Brit. J. Psychiat. (1971), 119, 279–80

ABSTRACT

Affective Disturbance in Hypothyroidism

By V. K. JAIN

Since the classic report in 1888 by the Committee on Myxoedema of the Clinical Society of London, there has been a wide interest in the psychiatric aspects of hypothyroidism. Despite many reports which followed, Asher (who in 1949 coined the term 'myxoedematous madness') had this to say: 'Myxoedema is one of the most important, one of the least known and one of the most frequently missed causes of organic psychosis'. Most studies have been clinical descriptions with no correlation of the degree of affective disturbance with the severity of disease process.

Purpose of the Study

With recent advances in the techniques of investigation of thyroid function it is now possible to estimate with accuracy the degree of severity of hypothyroidism. It was decided to study all consecutive patients attending the Department of Nuclear Medicine of the University of Liverpool, which provides a regional diagnostic service.

Subjects and Procedure

The author personally examined all cases diagnosed as hypothyroid during the period April to December 1969, before and 4 to 6 weeks after treatment with thyroxine. The sample consisted of 30 patients. Seven were men and 23 women. In respect of age and sex the series does not differ from previously reported studies.

The examination consisted of a full psychiatric history using the Maudsley Hospital case-taking scheme (Slater and Roth, 1969). Objective measurements were made for anxiety, using the Hamilton Anxiety Rating Scale (Hamilton, 1959), and for depression, using the Beck Rating Scale (Beck *et al.*, 1961) and the Hamilton Depression Rating Scale (Hamilton, 1960).

On the basis of four-hourly ^{132}I uptake the patients were divided into three categories: severe for those whose uptake was less than 5 per cent, moderate for those between 5–10 per cent and mild for those between 10–15 per cent. Fifteen per cent was regarded as the lowest limit of normal for the purpose of this study.

Results

Anxiety. Ten patients were judged by clinical criteria to be anxious at the time of examination. Anxiety so judged had no relationship to the severity of the condition. The Hamilton Rating Scale scores ranged from 0 to 26. An analysis of variance of the anxiety scores of the three groups of patients grouped according to the criteria of severity of hypothyroidism, was carried out. The F ratio failed to reach significance, thus confirming the clinical impression that there is no relationship between anxiety and severity of hypothyroidism. The mean scores on the Hamilton Scale were for the mild group 6·81, for the moderate group 8·45, and for the severe group 4·00

Depression. Thirteen patients were judged clinically to be depressed. Depression was also assessed by the Beck and Hamilton Scales. As in the case of anxiety, there was no significant association between the Beck or the Hamilton scores and the severity of hypothyroidism. The F ratio failed to reach significant level in the analysis of variance in either case, being consistent with the clinical impression recorded above. The scores in the Beck Depression rating ranged from 0 to 52, with mean scores 10·09 for mild, 17·81 for moderate and 9·37 for severe groups. For the Hamilton Depression rating scales the range was 0 to 30, mean scores being 8·90, 12·36 and 6·25 respectively.

Product moment correlation coefficient between the two scales was $+ 0{\cdot}81$ ($p < {\cdot}001$).

First degree relatives

A detailed family history was obtained from all patients. There were 248 first degree relatives in all. The 17 non-depressed patients had 139 of these, of whom four had had treatment for a depressive illness in the past, as compared to 8 out of 109 relatives of the 13 depressed patients. This difference fails to reach statistical significance, though it shows the expected trend towards a higher incidence of affective disturbance in first degree relatives of depressed patients.

Response to treatment

All patients reported subjective improvement. On re-testing with the Hamilton and the Beck Depression

Rating Scales, however, the mean reduction of scores was 3·50 and 3·83 respectively, again bearing no relationship to the initial score. However, patients who were apparently successfully treated for their hypothyroidism still obtained high scores, i.e. scores above 10 by 8 patients on the Hamilton Depression rating scale, and scores above 10 by 9 patients on the Beck Scale. As regards anxiety, change of score was 2·06, and after treatment 4 patients still had scores above 10.

Discussion

Hypothyroidism is commonest in the second half of life—a period of increasing vulnerability to physical illness, social isolation, economic adversity and psychiatric breakdown. It can therefore be argued that the psychiatric symptoms may be a reaction of the personality to the primary disturbance, that is that the disease acts as a continuing source of stress to which the patient reacts adversely.

Two features of the present findings are of particular interest in relation to the connection between the psychiatric and physical symptoms. Firstly, there appears to be no relationship between severity of physical symptoms and severity of psychiatric symptoms. Secondly, even after successful treatment of the patient's physical condition abnormally high scores are obtained for anxiety and depression. This indicates the importance of supplementing physical treatment with psychiatric treatment when there is evidence of affective disturbance, and of not assuming that the patient's mental state will have a one to one correspondence with his physical state.

Summary

Thirty consecutive patients diagnosed as hypothyroid were examined before and after treatment with thyroxine. There was no significant correlation between the severity of affective disturbance and the disease process. Most improved subjectively after treatment, though the improvement was only marginal on objective psychiatric assessment. A higher incidence of affective disturbance was found in the first degree relatives of depressed patients, though this finding was not statistically significant.

References

Asher, R. (1949). 'Myxoedematous madness.' *British Medical Journal, ii*, 555–62.

Beck, A. T., Ward, C. H., Mendelson, M., Mock, J. and Erbaugh, J. (1961). 'An inventory for measuring depression.' *Archives of General Psychiatry*, **4**, 561–7.

Clinical Society of London: 'Report on myxoedema' (1888). *Transactions of Clinical Society of London*, 21 (Supplement). London: Longmans, Green and Co.

Hamilton, M. (1959). 'The assessment of anxiety states by rating.' *British Journal of Medical Psychology*, **32**, 50–5.

—— (1960). 'A rating scale for depression.' *Journal of Neurology, Neurosurgery and Psychiatry*, **23**, 56–62.

Slater, E. and Roth, M. (1969). *Clinical Psychiatry*, 3rd. Ed., London: Baillière, Tindall and Cassell.

Acknowledgements

The author wishes to thank Dr. T. M. D. Gimlette of the Department of Nuclear Medicine for allowing access to the results of investigations, and his secretary, Mrs. Irene Nickson, for help in tracing the patients to their respective hospitals. I am also indebted to Professor Alistair Munro for his help in the preparation of this paper, Dr. Philip Ley for constant encouragement and statistical advice, and Miss Ruth Hill who spent numerous hours in secretarial work, which made this study possible.

V. K. Jain, B.Sc., M.B., B.S., D.P.M., *Department of Psychiatry, The University of Liverpool; now Consultant Psychiatrist, Beorn Clinic, Barnsley District General Hospital, Barnsley, Yorkshire*

(*Received 28 October 1970*)