THE TREATMENT OF ENTERIC FEVER BY CARBOLIC ACID.

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HAVING arrived at Poona towards the close of July, 1896, and being placed in medical charge of the enteric wards, my interest was naturally aroused as to the results of previous treatment. I found that during the year 1895, 46 cases occurred in the cantonment, and were treated in the Station Hospital, with 13 deaths, giving a mortality of 28.2 per cent. I found that for the first seven months of 1896, 14 cases were treated, including three officers, with 11 deaths—a mortality of 78.5 per cent.

I determined on adopting an old treatment of intestinal antiseptics, which had previously afforded me most excellent results, and was originally taught me in the Dublin School of Medicine, the treatment by carbolic acid, which has lately been strongly advocated by Professor Charteris and Brigade-Surgeon-Lieutenant-Colonel Quill, A.M.S. The latter prescribes a mixture of mij of Calvert's pure carbolic acid in combination with chloroform, and gives the medicine for five doses on the first day, seven on the second, and so on till he reaches ten or twelve doses in the 24 hours.

List of Enteric Cases Treated by Carbolic Acid.

No.	Regimental Number and Rank and Name.	Complications.	Relapses.	No. of Days in Hospital.	Remarks.
1	4379 Private C., D.L.I.	Severe bronchitis	Two	108	Excellent recovery.
2	4555 Private C.	Hæmorrhage	Nil	50	R.
3	3765 Private B.	—	—	32	Mild and uncomplicated.
4	4557 Private R.	Hæmorrhage	One	41	Severe. R.
5	5154 Private R.	—	Nil	44	Mild. R.
6	4515 Private C.	—	—	62	Severe. R.
7	3945 Private C.	—	—	48	Mild. R.
8	2310 Private C., R.I.R.	—	—	50	—
9	9775 Gr. D., R.A.	Hæmorrhage	One	52	Severe. R.
10	752 Sergeant W., R.I.R.	—	—	62	—
11	2221 Private L.	—	—	82	—
12	4918 Private M., D.L.I.	—	Nil	72	—
13	4249 Private C.	Hæmorrhage	—	50	Mild. R.
14	4736 Private M.	—	—	19	Died.
15	5097 Private Ch.	—	—	50	Mild. R.
16	4413 Corporal B.	—	—	72	Severe. R.
17	4576 Private B.	—	—	75	—
18	82612 Gunner R., R.A.	Hæmorrhage	One	75	—
19	3308 Corpl. S., 21st Hussars	—	Nil	56	Mild. R.
20	3641 Private R., 2nd Mid. R.	—	—	73	Severe. R.
21	5224 Private O.B., D.L.I.	—	One	97	—
22	Lieutenant C., D.L.I.	—	Nil	73	Mild. R.
23	Lieutenant T., R.H.A.	—	One	75	Severe. R.

I am convinced that some patients are much more readily affected than others, and serious symptoms may be produced, including wild delirium, tendency to collapse, and in one case (seen *post mortem*) a condition of acute congestion of the whole intestinal tract, unexampled in my experience of ten years in close association with the malady. I adopt a more guarded administration of the acid: xxij are given in four doses in 3 viij of water, to which is added a little syrup and spirits of chloroform, and supplemented at night, if the patient is awake, with a couple of doses of ordinary diaphoretic mixture. This plan of treatment, combined with careful nursing and suitable dietary, has afforded fairly satisfactory results.

In all, 23 cases, including 2 officers, were treated with 1 death, a mortality of 4.3 per cent., and this loss I attribute solely to the weak, nervous, and prostrate condition of the patient, as he was only recently convalescent from a severe and malignant attack of acute dysentery.

Hæmorrhage occurred in 8 cases, but was easily controlled by that admirable method recommended by Dr. I. Burney Yeo (*Manual of Medical Treatment*): enemata of Dover's powder and tannin, 10 grains of each, with gallic acid, aromatic sulphuric acid, and liquor opii sedativus internally. In every case it acted promptly, and I can quite concur in his remark that "lives have been saved by the precaution of

having it kept ready at hand in case of emergency." In this hospital it always is, and with no uncertain result.

Cardiac asthenia was generally treated by stimulation, strychnine hypodermically, or caffeine in gr. iij doses every sixth hour.

Hyperpyrexia in three instances caused apprehension, but yielded to ice sponging, ice pack, etc. In one case a layer of ice was suspended about a foot from the body, along the whole length of the patient, the cradle being covered with thick blankets. The plan acted splendidly, as it kept the temperature at a moderate level, under 103°F .

I claim for carbolic acid, judiciously administered in enteric fever, that in the majority of cases it modifies favourably the duration and height of the pyrexia. The tongue rapidly shows a remarkable tendency to clean and become moist. The evacuations become odourless and inoffensive, and tympanitis is held in check. The mental clearness and physical vigour of the patient are well maintained, with frequently a rapid and complete recovery.

I present a tabulated statement giving the names, complications, relapses, and number of days in hospital of the 23 cases treated by the acid. Perhaps I might add that all the cases were most carefully diagnosed with the sanction and concurrence of the senior medical officer and the other medical officers serving here at the time, and in almost every instance they were of a severe and grave type.

DOUBLE OPTIC NEURITIS IN ENTERIC FEVER.

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THE well-known difficulties of making a diagnosis in children between enteric fever and meningitis were strikingly illustrated in the following case:

E. W., aged 11, a boy of weak intellectual development, "ailed" for a few days without presenting any definite symptoms. On the third day the temperature was 103.4°F , and he was purged five times. For the next four days he was purged twice daily. He was restless and noisy, and could with difficulty be kept in bed. Photophobia and signs of cerebral irritation developed. The face was pale, the pupils were equal, the tongue dry, and sordes formed on the lips. There was no purging from the seventh day until he died upon the eighteenth day of his illness, but formed motions were constantly passed. The abdomen was, if anything, somewhat retracted. There were no spots; the spleen could not be felt, nor could an enlarged area be percussed out. The temperature fell on the tenth day to normal, but rose again on the fifteenth, and on the eighteenth day, just before death, it reached 105.2° . The pulse-rate varied from 120 to 160. The left knee-jerk could not be elicited; the right was present. Plantar, cremasteric, and abdominal reflexes were all present. There was no impairment of sensation; no retention of urine. There was never any strabismus, and no convulsions were noticed. Two days before death there was slight inequality of the pupils and well-marked double optic neuritis, more pronounced upon the right side. There was no nasal or aural discharge, and nothing could be heard in the lungs.

The difficulty of diagnosing enteric fever, in the absence of spots, distension of the abdomen, and enlargement of the spleen, was extreme. The temperature was by no means suggestive, and there was no bronchial catarrh. The motions after the seventh day were always formed, but there was no constipation. Before the discovery of optic neuritis the diagnosis was uncertain, but after that distinctly in favour of meningitis. The nervous symptoms themselves were regarded with great caution, for, as Latham¹ has said, "the nervous system will run on to such an excess of sympathy as to seem to engross all living action and suffering, and allow nothing to appear in the body but what directly proceeds from itself." Of no disease is this more true than enteric fever, especially in children. I regret that in this case the urine was not tested for Ehrlich's reaction.

The *post-mortem* examination (by Dr. Goodliffe) revealed distinct inflammation of Peyer's patches, with decided enlargement of the mesenteric glands and solitary follicles. There was nothing in the brain to give rise to the optic