A CASE OF GROSS OVERDOSAGE OF SOLUBLE PHENYTOIN

BY

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Soluble phenytoin is an anticonvulsant now widely used in the treatment of idiopathic epilepsy. The exact site of its action has not been elucidated, although it is generally appreciated that it acts differently from phenobarbitone. Toxic effects due to overdosage have been classified by Blair (1939) into (a) nervous symptoms consisting of giddiness, blurring of vision, diplopia, clonic spasm, tremors, muscular irritability, ataxia, and nystagmus; (b) mental symptoms consisting of euphoria, excitement, irritability, confusion, delusions, hallucinations, dullness, and depression; (c) cutaneous eruptions, varying from a slight erythema to a scarlatiniform or morbilliform rash; and (d) gastro-intestinal symptoms such as nausea and anorexia. Other toxic effects include fever and swelling and tenderness of the gums. These toxic effects have been noted in the course of therapeutic usage of the drug and are quickly relieved by reduction of the dose or temporary withdrawal of the drug.

The following case of gross overdosage (self-administered) is, I think, worth recording.

Case Report

A single young woman aged 18 was admitted to Oldchurch County Hospital on the evening of Feb. 12, 1948, with a history of having swallowed a total of 250 tablets of soluble phenytoin (1½ gr. (0.1 g.) each) about eight hours previously. According to her previous history (obtained from her mother) she had been suffering from idiopathic epilepsy since the age of 14 and had been attending a hospital for treatment, which consisted of 1 gr. (0.65 mg.) of phenobarbitone and 1½ gr. of soluble phenytoin thrice daily. This seemed to keep her attacks fairly well under control. During the past year, for instance, she had had only three attacks. Between attacks she appeared quite normal, apart from occasional outbursts of "temper," and was able to manage her work at a sack-making factory satisfactorily. On the day before her admission to hospital her mother had collected a three months' supply of phenobarbitone and soluble phenytoin (the latter consisting of 250 tablets). The mother, it must be added, controlled the supply of tablets to her daughter.

Shortly before her admission to hospital, and about six hours after taking the tablets, she had vomited once, the vomitus consisting of some whitish material only.

On admission the patient was seen to be a well-developed and well-nourished young woman. She was conscious and co-operative. Her main symptoms were double vision, intense generalized headache, and severe giddiness. There was gross cerebellar ataxia so that she was quite unable to sit up in bed or to stand up. When she tried to do so she swayed and reeled in all directions. There was coarse vertical and horizontal nystagmus. No ocular palsies were demonstrable and the pupils reacted normally to light and accommodation. Visual acuity seemed unimpaired and there was no deafness or tinnitus. The speech was slurred. The other cranial nerves appeared normal. Intention tremor was pronounced, and gross ataxia of the lower limbs was present. There was no paresis, paralysis, spasticity, or hypotonia of the limbs. Sensation was unimpaired. None of the deep tendon reflexes were elicited. The plantar responses were extensor. The fundi appeared normal. Apart from a pulse rate of 110 and a blood pressure of 170/100, the other systems remained unaffected. No abnormality was detected in the urine. Gastric lavage produced a thin white solution.

As the patient was conscious and felt comfortable while she was kept flat in bed, no special treatment seemed to be indicated. On Feb. 13 the clinical picture remained much the same. She had slept well during the night and the headache had almost cleared up. Diplopia was absent. The pulse rate had dropped to 90. There was, however, much nausea and vomiting of bile-stained fluid material. Next day the headache had cleared up and the vertigo was much improved. She could now sit up in bed without reeling. Horizontal nystagmus was still present and the speech was still slurred. The plantar responses were now flexor. The blood pressure was 90/60.

On Feb. 16 the ataxia had completely cleared up and she was able to stand and walk about normally. The speech was also improved. There was still some degree of horizontal nystagmus, however. Next day the nystagmus was absent and she was regarded as having completely recovered. On Feb. 22 she had a major epileptic attack. On Feb. 28 she was discharged from hospital.

Unfortunately it was not possible to estimate the soluble phenytoin levels in the blood, urine, cerebrospinal fluid, or gastric contents. Examination on Feb. 13 showed:—urine: acid, trace of albumin present, no other abnormality detected; blood urea: 26 mg. per 100 ml.; alkali reserve: carbon dioxide content, 46 vols. per 100 ml.; blood: haemoglobin, 80% (Haldane); red cells, 4,100,000; white cells, 7,800; platelets, 180,000; bleeding time, 4 minutes.

Comment

Both the patient's and her mother's evidence confirmed that the whole of the three months' supply of soluble phenytoin had been swallowed. Of this amount some was apparently vomited a few hours afterwards and some was withdrawn by gastric lavage. It was obvious, however, that a large amount had been absorbed, although without blood-level readings it is impossible to form any idea of the exact quantity. From a consideration of the clinical features of the case it would seem that the chief effect of the drug was on the vestibular nuclei. The raised blood pressure would suggest an effect on other medullary centres. There was complete absence of any evidence of derangement of cortical function. The headache was probably due to the rise in blood pressure. The escape of the other systems from effects of the drug is as would be expected, it being accepted that soluble phenytoin has no deleterious action on the blood, kidneys, liver, or heart. It is also of interest that a major epileptic attack occurred ten days after the overdose was taken—five days after the patient was regarded as having completely recovered.

Summary

A case of gross overdosage (self-administered) of soluble phenytoin is described. The clinical features consisted mainly of gross cerebellar ataxia, which improved in five days. No specific therapeutic measures were carried out and recovery was good. A major epileptic attack occurred five days after recovery.

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REFERENCE

Blair, D. (1939). *Post-grad. med. J.*, 15, 344.

The St. John and Red Cross Joint Committee have allocated £150,000 out of funds earmarked for the relief of disabled ex-Servicemen to meet the urgent necessity for more extensive quarters for the nurses at the Star and Garter Home for disabled ex-Servicemen at Richmond. The Star and Garter is one of the homes not included in the national health scheme. Because nearly all the 183 patients are bedridden, or mobile only in invalid chairs, it requires as many as 152 people—nurses, domestic workers, and administrative staff—to look after them.