

LECTURE XIV
CARDIAZOL TREATMENT OF
SCHIZOPHRENIA

and
Allied States in Indian Patients

Many articles have been published on Cardiazol convulsion therapy in schizophrenia, but apart from the paper by Dhunjibhoy* from the Ranchi Mental Hospital, all of them have described experience with Europeans and Americans. The present paper summarises the observations on Indian and Anglo-Indian patients treated with cardiazol under tropical conditions in the Mysore Government Mental Hospital, Bangalore, South India.

The following preliminary observations on patients in Indian mental hospitals are relevant:—

(1) The proportion suffering from organic states—post-pyrexial, toxic, or exhaustive—is far greater than that observed in European hospitals.

(2) States of excitement are commoner than states of depression. (It is possible that climate and diet help to determine the types of reaction.)

(3) Most patients are under-nourished and weak. Nutritional anæmias and vitamin deficiency are either frankly responsible for the mental disorder or colour the clinical picture. Mere attention to physical needs and general health often effects a spectacular recovery.

Because of the weak constitution of these patients modifications in the dosage and frequency of drugs producing shock, such as insulin and cardiazol, and of pyrexial agents are necessary. So far as cardiazol, is concerned, one injection a week is often sufficient, and more than two are rarely necessary.

* Dhunjibhoy, J. E. (1938) *Lancet*, 1, 370.

ssary. If no improvement is noticed after six convulsions, the injections are discontinued. If they are given more often severe vomiting and diarrhoea are produced. I may add that insulin shock in patients in the tropics is very severe, uncertain in its effects, occasionally fatal in spite of all precautions, and hence much better avoided.

Induction of convulsions with cardiazol in schizophrenic and allied states was first tried in the Bangalore Mental Hospital in September, 1937, and has gradually superseded insulin shock therapy, first tried in December, 1935. Most of the patients were suffering from schizophrenic states, the dull and seclusive, the stuporous, and the catatonic. Four were depressives, two hysterics, and four confusional-reaction types. The first two patients on whom the injections were tried are referred to in some detail. The observations on the other patients are recorded in the accompanying table.

Case-Records

Our first patient (case 1 in the table) was a college student, aged eighteen, in a catatonic stupor. Prolonged narcosis, baths, and induced pyrexia were of no avail. With one convulsion with cardiazol (5 mg.) he came out of his stupor and became friendly and cooperative. After eight weekly injections he was discharged as "recovered". I interviewed him in September, 1938, about eight months after discharge. He has maintained his improvement and gone back to college, where he is doing well.

The second patient (case 15) was a woman, aged 28, who developed a stupor two weeks after the birth of her fourth child and was admitted to hospital almost immediately. She was in a cataleptic trance, immovable, and had to be fed and clothed and have all her bodily needs attended to. The history stated that she had had a similar stuporous phase after her second confinement, from which she recovered spontaneously after three months. There was no mental breakdown after

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| 24 | 25 | F. | 2 years | Mar. 26, 1938 | Schizophrenic depressive state | April 29, 1938 | 2 | 3 | Improved and discharged, June 26, 1938 |
| 25 | 32 | F. | 30 days | April 9, 1938 | Depressive state (paranoid) | May 3, 1938 | 3 | 4 | No definite improvement |
| 26 | 24 | F. | 4 mths. | June 20, 1938 | Schizophrenic (catatonic) | July 17, 1938 | 7 | 8 | Improved and discharged, Sept. 26, 1938 |
| 27 | 40 | F. | 4 mths. | July 16, 1938 | Schizophrenic | July 22, 1938 | 4 | 5 | No definite improvement |
| 28 | 20 | F. | 90 days | July 9, 1938 | Depressive state | July 28, 1938 | 1 | 2 | Improved mentally; died of encephalitis, Sept. 19, 1938 |
| 29 | 18 | F. | 1 year | Aug. 1, 1938 | Schizophrenic (catatonic) | Aug. 9, 1938 | — | 1 | Recovered from catatonia; mentally the same; still in hospital |
| 30 | 24 | F. | 60 days | July 20, 1938 | Schizophrenic (paranoid) puerperal | Aug. 15, 1938 | — | 1 | Improved |
| 31 | 35 | F. | 30 days | July 20, 1938 | — | Sept. 4, 1938 | 2 | 3 | Recovered |
| 32 | 22 | F. | 15 days | — | Schizophrenic (catatonic) | April 9, 1938 | — | 1 | — |
| 33 | 40 | M. | 4 mths. | Nov. 12, 1936 | Schizophrenic | June 4, 1938 | 2 | 3 | Improved and discharged, June 17, 1938 |
| 34 | 40 | F. | 4 mths. | Aug. 16, 1938 | Hysterical | Oct. 3, 1938 | 3 | 4 | Recovered |

her third child. For nearly four months routine methods of treatment were tried but were of no use. Convulsions were then induced by cardiazol. She reacted very well to the first injection. She came out of her trance-like condition, became friendly and cooperative, and her conversation was sustained, sequential, and relevant. But three days later she sank back into her stupor and was revived by another injection only to sink back again into stupor after a few hours. The amount of cardiazol needed to induce a convulsion has increased from 5 to 22 mg. The lucid intervals depends entirely on cardiazol. She has had nearly fifty injections and is living a cardiazol life analogous to the insulin life of a diabetic. She is still in hospital.

Observations and Conclusions

(1) Cardiazol is a valuable means of treatment. Of 34 patients 12 have recovered and 10 have improved; 12 have shown no improvement.

(2) Compared with other methods of shock treatment, cardiazol therapy is relatively safe. This is of particular importance in Indian patients, most of whom are weak and undernourished, and in whom insulin has a limited application.

(3) The following adverse effects have been noted—*(a)* Vomiting and diarrhoea in all patients if cardiazol is given too frequently. Five patients were more than ordinarily susceptible, and in them even one injection produced severe diarrhoea. *(b)* The convulsions are usually like epileptic fits; but atypical fits—delayed, recurrent, or continuous—were all observed. *(c)* After a few fits patients become apprehensive of further injections.

(4) The pupils, during the fit, in all cases were widely dilated; but in a considerable number they showed alternate contraction and dilation lasting for a maximal period of nearly three minutes.

(5) Three intelligent well-behaved patients described a curious feeling of lightness, of levitation, and that they felt they had no bodies at all. This feeling akin to depersonalisation is worth notice.

(6) The improvement effected by cardiazol convulsions has been not only in frankly schizophrenic stupors but also in depressions and confusional states. In view of the tendency to natural remissions and spontaneous recoveries in these states, it appears that cardiazol is not a "specific cure" for any of these conditions. It is probable that its action is to hasten recovery.

(7) Cardiazol seems to exert maximal beneficial effect on early cases of mental disorder characterised by emotional and intellectual blocking and reduced psychomotor activity, but without severe destruction of nerve-cells.

(8) Some patients have to live a "cardiazol life" for prolonged periods analogous to the insulin life of some diabetics.

LECTURE XV

BRAIN FEVERS

(Non-Specific Fevers Associated With Delirium)

By

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1. **Formulation** :—During the past five years, three hundred patients have been admitted to the Bangalore Mental Hospital suffering from a triad of symptoms, delirium, fever, and dehydration. These being interrelated, there is the possibility that one of them might cause or aggravate the other two groups of symptoms. But, in the cases under discussion, each member of the triad has special characteristics, described in the body of the paper, which makes one presume that the relationship amongst them is not causal in character. These patients have been predominantly women, of all classes and conditions, between the ages of 15 and 85, both lean and fat. Text-books on Psychological Medicine group these disorders along with a host of others under toxic-infective psychosis, or confusional insanity, and dispose of them very briefly. Such a casual disposal by Western observers under European and American conditions might be justifiable, because the number of such patients admitted to their hospitals is not very great. But in India, the patients we deal with do not always fit into the stereotyped groups mentioned above. Moreover, their number, here is so great and they present such interesting clinical and biochemical problems, that they are worth a detailed study. Apart from these academical considerations, the most important one is, however, the seriousness of the disorder, and the fact that most of these patients recover, with intensive appropriate treatment, or die without it. The disorder is also so common that every practitioner must be familiar with it and its treatment.