

# THE TREATMENT OF DEPRESSION WITH METHYLAMPHETAMINE

By

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IN earlier articles from 1939, the results of treatment with amphetamine preparations have been discussed. In this paper, a comparison of the results of treatment by means of electric convulsive therapy with those from methylamphetamine will be made.

The methods of comparison used will be:

- (1) Both methods used by the same physicians on different cases.
- (2) The same cases treated by both methods, in different attacks.
- (3) Types of depression treated by either method by numerous writers.

With the first method, diagnosis, and degree of depression and estimation of results will be fairly constant. With the second method, diagnosis of the type of depression is certain but estimation of degree and of results is less certain. With the third method, estimation of results and of degree of depression may vary from author to author but diagnosis of type of depression is certain as articles giving indefinite descriptions have not been used.

## 1. COMPARISON BY SAME PHYSICIANS

Comparisons of the two methods of treatment given by the same physicians have been published by Rudolf (1949) and by Monro and Conitzer (1950). The first reported that of cases of depression of all types outside mental hospitals and treated as out-patients or in-patients in a nursing home, 83·3 per cent. of 42 cases improved with oral methylamphetamine used up to three times before 1 p.m. and the same percentage improved of 30 cases treated with E.C.T. Monro and Conitzer (1950) reported an improvement-rate of 32·5 per cent. of 34 cases in a mental hospital treated with oral methylamphetamine used up to twice daily and 78·1 per cent. of 200 cases given E.C.T. These writers stated that with the first treatment, none showed marked improvement, 11·8 per cent. moderate improvement and 20·6 per cent. slight improvement. Of the series treated with E.C.T. 22·5 per cent. showed marked improvement, 55·6 per cent. moderate improvement and 10·0 per cent. slight improvement. Rudolf's similar results with both treatments were based on a series of cases probably containing less severe depressives than that of Monro and Conitzer. In addition, he used up to three doses of methylamphetamine daily, whereas Monro and Conitzer used only two. He used a maximum daily dosage varying from 1½ mg. to 60 mg. (Rudolf, 1955b) Monro and Conitzer using up to 30 mg. daily. It is clear that the intensity of treatment given by these workers was less than that given by the present writer and that possibly his cases were, on the average, less severe than were their patients.

## 2. COMPARISON OF SAME CASES TREATED BY BOTH METHODS

Elsewhere (Rudolf, 1955a) a summary has been given of 20 unselected cases each treated with E.C.T. or, by the author, with methylamphetamine in

different attacks of depression, totalling 58. Of 36 attacks treated with E.C.T. some improvement took place in 69·4 per cent. and of 22 attacks treated with methylamphetamine in 86·3 per cent. Much Improvement was seen in 32·1 per cent. of the attacks treated with E.C.T. and in 42·9 per cent. of those treated with methylamphetamine. Improvement took place in 35·7 per cent. and 42·9 per cent. respectively, and no improvement in 32·1 per cent. and 14·3 per cent. Some improvement was seen in different attacks with either E.C.T. or methylamphetamine in 14 cases, with E.C.T. but not with methylamphetamine in 1 case, with methylamphetamine but not with E.C.T. in 3 cases and with neither treatment in 2 cases. One case received 9 courses of treatment. In the first 3, he received 3, 4 and 4 electric shocks, showing Marked Improvement in the first and third attacks. He improved temporarily in the 4th attack with methylamphetamine, in the 5th attack markedly with 7 electric shocks, in the 6th with methylamphetamine, in the 7th with 7 electric shocks, in the 8th with methylamphetamine and in the 9th with 4 electric shocks. Other cases showed also that much improvement can occur with E.C.T. or methylamphetamine either before or following treatment of other attacks with the alternate method.

These cases were of the manic-depressive type and some improvement might have taken place if no treatment had been given, but as the improvements recorded occurred during the courses of treatment, only few would have been coincidental.

### 3. COMPARISON BY SUMMATION

Comparison can be made for all types of depression and for the same types separately, the cases being here grouped into the classes of depression described by Sargant and Slater (1951). The results can be divided into cases who were Much Improved, who were Improved and who showed no change.

As all authors do not give full details of diagnosis or results, the numbers in each series vary.

#### *A. All Depressions*

(a) Much Improved. Of 1,616 cases treated with E.C.T. and reported in 12 publications, 63·9 per cent. were much improved, whereas of 273 cases treated with methylamphetamine and reported in 3 articles, 33 per cent. were much improved.

(b) Improved. Of 1,321 cases treated with E.C.T. and reported in 8 papers, 30·4 per cent. were improved, but of 273 cases treated with methylamphetamine and reported in 3 articles, 43·6 per cent. were improved.

(c) Not Improved. Of 1,612 cases treated with E.C.T. and reported in 12 publications, 8·7 per cent. were unimproved but of 273 cases treated with methylamphetamine and reported in 3 papers, 23·4 per cent. were unimproved.

#### *B. Involutional Depression*

(a) Much Improved. Of 1,255 cases treated with E.C.T. and reported in 18 articles, 58·6 per cent. were in this class and of 33 treated with methylamphetamine only 30·3 per cent. from 1 article were much improved.

(b) Improved. From 11 papers, a total of 575 cases were collected, of whom 31·8 per cent. were improved by E.C.T. Of 33 from 1 article, treated with methylamphetamine, 60·6 per cent. fell into this class.

(c) Not Improved. From 14 articles, 1,030 gave 12 per cent. unimproved when treated with E.C.T., and of 33 cases from 1 article, 9·1 per cent. were unimproved when treated with methylamphetamine.

*C. Manic-depression*

(a) Much Improved. Of 938 cases, 57·1 per cent. showed much improvement with E.C.T. as reported in 9 articles, and 40·7 per cent. of 54 cases treated with methylamphetamine in 2 articles.

(b) Improved. The improved rates in 819 cases from 7 articles for E.C.T. were 35·3 per cent. and of 54 cases from 2 articles for methylamphetamine, 37 per cent.

(c) Not Improved. Of 893 cases from 8 articles, 9·9 per cent. were unimproved by E.C.T. and 22·2 per cent. by methylamphetamine of 54 cases from 2 articles.

*D. Reactive Depression*

(a) Much Improved. From 3 articles, 101 cases gave 34·7 per cent. much improvement with E.C.T., and from 2 articles, 45 cases gave 53·3 per cent. with methylamphetamine.

(b) Improved. In this class, the same 101 cases gave 43·6 per cent. with E.C.T. and the same 45 cases, 33·3 per cent. with methylamphetamine.

(c) Not Improved. Of 112 cases from 4 articles, 17·9 per cent. remained unimproved with E.C.T. and 13·3 per cent. of 45 cases from 2 articles with methylamphetamine.

*E. Depression with Anxiety*

(a) Much Improved. Of 56 cases from 3 articles 42·9 per cent. were much improved by E.C.T. and 33·3 per cent. of 39 cases from 1 article by methylamphetamine.

(b) Improved. Of the same cases, 50 per cent. were in the improved group after treatment with E.C.T. and 48·7 per cent. after treatment with methylamphetamine.

(c) Not Improved. Of these cases, 19·7 per cent. showed no improvement with E.C.T. and 17·9 per cent. with methylamphetamine.

*F. Depression with Hysteria*

(a) Much Improved. From 2 articles, 60 cases gave 48·3 per cent. much improved with E.C.T. From 1 article, 42·9 per cent. of 28 cases were much improved with methylamphetamine.

(b) Improved. Of 29 cases treated with E.C.T. and reported by one writer, 31 per cent. were in this class but of 28 cases reported by another writer, and treated with methylamphetamine, 53·6 per cent. were improved.

(c) Not Improved. Of 42 cases from 2 articles 21·4 per cent. showed no improvement with E.C.T., and of 28 cases, from 1 article, 3·6 per cent. were unimproved with methylamphetamine.

*G. Depression in Oligophrenia*

Of all types of depression in mental defectives of any grade, Much Improvement was reported in 29 per cent. of 14 cases from 1 article with E.C.T. and 21·1 per cent. of 19 cases from another article with methylamphetamine. The other two degrees of improvement were not reported for E.C.T.

## DISCUSSION

1. Two articles gave results of both treatments used on different cases by the same physicians. In one article the percentage of all degrees of improvement was the same for E.C.T. and methylamphetamine, in the other, where less of

the drug was used, the improvement rate was much higher with E.C.T. than with methylamphetamine.

2. Results of treatment of 20 cases who were treated with either E.C.T. or methylamphetamine in different attacks of depression showed that methylamphetamine gave the greatest total number of Much Improved results.

3. The study of summation of cases appears to show, on limited series, that patients who are Much Improved by treatment show a higher proportion with E.C.T. than with methylamphetamine amongst the involuntal depressives, and the depressives with anxiety. The reactive depressives show a higher proportion of Much Improved cases with methylamphetamine than with E.C.T. and the depressives with hysteria show equality in the Much Improved group. The proportion of the Much Improved amongst manic-depressives is not clear.

The proportion of patients who did not improve were approximately similar with both treatments in the involuntal, the reactive and the anxiety cases. A higher proportion of cases with hysteria showed no improvement with E.C.T. than with methylamphetamine, and the reverse held amongst the manic-depressives.

As a 3-point scale was used, the patients who were moderately or slightly improved were the remainder. The proportions of this group were greater amongst the involuntal cases and the hysterical cases with methylamphetamine than with E.C.T., and somewhat greater amongst the reactive depressives with E.C.T. than with methylamphetamine. The manic-depressives and the depressives with anxiety showed equal proportions of this type of improvement with either treatment.

A decision regarding which treatment should be used must depend upon many factors. Wayne (1955) stresses the personality of the physician, pointing out that unconscious constellations may produce the decision to use E.C.T. In view of the great differences amongst therapists regarding the necessity for the use of E.C.T., the frequency and the total number of treatments, this writer believes that a more standardized practice may be developed if the physicians understand their own unconscious relationships with the method. Wayne gives, as examples, (a) deep-seated inadequacy resulting in a secret desire to eliminate sick people, (b) over-compensation for this inferiority with the need to impress colleagues, or to have apparent power of life or death over patients, (c) punishment of the patient for his failure to improve rapidly, (d) assaulting the patient to neutralize tension in the physician who may feel assaulted or disturbed by his own lack of understanding, (e) unresolved rivalry feelings towards fathers or brothers may lead to desire to annihilate patients thought of as rivals, (f) revenge towards older women for archaic frustration at the mother's breast, (g) proof of strong masculinity towards younger women, (h) anxiety about his own sexual and aggressive impulses so that the physician uses a treatment in which he can remain psychologically aloof or even can withhold it entirely.

On a conscious level, the more timid, the more humane and the less dramatic physicians will be likely to choose methylamphetamine. The less humane, the lover of the dramatic and the reckless may lean towards E.C.T. These conscious tendencies must be ignored, the timid must become courageous and the lover of the dramatic must forgo his love. But, at the same time, his underlying unconscious motivations must be understood by the physician who may have the duty of advising or giving E.C.T.

Providing the risk of suicide is negligible, the more prudent course would appear to be the administration of methylamphetamine in adequate dosage (Rudolf, 1955a) first, followed by E.C.T. if Much Improvement is not ob-

tained. Although the danger of death or injury is reduced by the use of relaxants and other additions to E.C.T., some risk to the patient still persists. Under careful observation during treatment with methylamphetamine, no risk occurs, as the dose can be reduced or stopped immediately any undesired side-effect occurs. Habituation can occur, but not if the therapist remains in entire control of the treatment. An objection to trial of methylamphetamine is that the patient may suffer from depression, with its consequences on relatives and friends, for a greater period than if E.C.T. had been used initially. In most cases, no permanent harm results from this prolongation of the depression, whereas the patient runs a risk of permanent damage from E.C.T., such as, for example, chronic pain from healed fractures.

#### SUMMARY

1. Comparison was made according to types of depression of the results of treatment with E.C.T. and methylamphetamine.

2. Comparison was made with two groups of patients treated by the same physicians, of the same patients treated in different attacks with either method, and of the summed results published by numerous workers, both as regards mixed and separate types of depression.

3. With the first method, one publication reported similar percentages of improvements with either method. Another article gave considerably smaller proportions of improvements with methylamphetamine, the authors using a smaller dosage and probably, more severely affected cases. With the second method, a greater proportion of improvements took place with methylamphetamine than with E.C.T. With the third method, a higher proportion of Much Improved cases amongst all types of depression was found following E.C.T. than with methylamphetamine therapy. Of involuntional depressions, and of depressions with anxiety, a higher proportion of Much Improved was reported with E.C.T. than with methylamphetamine. Cases of depression with hysteria showed no difference between the results of the two treatments. Cases of reactive depression gave a Much Improved rate greater with methylamphetamine than with E.C.T.

4. In view of the differing results of treatment and of the unconscious constellations and the conscious preferences of the physicians influencing the choice of treatment, the suggestion is advanced that the more prudent course, provided safeguards are adequate, is to treat the depression, first, with methylamphetamine and later with E.C.T. should the results not be sufficiently good with the first method.

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