THE CORRELATES OF THE SYNDROME OF DEPRESSION IN SCHIZOPHRENIA

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A depressive syndrome as identified by subjectively volunteered dysphoria occurred in 17.4% of a group of 45 DSM-III-R schizophrenics, studied initially in a medication-free state. Among the 24 patients who could be followed up for six months, another 25% developed depressive symptoms while on treatment. Mild depressive syndromes occurred more frequently in older patients, in association with retained insight and lower negative symptoms scores. While depressive symptoms occurred both in the medicated and unmedicated state, depressed medicated schizophrenics differed from non-depressed medicated schizophrenics on variables of total medication dosage, presence of extrapyramidal symptoms and insight.

Key words: schizophrenia, depression, insight, extrapyramidal symptoms, negative symptoms

INTRODUCTION

Depressive features occurring in schizophrenia have long been documented (Bleuler, 1950; Johnson, 1981; Roy, 1983; Siris, 1991). The admixture has been noted in the prodromal stage, during the acute psychotic state (Johnson, 1981) and also in the post psychotic period (McGlashan, 1976). Etiological factors implicated have ranged from the psychological stress resulting from the experience of a chronic psychosis, to an iatrogenic (De Alarcon & Carey, 1969) or extrapyramidal syndrome related phenomenon (Van Puiten, 1978). It has also been reported to be difficult to distinguish from the negative symptoms of schizophrenia (Knights & Hirsch, 1981).

Overlooking a wide variability of methodology, a rough estimate of prevalence from previous studies would be between 25% and 50% (Shanfield et al, 1970; Mandel et al, 1982; Siris, 1991). The importance of the depressive syndrome in predicting suicide and chronicity in schizophrenia has been well recognized (Roy, 1986).

This study was conducted to estimate the prevalence of the depressive syndrome in a group of non-institutionalized, actively psychotic schizophrenic patients and to study the clinical and treatment correlates of depressive symptoms.

MATERIAL AND METHODS

All patients between eighteen and fifty years of age, who attended the Psychiatry clinic of a general hospital for a period of one year, who qualified for a DSM-III-R diagnosis of schizophrenia on the basis of clinical interview, and who had been off all antipsychotic medication for a minimum of one month previously, were studied.
For the purpose of analysis, the scores of insight were divided into two groups: a] present, if the score was one or more than one and b] absent if the score was zero. Insight during the treatment period was scored as present, if insight was gained in any of the months of follow-up. Insight before treatment was scored on the basis of the level of insight on the first visit alone.

Similarly, the global ratings of affective flattening, alogia; avolition and apathy, anhedonia, asociality and inattention were added up to give a total SANS score. Global rating on hallucinations, delusions, bizarre behavior and positive formal thought disorder were converted into their chlorpromazine equivalents and the average dose, over the total follow-up period were calculated.

Statistical evaluation was done using the t-test, Fishers's exact test of probability and chi-square test of significance wherever applicable.

RESULTS

The population under study consisted of 46 unmedicated patients with schizophrenia. Age ranged from 18 to 54 years, with a mean of 31.4 years. There was a slight male preponderance, with 26 males and 20 females. Of the subjects, 25 were married and 21 were unmarried; 14 were illiterate and 32 had completed 5 years or more of schooling. 29 were either unemployed or unskilled laborers. The duration of illness ranged from 0.6 to 20 years with a mean of 5 years. A family history of depression was present in four patients. The global score on SAPS ranged from 3 to 24 with a mean of 8.5 (SD 2.8) while that on SANS ranged from 0.24 with a mean of 3.7 (SD 5.4).

All patients were in the active stage of disease with an admixture of positive and negative symptoms. None had experienced triggering life stresses. There was a drop out rate of 48% after the first visit. Twenty four patients could be followed up for periods ranging from 1 to 10 months.

DEPRESSIVE SYMPTOMS

a) Prevalence: Eight out of forty six patients (17.4%) were depressed in the unmedicated state. Among the 24 patients who were available for follow-up 6 (25%) developed depressive symptoms anew while on medication.

| HDRS | 1 | 2 | 3 | 7 | 8 | 9 | 10 | 16 | 22 | 23 | 24 | Total number of items scored by each patient | Total score on all 11 items |
|------|---|---|---|---|---|---|----|----|----|----|----|---------------------------------------------|--------------------------|
| UNMEDICATED PATIENTS | Pt. No.1 | 2 | 0 | 2 | 4 | 2 | 0 | 3 | 1 | 1 | 2 | 0 | 8 | 17 |
| | Pt. No. 2 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| | Pt. No. 3 | 3 | 1 | 0 | 2 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 4 | 7 |
| | Pt. No. 4 | 4 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 |
| | Pt. No. 5 | 5 | 2 | 0 | 2 | 4 | 2 | 0 | 3 | 0 | 0 | 0 | 5 | 13 |
| | Pt. No. 6 | 6 | 1 | 0 | 1 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 3 | 9 |
| | Pt. No. 7 | 7 | 1 | 0 | 2 | 4 | 0 | 2 | 2 | 0 | 0 | 0 | 5 | 11 |
| | Pt. No. 8 | 8 | 2 | 4 | 0 | 3 | 0 | 4 | 0 | 1 | 0 | 0 | 5 | 14 |
| Total no. of patients with each item | 8 | 1 | 5 | 6 | 4 | 2 | 3 | 1 | 2 | 1 | 1 |
| MEDICATED PATIENTS | Pt. No. 9 | 2 | 0 | 3 | 4 | 0 | 2 | 3 | 0 | 1 | 1 | 0 | 7 | 16 |
| | Pt. No. 10 | 10 | 2 | 0 | 1 | 4 | 0 | 0 | 1 | 0 | 0 | 0 | 4 | 8 |
| | Pt. No. 11 | 11 | 3 | 0 | 1 | 3 | 1 | 1 | 0 | 0 | 0 | 0 | 4 | 14 |
| | Pt. No. 12 | 12 | 3 | 4 | 0 | 3 | 0 | 2 | 0 | 0 | 2 | 0 | 6 | 17 |
| | Pt. No. 13 | 13 | 3 | 0 | 2 | 2 | 0 | 0 | 3 | 1 | 0 | 1 | 0 | 6 | 12 |
| | Pt. No. 14 | 14 | 2 | 0 | 4 | 4 | 2 | 1 | 2 | 0 | 0 | 0 | 7 | 16 |
| Total no. of patients with each item | 6 | 1 | 5 | 6 | 2 | 4 | 5 | 1 | 3 | 4 | 1 |
b) Intensity and quality of depression: The intensity of the depressive syndrome was not pronounced, as reflected by the fact that the total HDRS score on eleven items ranged between 1 and 17 with a mean of 11 out of a possible total of 42. The maximum score on item one of HDRS i.e. depressed mood, was 3 (moderate level).

Table 1 shows the scores on each of the chosen items on the HDRS, for each of 14 depressed patients. The items which received a maximum score most frequently is ‘loss of work interest’. Feelings of hopelessness, worthlessness and helplessness have rarely been prominent. Severe suicidal ruminations were present in only one patient. Diurnal variation of symptoms was a rare feature. No patient scored all eleven items present.

Perusal of the HDRS scores of all 14 depressed patients reveals very little scatter between score on individual patients. It is therefore unlikely that there is a difference in the quality or intensity of depression in the medicated versus the unmedicated state.

COMPARISON OF DEPRESSED AND NON-DEPRESSED SCHIZOPHRENICS

a) Demographic variables: Except for significantly greater number of older patients in the depressed category (Chi square 0.05), the groups did not differ on demographic variables.

b) Clinical Variables: Depressed and non-depressed patients did not differ in chronicity of illness, frequency of depressed relatives or magnitude of positive symptoms. However, the depressed patients appeared to show less negative symptomatology than the non-depressed patients. In other words, negative symptoms were distinguishable from depression (Table 2).

Depression and insight were closely associated, both in those depressed patients who were on treatment as well as in those in the unmedicated state. Whereas in depressed unmedicated patients 50% of patient had insight, in non-depressed unmedicated patients none had insight. 83% of the depressed medicated patients and 41.3% of non-depressed medicated patients had insight. Since the presence of any degree of insight amounted to a positive score, the number of patients who count as having retained insight could have become high. However, in view of theories linking depression in schizophrenia with a realization of the illness, the preponderance of patients with insight in the depressed category cannot be overlooked.

c) Extrapyramidal symptoms, medication and depression: Among patients who received treatment, extrapyramidal symptoms were found in 50% of those who developed depression, and only in 16% of those who were not depressed. Antipsychotic medication in a dose of 600 mg. of chlorpromazine equivalents or more per day was being prescribed in 5 out of 6 depressed patients, but only in two out of twelve in the non-depressed category.

Table 3 shows that both the frequency of administration of antiparkinsonian medication as well as the average dose of medication given were greater in the depressed patients. Propranolol, used for control of akathisia has been given only to the depressed category. In all cases it was started after the development of depression. No patient had been put on antidepressants.

d) Attempted suicide: In three out of fourteen depressed patients, a history of attempted suicide was elicited, whereas none of the non-depressed category had done so.
DEPRESSION IN SCHIZOPHRENIA

Table 3
Average medication (milligrams per day) for extrapyramidal symptoms in depressed and non-depressed schizophrenic patients

| Patient No. | Procyclidine | Trihexyphenidyl | Propranolol | Patient No. | Procyclidine | Trihexyphenidyl | Propranolol |
|-------------|--------------|----------------|-------------|-------------|--------------|----------------|-------------|
| 1           | 5            | -              | -           | 1           | 0            | 0              | 0           |
| 2           | -            | 6              | 50          | 2           | 2.5          | 0              | 0           |
| 3           | -            | 4              | 20          | 3           | 7.5          | 0              | 0           |
| 4           | -            | 6              | 40          | 4           | 0            | 0              | 0           |
| 5           | 15           | -              | -           | 5           | 0            | 4              | 0           |
| 6           | 12           | -              | -           | 6           | 0            | 0              | 0           |

Average dose of

| Depressed group | Procyclidine or Trihexyphenidyl | Propranolol |
|-----------------|---------------------------------|-------------|
| 10.6 mg         | 5.3 mg                          | 36.7 mg     |
| 5.0 mg          | 4 mg                            | 0 mg        |

DISCUSSION

Depressive symptoms have been studied in a population of schizophrenic patients diagnosed by operationally defined criteria and uncontaminated by schizoaffective disorder or psychotic depression. Rarely has it been highlighted that in unmedicated schizophrenics, the occurrence of depressive features is in the order of 17.4%. In the study by Raju (1986), 34% of first contact schizophrenics had depressive symptoms. This higher rate could be due to the fact that, for diagnosing depression, either "one or more distinct period of dysphoric mood" or "pervasive loss of interest or pleasure" were sufficient. Since the second item may be present purely as part of the negative symptoms of schizophrenia, it is possible that there may have been some degree of overlap.

The occurrence of depressive features in unmedicated schizophrenia suggests causes other than antipsychotic induced syndromes or the "revealed depression" of Knights and Hirsch (1981). Since the insight is fairly prominently associated with depressive symptoms both in the medicated as well as unmedicated state, the "reactive" etiology remains a strong possibility. Tentative support could also be drawn for the concept of akinetic depression, given the association between high dose antipsychotics, extrapyramidal syndromes and the occurrence of depression in schizophrenia. The inference that there seems to be more than one cause for the depression in the population under study is amply supported by the fact that one group of patients developed depression in the unmedicated state and became free from it with treatment, and yet another group developed it while on treatment. The precise degree to which each of the above-mentioned factors contribute to the causation of depression in schizophrenia can be determined only by studying a larger population with a longer follow-up.

A striking feature which stands out in this study is the mild nature of depression. This is better appreciated by comparing the frequency of occurrence of HDRS item chosen for study with the findings from a study by Hamilton (1989) using the HDRS on a group of melancholics (Table 4).

Table 4
Frequency of HDRS symptoms

| HDRS Item No | Items                     | Depressed Schizophrenics | Melancholics* |
|--------------|---------------------------|--------------------------|---------------|
| 1            | Depressed mood            | 14                       | 100           | 100           |
| 2            | Guilt                     | 3                        | 21            | 72.1          |
| 3            | Suicidal thoughts         | 8                        | 56            | 81.2          |
| 7            | Work and interests        | 13                       | 91            | 97.4          |
| 8            | Retardation               | 8                        | 56            | 68.1          |
| 9            | Agitation                 | 7                        | 50            | 47.9          |
| 10           | Anxiety (Psychic)         | 8                        | 56            | 99.2          |
| 18           | Diurnal variation         | 2                        | 14            | 63.4          |
|              | Worse mornings            |                          |               |               |
|              | Worse evenings            |                          |               |               |
| 22           | Helplessness              | 5                        | 35            | NA            |
| 23           | Hopelessness              | 6                        | 42            | NA            |
| 24           | Worthlessness             | 3                        | 21            | NA            |

* Percent score is the average of the score on HDRS of male and female melancholics (Hamilton, 1989); NA = not available.
Therefore, when schizoaffective disorder and psychotic depression are excluded by applying strict criteria, the depressive symptoms that occur in schizophrenia are mild and of heterogenous etiology.

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