

## UPON THE CLINICAL CHARACTERISTICS OF HELMICIDE INTOXICATION IN CHILDISH AGE

D. Minchev, D. Hristov

Although some new preparations against helminths were recently applied in the practice the piperazin-derivative Helmicide (H) is still quite often used in the treatment of ascaridosis. Its toxic effect due to unproper doses according to the age and the false opinion that H has a low level of toxicity and slight side-activity for the organism can cause certain disadvantages in the clinical application (B. Krastev, 1966; A. Tzutomanova, I. Karakostov, 1966; G. M. Genov, 1959).

Still insufficiently analysed is the neurological syndrome of intoxication after H-application; most often a hyperkinetic subacute encephalitis, chorea minor, "Salaam" spasms, rhombencephalitis, etc. are taken into consideration in ambulatory conditions ((B. Krastev, 1966).

The long clinical experience and the profound knowledge of the piperazin-derivatives shows that they are substances with expressed toxicity and practically tend to certain side-effects with definite participation of the central nervous system (CNS).

In coordination with the aforementioned data we report our 5 cases of H-intoxication, creating certain diagnostical difficulties and characteristic changes in brain BEA; the patients were accepted to the Clinic of Neurology, Higher Institute of Medicine, Varna city.

**First case:** Patient K. A. Y., age 7, CR N. 16388/1980. Three days before the clinical examination she was treated with H after her mother's opinion with a dose  $\frac{1}{2}$  spoon-full 3 times a day. Soon after the applied "treatment" the child began to stagger, was feeble, atonic, with "bended" head, uncomfortably feeling, but without any temperature caughing, vomiting or diarrhoea.

The physical status shew a total hypotonia, hyporeflexia, drunk-walking; the child stood in strange positions with a constant attempts to fall down suddenly. The laboratory data: blood, urine, eye-tests, craniographies, liver tests, ionogramme were in the normal range. The EEG-recording demonstrated a high-voltage, slow, unregulated BEA with hypersynchronical peak tetra—and single delta-waves, forming paroxysmuses without an expressed hemisphere asymetry. The disorders in the electrogenesis show certain disfunctions of the mesodiencephalic brain structures. The suggested dehydratic treatment and application of vitamins cause a considerable improvement of the status of the child, stable walking, straightly lifted head. On the 6-th day the child was discharged healthy with a gradual normalization of the bioelectrical changes in the dynamic EEG-recordings.

**Second case:** Patient I. P. I., age 6 years, CR N. 20999/1978. Accepted to the clinic with initial diagnosis "Hyperkinetic subacute encephalitis". Falling ill out of a sudden after a 3-day H-treatment with the dose of an adult shows the following symptoms: unstable walking, staggering to all directions,

unvoluntary additional movements of the hands. Until then the child had suffered often of pneumonia and catharsis of the respiratory tracts.

Physical status: spathy, unproper movements of the hands, sudden bending of the body, unstable walking and muscular hypotonia. Laboratory data were in the normal ranges. EEG at the time of first examination shew rough diffusive changes with high-voltage peaks of delta-waves, synchronized in often discharges of hyperpnea. 3 days after being accepted to the clinic, without any treatment, the neurological symptoms were not repeated and soon later the EEG-recordings also shew a normal picture.

**Third case:** Patient Y. A. I., age 3 years, CR N. 26125/1979. A week before being accepted to the clinic the child complains of headache and coughing. 2 days later the child was treated by 1 spoon-full twice a day with H and soon after that there was an unstable walking, staggering with sudden bending (suggested to be "Salaam" spasms), hyporeflexia and muscular hypotension. Because of the febrility and auscultatory pulmonary findings the treatment was with penicillin, glucose and vitamins; as a result the condition improved considerably and the child was discharged from the clinic healthy. EEG-recordings normalized one week after fading of the neurological symptoms.

The rest 2 cases shew analogous clinical characteristics and EEG-recordings.

The analysis of the neurological signs and the dynamics of BEA allow to conclude the following: all patients had an acute beginning of H-intoxication — 2—3 days after the H-treatment; 2 of the children are treated even in the actual for their age dosage. The characteristic clinical symptoms of H-intoxication were: muscular hypotension, hyporeflexia, staggering walk, unvoluntary movements, sudden bending. 2 days after the H-application was stopped the symptoms were almost absent, whereas on the third day the status was already normal.

The dynamics of EEG-recordings in the acute stage of intoxication witnesses the participation of middle brain structures which is a result of the neuroleptical action of H on the CNS (F. Möeschlin, 1964; E. Perrottet, 1965). The high-voltage tetra-, peaks and single delta-deviations with an expressed tendency of clonal synchronizing were not so manifested on the second and third day; the voltage of bioelectrical waves and the level of electrogenesis had a constant tendency of normalizing. The latter came after the neurological symptoms faded and the subjective complaints of the patients were absent. All that proved the prolonged toxic effect of H on the reticular formation, which clinically, in the phase of recreation, could not be registered. The clinic-EEG correlations provided additional information about the pathogenetical mechanism of the toxic action of H on the mesodiencephalic brain structures. Latash L. P. (1956) and Grashtenkov N. I. (1966) tried to find a possible relation between the decreased initial influence of the reticular formation through the reticulo-spinal connection, common clinical features of hypotonia, hyporeflexia and bioelectrical changes.

For the diagnosis of H-intoxication an important role is contributed to the precise anaemnesis and absence of local neurological symptoms against the background of an expressed muscular hypotonia. The BEA-disorders shew a coincidence with the clinical signs; a result of the toxically affected functions of mesodiencephalic structures in the acute stage. During the period of recreation the neurological symptoms precede the normalization of the pathological disorders of the cerebral electrogenesis, which requires a longer EEG-control.

## REFERENCES

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**К КЛИНИЧЕСКОЙ ХАРАКТЕРИСТИКЕ ИНТОКСИКАЦИИ  
ГЕЛЬМИЦИДОМ В ДЕТСКОМ ВОЗРАСТЕ**

*Д. Минчев, В. Христов*

## РЕЗЮМЕ

Авторами анализируются клиническая картина 5 детей в возрасте от 3 до 7 лет, интоксикированных пиперазиновым препаратом гелмицидом при лечении аскаридоз. У двух детей интоксикация развивалась при обычной для их возраста дозировке, а при остальных — в результате ее превышения. Во всех случаях были отмечены следующие неврологические проявления: недомогание, мышечная гипотония, гипорефлексия, понурость головы, самопроизвольные сверхдвижения рук, поклоны телом и ЭЭГ изменения. Все эти особенности свидетельствуют о дисфункции мезодиэнцефальных мозговых структур. Своевременный диагноз и клиничко-ЭЭГ корреляции в связи с использованием гелмицидов в практике способствуют быстрой клинической ориентации и правильному терапевтическому подходу.