

Drug Esfenvalerate: Diagnosis, Treatment and Prevention

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Submitted: 04 Aug 2020; Accepted: 18 Aug 2020; Published: 25 Aug 2020

Abstract

The article presents identified causes, clinical symptoms and pathological anatomy of poisons, also developed by effective measures diagnosis, prevention and treatment of poison rabbits with pyrethroid esphenvaleriat.

Keywords: Pesticides, Insecticides, Piretroides, Cypervet, Suminak, Esphenvaleriat, Superkiller, Deltanur-1, MDU.

Introduction

In recent years, chemical preparations (pesticides) from the group of synthetic pyrethroids have been widely used to protect plants and animals from various pests and diseases. Among modern insecticides that are allowed for use in agriculture and veterinary medicine, synthetic pyrethroids account for 75-80%. Pesticides of this group are characterized by a high selective effect on pests, relatively low danger for warm-blooded animals, and rapid biodegradation in many environmental objects.

Currently, crop production and veterinary practice of Uzbekistan the most widely used synthetic pyrethroids such as sipernet, suminat, esfenvalerate, the killer, deltaur-1, etc.

Goals and objectives of the study

The safety of widespread use of pyrethroid preparation esfenvaleriat in various sectors of agriculture in Uzbekistan requires the development of effective measures for the diagnosis, prevention and treatment of possible poisoning of farm animals.

Material and methods

Used pyrethroid drug esfenvalerate and a rabbit. Methods developed by M. A. Klisenko et al. (1984), as well as "Temporary guidelines for the determination of SP by gas-liquid chromatography in milk and meat of animals" (Supplement to No. 2473-81 of 22.10.81) were used to determine pyrethroid in pathological material and objects of veterinary supervision.

Findings

The Cause of poisoning among animals in production conditions can occur in contact pyrethroid in feed and water sources, due to gross violations of the requirements of the user for the storage, transportation and application of esfenvalerate while inflating

norms and frequency of use, resulting neblagopriyatnykh weather conditions, compliance with waiting periods after treatments of feed and food crops, and non-compliance with the regulations use pyrethroid for veterinary purposes.

Clinical symptoms

Acute poisoning of rabbits synthetic pyrethroid-esfenvaleriatam mainly characterized by impaired function of the Central and autonomic nervous system. They are manifested by General depression, loss of appetite, salivation, tremor, bronchospasm phenomena, settling of the peristalsis of the gastrointestinal tract, paresis, impaired coordination of movements, convulsions, paralysis of the limbs, comatose state. The death of rabbits occurs in the first 24-72 hours, after ingesting esfenvaleriat in doses close to LD50 (360mg/kg). The time of manifestation and severity of clinical symptoms of poisoning, the severity of the intoxication process, the outcome and recovery time depend on the amount of the toxicant dose. For esfenvalerate characterized by a high curare-like action.

In the blood of rabbits poisoned with esphenvaleriat, the level of hemoglobin decreases by 12%, the number of shaped elements by 13%, osmotic resistance of red blood cells by 20%, the content of total and reduced glutathione by 6-10% and the activity of acetylcholinesterase by 26%. At the same time increasing the content of methemoglobin. 3 times and the activity of serum transaminases (ASAT and Alat) by 2.6 times.

Immunological indicators are characterized by a decrease in the relative and absolute number of T-cells by 30-58%, phagocytic activity of neutrophils by 36% in the nst test, with an increase in the relative and absolute number of B-lymphocytes by 1.5-1.6 times.

The main pathoanatomic changes in rabbits that have fallen as a result of acute esphenvaleriata poisoning are acute hemodynamic disorders in the brain and internal organs with the phenomena of acute catarrhal inflammation of the gastric mucosa and the small intestine. Consequently, in the pathogenesis of rabbit intoxication, esfenvaleriata has its high curarepodobnost, methemoglobin formation, hepatotoxicity, anticholinesterase, membrane-damaging and immunosuppressive effects, indicating a polytropic mechanism of toxic action. The drug can also have a negative effect on the reproductive function of rabbits.

Diagnosis of esfenvaleriata rabbit poisoning should be comprehensive, taking into account anamnestic data, information about the use of peritroids in farms, contact with animals, the results of clinical studies, with the exception of FOS and carbamate poisoning, diseases such as rabies, Auesca disease, tetanus, botulism.

The importance of the differential diagnosis of poisoning esfenvalerate has the determination of activity of enzyme acetylcholinesterase in the peripheral blood. The activity of this enzyme in the blood of rabbits poisoned by esfenvalerate suppressed only by 26-30%. When poisoning with carbamates and organophosphate poisons, the activity of the enzyme is reduced by 60-80 % or more. The highest levels of pyrethroids are usually found in the contents of the stomach, liver, kidneys, lungs, myocardium and spleen of dead animals.

Treatment

The polytropic mechanism of toxic action of esphenvaleriata makes it very difficult to find reliable antidotes for the treatment of rabbit poisoning. Currently, there are no specific means for effective treatment of such pathological conditions. For this reason, the treatment of animal poisoning with synthetic pyrethroids is conducted mainly by means of pathogenetic therapy.

Thus, a positive treated effect in rabbits with acute esfenvaleriata poisoning was obtained from intramuscular administration of atropine-sulfate (0.5 mg / kg), Mexidol (50 mg/kg), ascorbic acid (50 mg/kg), gamovit (0.1 ml/kg) and intravenous use of chromosome (0.5 mg/kg). The frequency of administration of

these medicinal products depends on the severity of intoxication and is 3-5 times. The interval between injections of these correction agents is 6-12 hours. The therapeutic effectiveness of their use reaches 70%. However, with late therapeutic measures, the therapeutic effectiveness is significantly reduced.

Prevention

The lack of reliable means of correcting poisoning of animals (rabbits) with modern synthetic pyrethroids significantly increases the role of measures aimed at preventing various negative effects of their aftereffects. At the same time, successful prevention of poisoning and other undesirable aftereffects of synthetic pyrethroids esfenvaleriata, along with compliance with established regulations for storage, transportation and use in agriculture and veterinary practice, strict control over the content of residual amounts of this xenobiotic in veterinary surveillance facilities.

Conclusions

The maximum residue level (MRL) of esfenvalerate in feed for rabbits should not exceed 0.2 mg/kg of feed, respectively.

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