

THE SINGLE-DOSE TREATMENT OF OXYURIASIS WITH PROMETHAZINE HYDROCHLORIDE: A CAUTIONARY TALE

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The modern methods of treating threadworm infestation are rather tedious. To administer doses of a medicament more than once a day for at least 7 days in succession, and to repeat the course of treatment after a 7-10 day interval requires a degree of persistence and patience which is not always forthcoming; nor, in many cases, does it appear worth while in view of the great probability of reinfestation. A single-dose method of treatment for this annoying and potentially harmful complaint will be eagerly welcomed. For this reason I followed to the original article a recent advertisement drawing attention to successful work by Avery¹ along this line, and on this credential, which appeared wholly convincing, I decided to try the single-dose treatment he described, when the next occasions arose.

Avery records that he achieved eradication of the threadworm in 97 of his 100 cases, ranging from 3 years of age to mature adults, after one oral dose of promethazine hydrochloride *B. P.* He used the Wyeth product but the identical substance is also produced by Rhone-Poulenc and May and Baker. Avery's method is to administer 125 mg. of promethazine hydrochloride at bedtime. He advises no preliminary preparation and the dose is the same irrespective of the patient's age. He found this treatment to be rapid, effective, non-toxic and inexpensive.

Promethazine is a derivative of phenothiazine, which has been used intermittently for the treatment of vermiculous patients since 1940 and is not without unpleasant side-effects. Promethazine hydrochloride is N-(2'-dimethylamino-2'-methyl) ethyl-phenothiazine hydrochloride. It is much used in clinical practice as an antihistaminic, and has a marked anti-adrenaline effect, a noticeable hypnotic influence, a slight atropine-like action but a strong anti-emetic quality. It has also some local analgesic action. Given at bedtime it should induce restful sleep. Makers of the drug recommend a dosage of 15-25 mg. per day in a single dose for adults or in divided doses for children of 5-10 years of age. It appears to be well tolerated in this range of dosage but side-effects observed in some patients have been gastric upset, somnolence, dizziness, slight disorientation, slight headache and visual disturbances, pains in limbs and joints, and ataxia.

Such side-effects as the foregoing were allowed for, but undue regard was not paid to an incidental comment by Avery on his results 'that 5% of children 4-10 years old experienced nightmares on the night of medication, which it is suggested may represent the toxic by-products of heavy infestation released by the activity of the drug upon the worms'. Sisse² lists nightmares as the third most common manifestation of threadworm infestation.

THE TALE

The whole of the W. family, parents and 2 daughters aged 4 years and 6 years were judged from the symptoms to be fairly heavily infested with threadworms, and they agreed to try the single-dose method of treatment rather than the longer piperazine course.

At 5.30 in the evening the two children were each given 125 mg. of promethazine hydrochloride by mouth. At 8.30 p.m. the nurse-maid noticed that the younger child was unusually restless in her sleep, and soon after the child began to talk nonsense, with slurred speech, and seemed to be in a state between waking and sleeping. At 10.30 p.m. I was called because the parents returning home were alarmed by the child's rather gross incoordinate and ataxic movements of the whole body. When I saw her she was agitated and thrashed about intermittently, attempted to climb, unsteadily, out of the bed. She accompanied these bodily movements with a continuous, nonsensical, slurred commentary on what were hypnagogic hallucinations. She appeared repeatedly to fall asleep only immediately to startle awake. There were times when she seemed to understand words addressed to her and yet showed no recognition of her parents. There was a picking at the bedclothes, sudden piercing screams, frequent giggling and often a belligerent attitude to whomever happened to be close to her. Her pupils were moderately dilated in the ordinary electric lighting. The deep tendon reflexes were not exaggerated nor depressed and were equal bilaterally. This distressing behaviour immediately raised the disturbing question of acute poisoning by the promethazine. At 1.30 a.m. the child vomited a quantity of the preceding day's food whereupon she was given milk with a quick-acting barbiturate, which she promptly also vomited. At 2.30 she was quieter, at 4.30 she appeared to sleep, and at 6 a.m. she was 'dead to the world'.

At 1.30 a.m. the elder sister began to manifest identical psychical disturbances and followed her younger sister's pattern in all its detail. An attempt was made to sedate her with 'Nepenthe' from the beginning but by 4.30 a.m. she was wide-eyed and hallucinatory. Barbiturate was given her at this time and by 5.30 a.m. she, too, fell asleep.

Both children awoke at 6 p.m., 24 hours after the promethazine had been swallowed. Sleep had been deep and their appetite on waking was ravenous.

This 'sleep-disturbance' having ended so happily it was discussed with the parents in the light of day and it was apparently satisfactorily explained away by Avery's surmise of toxic by-products of heavy infestation liberated by the action of the drug. When it was added that not one of the 5% of Avery's cases that had suffered 'sleep-disturbances' had been older than 11 years, the father volunteered to submit himself to this single-dose method of treatment—he was so horrified by the thought that he harboured the worms in his own body—and took a 125 mg. dose of promethazine. He was a man of 35 years weighing 200 lbs. and over 6 feet tall. I was *not* called in that night to witness, by all accounts, another remarkable manifestation of cortical disorientation in this big man. But the description given to me by his wife was only credible because of my own experiences with his daughters. He too, awoke or seemed to awake from a restless sleep into a strange bellicose nightmare, unmanageable by his wife. He spoke strangely, acted in a queer manner, and at times became vicious and destructive. This behaviour continued until sunrise when he fell into a deep sleep, from which he awoke in the late afternoon to eat a huge meal. He was conscious of having been in some unpleasant psychical

state but the details were fast-fading . . . though not from his wife's memory.

Comment. Because the big majority of patients bothered by threadworms are young children, the possible, perhaps even probable, distressing reaction to promethazine given in a single large dose by mouth, described above, cannot be anything but a serious contra-indication to its use in a family practice where the doctor-patient friendship might be somewhat strained.

SUMMARY

A method of treating threadworm infestation by a single dose of promethazine hydrochloride is described and discussed. A cautionary tale is told to warn against a serious contra-indication.

REFERENCES

1. Avery, J. L. (1956): *J. Amer. Med. Assoc.*, 161, 681.
2. Sisbe, W. N. (1943): *Ibid.*, 122, 357.