

US EPA ARCHIVE DOCUMENT

DATA EVALUATION RECORD

(1) CHEMICAL: Trichlorfon

(2) TYPE OF FORMULATION: Unspecified

(3) CITATION: Shutov, A.A., and Varankina, T.T. 1969. [Neuro-
logical disorders in acute chlorophos poisoning.] Klini.
Med. 27:140-142 (Translated from Russian)

(4) REVIEWED BY:

John Peckham
Staff Scientist
Southern Research
Institute
Birmingham, AL 35205
(205) 323-6592

Signature: _____

Date: _____

Duncan Turnbull
Staff Scientist
Clement Associates
Washington, D.C.
(202) 333-7990

Signature: _____

Date: _____

(32A-0136)

(5) APPROVED BY:

Signature: _____

Date: _____

(6) TOPIC: Case History

PART I: CASE HISTORY:(7) MATERIALS AND METHODS:

- (a) Poisoning victim: The patient was a 26-year-old woman.
- (b) Poisoning incident: Not reported
- (c) Amount of exposure: She drank 100 ml of chlorophos.
- (d) Route of exposure: Oral
- (e) Symptoms: For 11 hours, she was comatose. Subsequently, she had exhausting vomiting, severe headache, stomach pains, frequent liquid stools, and general weakness appeared. After 10 days, her condition improved, and she was discharged. She noted an increase in general fatigability and especially "tiredness" of the muscles of the lower extremities. At 7 to 10 days after discharge, paresthesia appeared in the form of a burning and stabbing pain in the region of the foot, as well as slight weakness of the foot. The paresthesia and weakness in the lower extremities increased slowly, and weakness in the hands appeared. Severe pain appeared in all extremities, and there was increased sweating and a discoloration of the wrists and feet. At the end of 1 month, she could no longer walk or hold a spoon.

By 2 months after the poisoning, paresis of all extremities was observed, more evident in the distal section, with development of foot paralysis. Low tonus of the muscles of the extremities and a moderate atrophy of

interosseous muscles of the wrists and feet appeared. Achilles reflexes were absent, the knee and karnopadical reflexes were severely oppressed. The patient felt severe stoitanic with hyperpathetic inflection pains in the lower extremities, which were diminished only though the use of narcotics. The superficial sensitivity was grossly lowered, the joint-muscular feeling in the distal sections of the extremities in the appearance of "gloves" and "socks" was slightly disordered. The skin of the wrists and feet was thin with a pink color, with strong hyperhidrosis.

After 3 months, a slight regression of the polyneuritic syndrome started, the pain and the hyperhidrosis were reduced, the strength in the hands slowly increased, and there appeared very slight movements in the talocrural joints. After 4 months, the patient started to walk without help. Five months after poisoning, the patient still walked with difficulty because of deep foot paresis, her Achilles reflexes could not be stimulated, and sensitive and vegetative-trophic disorders remained.

(f) Treatment: The treatment of toxic polyneuritis included vitamin B complex, tissue preparations, ATP, dibasole, and physical therapy procedures.

(g) Clinical Tests: A general and biochemical analysis of the blood was normal. The fundus of the eye, the cerebrospinal fluid, and craniography were free of abnormalities.

Electroexcitability tests revealed a reaction of regeneration of the muscles of distal sections of all extremities.

PART II: GENERAL FEATURES OF ACUTE POISONING OF CHLOROPHOS WITH DEVELOPMENT OF NEUROLOGICAL DISORDERS:

(7) MATERIALS AND METHODS:

- (a) Poisoning Victims: The patients were two women, ages 18 and 26, and a man 45 years old.
- (b) Poisoning Incident: Not described
- (c) Amount of exposure: 30 to 100 ml of chlorophos
- (d) Route of exposure: Oral
- (e) Symptoms: All the patients were in a serious comatose state for 6-11 hours with a serious toxicosis, disturbed heart activity, reduced arterial pressure, and gastrointestinal disorders.

In the next 2-5 days, acute asthenic condition and gastrointestinal disorders (general weakness, headache, stomach pains, and liquid stool) were still present. Later, there was a short period of a relative well-being in all the patients.

The first symptoms of the nervous system disorder occurred 7-10 days after the period of relative well-being. The first symptoms of the polyneuritic syndrome in all the patients were the increasing intensity of paresthesia and very acute pains in the extremities, which were relieved only by the use of narcotics. Acute ailments of the nervous

system included hyperpathical pains, peripheral polyneuritic type of pain, and temperature, and tactile sensitivity in the distal section of the extremities. Later, locomotive disorders developed slowly as inert paresis of the extremities with areflexia, atrophy, atony, and a reaction of the regeneration of the muscles. In two patients, paralysis of the distal sections of the legs developed. All patients had extreme vegetative-trophic hyperhidrosis, thinning out, reddening, and later, bleaching of the skin of the wrists and feet.

The symptoms of the polyneuritic syndrome intensified in all patients up to 2 months. After that, a period of relative stability was observed. The recovery of the neurological disorders was characterized by a very slow regression. One patient, 9 months after the acute poisoning, still had paralysis of the feet and paresis of the proximal sections of the legs. This patient walked with crutches. Another patient, as previously noted after 5 months, still walked with difficulty because of weakness in the feet.

The peripheral nerves of the legs were primarily attacked, and to a lesser degree, the nerves of the arms. The meninges and cerebrospinal tracts appeared to be spared.

There was a strong direct dependence between the severity and persistence of the neurological complications and the depth and duration of the coma, as well as the degree of toxic manifestations.

CORE CLASSIFICATION: Not applicable

- (8) REPORTED RESULTS: Acute poisoning with clorophos may be the cause of acute neurological complications, in the appearance of acute polyneuritis with extreme locomotive, sensitive, and vegetative-trophical disturbances. A slow development of polyneuritis after a short period of relative clinical well-being following an acute general, toxic stage, a chronic course and a resistance of the symptoms of the polyneuritis syndrome are typical.

One patient had paralysis of the feet and paresis of the lower extremities 9 months after the acute poisoning. Another still walked with difficulty after 5 months because of weakness in the feet.

- (9) TECHNICAL REVIEW TIME: 3.0 hours