

The Use of Luminal Sodium in Epilepsy.⁽¹⁾ By J. TYLOR FOX,
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THE history of the drug treatment of epilepsy is not an encouraging one. "There is scarcely a substance in the world," says Sieveking, "capable of passing through the gullet of man that has not at one time or another enjoyed the reputation of being anti-epileptic," and it appears rather an impertinence to report upon yet another drug to be eulogised, tested, doubted, and perhaps ultimately discarded like so many of its predecessors. This paper is, indeed, no more than a preliminary note on the use of luminal sodium, and much more extensive trials over long periods are required before the value of the drug can be finally estimated.

Luminal was first tried in Germany in 1912, and has been fairly widely used, but I have not come across any record of the results obtained from it in England or America.

Luminal is phenylethylmalonylurea, or a derivative of veronal in which one of the ethyl groups is replaced by a phenyl radicle. Luminal sodium is a soluble derivative of luminal, and I have given it in solution, with hot milk or water, in doses of 1 to 2 gr. once a day, usually at bedtime. The dosage is small as compared with that of continental observers, who consider that 3 to 4½ gr. can safely be given to adults over prolonged periods, provided that the patients are under adequate supervision. For the purposes of investigation sixteen cases of ordinary epilepsy in children or adolescents were chosen; the patients were all liable to major attacks at fairly regular intervals, and none showed signs of marked mental defect or deterioration. It is essential to confine statistical investigation to patients whose fits show a regular incidence, unless very long periods of time are under review. Most of the patients were taking bromide when the luminal was started, and the daily dose, which in no case exceeded 30 gr., was continued. This course was, no doubt, open to some objection, but had it not been followed, it would have been impossible to say whether any modification of the fit-incidence was due to deprivation of bromide or to the luminal sodium. In this connection it is perhaps worth mentioning that I have known stoppage of bromide to be followed by a considerable lessening in the number of fits. All the patients were under the continuous supervision, both by day and night, of experienced nurses or attendants, so that the fit statistics should be complete.

The accompanying table shows the age of each patient, the daily dose of luminal sodium, the number of attacks recorded in each of the last six

⁽¹⁾ A paper read at the Spring Meeting of the South-Eastern Division, May 4th, 1921.

months before the commencement of the administration of the drug, and the number recorded in each of the first three months of its administration, the average number of fits per month during those two periods, and the gain in weight during the three months of the drug treatment.

Table Showing the Effect of Luminal Sodium upon the Fit Incidence of Sixteen Young Epileptics.

	Sex.	Age.	Daily dose.	Average fit incidence.		Gain in weight.
				Six months prior to administr.	Three months of administr.	
A. E. S—	M.	18	2 gr.	4·3	1·0	8 lb.
Y. L—	M.	22	2 "	6·8	0·0	8 "
C. J. F—	M.	16	2 "	7·5	4·0	8 "
A. E. C—	M.	17	2 "	9·7	2·3	7 "
L. J. H—	M.	13	2 "	4·5	3·3	2½ "
			reduced to			
			1 gr.			
E. G. T—	M.	21	2 gr.	6·0	0·7	Lost 5½ lb.
C. W. S—	M.	19	2 "	8·7	5·3	Gain 7 lb.
L. T. H—	M.	15	2 "	6·5	2·3	6 lb.
E. A. O—	M.	11	1½ "	7·3	0·3	5½ "
C. H. C—	M.	12	2 "	8·3	4·7	5½ "
R. G. S—	M.	12	1½ "	4·2	0·0	1 "
R. S—	M.	11	1½ "	8·8	4·7	5 "
			reduced to			
			1 gr.			
N. E. P—	F.	14	2 gr.	6·0	4·0	2½ "
L. C. D—	F.	15	2 "	6·2	5·3	1 "
A. G—	F.	15	2 "	7·5	2·0	10 "
H. H—	M.	20	2 "	2·3	0·7	7 "

Attention may be particularly called to two points in the figures shown. In the first place there is a marked reduction in the fit incidence in every case. This uniformity of reaction to the drug places it, I believe, in a category apart from other anti-epileptic remedies. I have drawn up and published elsewhere similar tables dealing with the effects of belladonna, digitalis, and of borax upon epilepsy, and they show no such uniformity of reaction. Borax, indeed, is the only one of the three which appears, when the figures are studied in bulk, to have any effect at all in the reduction of fit incidence. Various statistics of the fit incidence under the influence of bromide have also been published, but in none that I have seen have the beneficial results been so uniform as in this table. This point is worth stressing, because it is a matter of common knowledge that marked benefit, or even a complete arrest of fits, may follow the adoption of any new line of treatment, therapeutic or dietetic, or from a chance change in the environment of any individual

patient. Secondly, the considerable increase in weight that occurred in almost every case can be no mere coincidence. The average increase of the sixteen cases works out at just under five pounds, and it will be noted that only in one case is a loss of weight recorded.

So much for the advantages of the drug. Are there any drawbacks to its use? Careful observation was made of the mental and physical conditions of all the patients. In no case was complaint made of headache or abdominal pain; nor were there any acute outbursts of excitement such as have been recorded by continental observers. In five of the sixteen cases the general mental condition of the patients was apparently unchanged; in three the patients were reported as rather more irritable than formerly, while in four they were evidently more cheerful and alert. One case, L. C. D—, a girl, æt. 15, has become distinctly more dull since taking luminal sodium; her speech is hesitating, and she appears to have trouble in finding her words. It is to be noted that her fit record shows less improvement than that of any of the other patients, and that her increase in weight is correspondingly small. Two boys, L. J. H—, æt. 13, and R. S—, æt. 11, became sleepy after taking the drug for a few days. In both cases the dose was probably too large, and improvement followed on its reduction. Finally, in the fourth month of administration, one boy, C. H. C—, æt. 12, became very dull and lethargic, and could only with difficulty be persuaded to eat his food. The drug was stopped and the boy began to get back to his normal condition some days later, but as he had an exactly similar attack some time ago, it does not seem reasonable to ascribe his condition to the luminal sodium.

As in the case of other drugs, luminal sodium seems to give best results in cases liable to major epileptic attacks; cases who suffer from momentary losses of consciousness, or from periodic short attacks of altered consciousness with automatism, are notoriously inaccessible to drug treatment. Nevertheless there is recorded a diminution of momentary attacks in three of the patients in the table who were liable to them; and one of the most satisfactory cases we have had is that of a boy, æt. 9, who was liable to very frequent psychic attacks with automatic movements, the number and duration of whose attacks have been very greatly diminished by three months of luminal treatment, and who has become, as a consequence, very much brighter mentally.

The modern view of the psycho-genetic origin of epilepsy has led some writers to discount the value of any treatment directed to reducing the fit incidence or arresting the fits. Fits are said to be protective reactions away from an environment to which the epileptic, with his egocentric sensitive temperament, cannot adapt himself, and to stop fits is to court further mental trouble. I have seen mental disturbance follow the sudden cessation of fits in an old-standing case of epilepsy, but more

commonly the patient becomes more alert and cheerful when his fits stop, and I have no fear that in using a drug that will arrest fits we are doing the patient any disservice, provided that we are satisfied that the drug itself has no prejudicial effect upon him.

It is, of course, not claimed that luminal sodium, or any other drug, has any curative effect upon the disease ; at best it only arrests or lessens the frequency of the convulsive attacks.

Mental Disorder resulting from Encephalitis Lethargica.⁽¹⁾ By
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THE following brief notes refer to a case which I think presents certain features of interest. It is quite a common thing for children of tender years to be sent to mental institutions, but it is somewhat unusual for mental disorder of such a degree as to require certification to occur in a boy *æt.* 10 who had previously been of sound mind. For this reason it is thought that a few details about such a case may be worth recording.

The patient, *æt.* 10, was certified and admitted to the Newcastle Mental Hospital on December 29th, 1920, the medical certificate stating that he was irresponsible, subject to frequent and sudden periods of excitement, when he became unmanageable, that he had tried to jump over the window, to put his head in the fire, and to stab his mother with a knife.

There is no previous family history of mental disorder. The patient did well at school, and was regarded as perfectly normal in every way until he had an acute illness in the summer of 1920. This illness began about July 8th, the first symptom being pain in the head. Two days later twitchings affecting the whole body developed. About this time he became very drowsy, and on one occasion slept continuously for sixteen hours. His medical attendant diagnosed epidemic cerebro-spinal meningitis, and had him sent to the local fever hospital.

He was admitted to the fever hospital on July 12th. Here the case was kept under observation, and the diagnosis of encephalitis lethargica was subsequently made. Lumbar puncture was performed on fifteen occasions, temporary improvement resulting from each puncture. Nothing was found in the cerebro-spinal fluid to justify either a tubercular or septic meningitis. The patient was discharged on August 25th apparently fit and well, and with no mental derangement.

(¹) Paper read at the Spring Meeting of the Northern and Midland Division on May 12th, 1921.