THE RANGE OF MENTAL REACTION STATES INFLUENCED BY CARDIAZOL CONVULSIONS.*

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In a 15-minute contribution it is only possible to deal with a single aspect of cardiazol therapy. I am confining myself to some observations on the diversity of mental reactions influenced by cardiazol convulsions. My remarks are based on approximately 130 complete courses and a number of incomplete courses given at Bexley Hospital during the last 12 months.

It is becoming more and more evident that convulsion therapy has no specific predilection for schizophrenia, but is able to influence beneficially a number of abnormal mental reaction states. From the scientific point of view this is regrettable, as the prospects of this form of treatment being able to add to our knowledge of the pathology of schizophrenia are thus somewhat diminished.

Meduna has expressed the opinion that the cardinal prognostic criterion in regard to cardiazol treatment in schizophrenia is whether the patient is suffering from a schizophrenic reaction state or from an endogenous, hereditary disorder. It is not always easy to distinguish between these two conditions, but on the whole the so-called endogenous schizophrenic personality shows some abnormality dating at least from adolescence, and although the breakdown necessitating hospitalization may have been fairly acute, there is nearly always a history of long-standing and insidious personality change. Such cases are unlikely to do well whatever their clinical type; nevertheless I have seen several recoveries in patients whose histories suggested a definitely schizoid pre-spychotic personality of some years' duration. On the other hand, recent cases of rapid onset with a background of normal personality and average family stability have an excellent prognosis. Out of 12 female cases of this type only one did not make a rapid and complete recovery, and this one is now showing a somewhat tardy remission. The 11 recovered cases showed an extensive variety of emotional reactions and conduct disorders; prominent symptoms included severe

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confusion (5 cases), depression, anxiety, apprehension or agitation (5 cases), exaltation (1 case), detachment from reality and diminished feeling tone (4 cases), paranoid ideas (3 cases), while all were hallucinated at some period of their illness.

The facility with which so many diverse reactions were influenced by cardiazol fits led me, as it has done others, to experiment with emotional and conduct disorders of non-schizophrenic type.

My colleague, Dr. Ogden, and I have so far treated 4 cases of acute mania, 5 of non-schizophrenic psychotic depression and 3 of hysterical emotional disorder. The first case of mania was in an outstandingly talented girl of 18½ years, who had had no previous breakdowns. She had been acutely maniacal for over 2 months without showing any sign of improvement when she received her first convulsion. Her psychosis cleared up dramatically after 3 fits and she remains perfectly well 4 months after treatment. The next manic subject was a woman of 31 who had had several previous attacks of excitement and depression. She was extremely turbulent and difficult, and had remained in a state of acute mania for 6 months before treatment was begun. She improved steadily and was duly discharged as recovered. Since then she has had a transient attack of depression which did not necessitate certification. Two other cases of recent acute mania in women of 26 and 38 years have been treated. Both had histories of chronic hypomanic personality without previous exacerbations sufficient to need hospitalization, and both responded immediately to cardiazol treatment. The younger patient needed only 8 fits to restore her to her normal mental state, to the complete satisfaction of her relatives. The elder one progressed more slowly and received 20 fits in all. She is now recovered, and her friends state that she is more tractable and easier to live with than she has been for many years. Three of these four patients had a fortnight's somnifaine narcosis without any significant improvement before cardiazol was administered.

The results in the 5 depressed cases were equally promising and rather more dramatic. One agitated woman, 29 years old, who was for 6 months so obsessed with her troubles and " incapabilities " that she could talk of nothing else, became cheerful and busy after 4 fits and had entirely recovered after 8. She has now been perfectly well for 5 months. The next 3 cases are examples of simple, retarded depression with suicidal impulses. Two of them were young women suffering from a recent breakdown ; they were miserable, retarded, anergic and hopeless. In both, a striking improvement occurred after the first convulsion and they had virtually thrown off their depression after 2 fits. Recovery was afterwards uneventful. The third case, a woman, aged 34, who had always suffered from a quiet and " broody " temperament and had already had a similar depressive breakdown, was treated a year after the onset of her last attack, which was severe and unremitting. She began to make steady improvement as soon as her course was completed, but relapsed to a slight extent and may need further treatment. There remains a case of puerperal

depression, symptomatized by dullness, retardation and anergia of 6 months' duration. After only a few fits her depression gave place to a state of hypomania, and being a voluntary patient, she insisted on departing in a phase of misplaced self-satisfaction. This soon cleared up at home, however, and she is now reported to be quite well.

Of the 3 hysterical cases, one showed a dramatic remission after at least 11 years of intermittent self-pity and misery. Her whole temperament seemed to change after 5 fits, and she remains happy, cheerful and self-reliant 8 months after leaving hospital. The other two hysterical subjects have also remitted; one is doing well in a domestic situation, and the other is looking forward to returning home.

Analysing our results we find that convulsion therapy picks out neither particular mental diseases nor individual symptoms, but influences a number of morbid reaction types. It seems to matter less in what mental disorders the morbid reaction states occur than how deeply rooted they are and how much dissociation accompanies them. Perhaps this may help to explain why stupor is more easily influenced than hebephrenia or simple schizophrenias, which are usually associated with more comprehensive dissociation. In the same way paraphrenic states without much affective or conduct change are especially intractable. Recurrent cases, whether schizophrenic or not, seldom show gross dissociation and therefore tend to do very well.

In nearly all cases abstraction from reality is broken down, in some early cases dramatically and completely, in others gradually and perhaps by stages, while in some chronic subjects only to a sufficient extent to produce a free outlet of previously hidden psychotic symptoms. Delusions and hallucinations are only eradicated when the schizoid personality and deranged affective state can be modified. When delusional symptoms have become almost a habit and there is little affective abnormality, cardiazol is of no value.

In depressive reactions, whatever their type, and in states of excitement and elation, the same response is seen. As the affective morbidity clears up, the psychotic ideas and behaviour evaporate. Similarly, hysterical symptoms, hypochondriacal ideas, anxiety features, etc., are only lost as a consequence of a change of outlook.

The heterogeneous nature of the conditions relieved by cardiazol fits, and particularly the rapid effect of the treatment upon some hysterical subjects, might be used to argue that convulsion therapy acts solely in virtue of its "psychological shock" effect. The resemblance, however, is purely superficial. Pure "shock" methods may be effective in removing prominent symptoms, but cannot influence the patient's whole outlook, and it is this change of outlook, well exemplified in my hysterical case of 11 years' duration, which is a striking feature of convulsion therapy. The influence of this form of treatment upon so many conditions of obviously biogenetic origin and upon some hysterical and anxiety states rather supports the view that hysterical

symptoms are manifestations of functional brain disturbance, and that psychological factors merely play a precipitating part in their production. Furthermore there is a considerable amount of evidence, much of it, it is true, deductive rather than factual, to suggest that hypoglycæmic and convulsion therapies act through biochemical or biophysical channels. It is of great importance to understand the mechanisms by which so many abnormal mental reactions can be influenced, and to this end further experimental work on the metabolic effects of such therapeutic methods as prolonged narcosis, carbon-dioxide stimulation, etc., as well as of induced hypoglycæmia and convulsions, is urgently needed. When these mechanisms are fully understood, it may well become possible to produce these beneficial changes more consistently and perhaps by more convenient means.