1]. The clinical features of viper envenomation in dogs are characterized by local tissue injury and systemic signs, including increased vascular permeability, hypotension, hemolysis, anemia, thrombocytopenia, coagulopathy, respiratory depression, myonecrosis, nervous system dysfunction, and acute renal failure [2]. This study describes the clinicopathologic signs and the outcome in dogs envenomed by V. aspis treated with an equine-derived F(ab’2) viperid antivenom (Sclavo Diagnostics International Srl, Siena, Italy) [3]. The study protocol was approved by the Ministry of Health, Department of Veterinary Public Health, Food Security and Bodies for Health Protection (DGSAF 001453-P-01/08/2012). The medical records of 80 dogs presented to 13 veterinary facilities in Tuscany and diagnosed with V. aspis envenomation were retrospectively reviewed. Data included the signalment, date, history, physical examination and laboratory findings, disease progression, treatment, hospitalization time period and outcome. Data were statistically analyzed with Fisher's exact test and Student's t-test. A value of P<0.05 was considered significant. Before treatment, envenomed dogs mostly showed decreased sensory response (58/80), hematuria (38/80), tachypnea and/or tachycardia (34/80). The most common clinical pathology abnormalities were increased creatine kinase, alkaline phosphatase and aspartate transaminase (33/80), prolonged prothrombin time (PT) and activated partial thromboplastin time (aPTT) (27/80), proteinuria and increased urine protein-creatinine ratio (27/80). All dogs received fluid therapy, glucocorticoids and the viperid antivenom, which was administered by intravenous infusion or subcutaneous injection at the dosage of 1 ml/kg (100 mg/kg) body weight. Five dogs died during the study (6% mortality rate), after an average time of 4 days following the bite (range 1-15 days). The large majority of the dogs included in this study (75/80) survived following the administration of the specific equine-derived F(ab’2) viperid antivenom. The antivenom resulted effective in stabilizing or reversing the effects of progressive envenomation syndrome and in improving the clinical conditions within 8 hours. On the contrary, no significant change was observed in the hematological and coagulative parameters and a significant worsening was observed for WBC and RBC count (P<0.05). In conclusion, the specific equine-derived F(ab’2) viperid antivenom was associated with an improvement of neurologic and other systemic effects and the resolution of most of the clinicopathologic signs in the envenomed dogs.