PSYCHOSOCIAL CORRELATES OF SUBSYNDROMAL SYMPTOMS AND FUNCTIONING OF BIPOLAR PATIENTS STABILIZED ON PROPHYLACTIC LITHIUM

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ABSTRACT

Sixty-eight bipolar patients in remission on lithium prophylaxis with adequate serum lithium levels were cross-sectionally studied to assess the relation of certain psychosocial variables (life events, social support and daily hassles) with psychopathology and psychosocial functioning. The daily hassles and number of life events were found to have significant positive correlation with Hamilton Depression Rating Scale (HDRS) scores while perceived social support score had significant negative correlation with general psychopathology score. In stepwise multiple regression analyses, psychosocial variables taken together explained 7% - 23% of variance in psychopathology and global functioning of these patients. We conclude that psychosocial variables may have a modest but significant relation with the clinical and psychosocial functioning of bipolar patients stabilized on lithium prophylaxis.

Keywords: Bipolar disorder, lithium, stressful events, social support, psychopathology

Bipolar affective disorder is a common major psychiatric disorder whose course is marked by recurrences. Even in interepisodic period, patients suffer from subsyndromal symptoms. Apart from intense personal suffering, the illness causes considerable psychosocial impairment including disruption in socio-occupational area, role stress and relationship difficulties and an increased rate of morbidity, accidents and mortality (Goldberg et al., 1995).

Despite the introduction of newer prophylactic agents, lithium has remained the mainstay of prophylaxis in this disorder (Schou,1997). However, even in patients stabilized on lithium, a less-than-ideal clinical and psychosocial outcome is by no means uncommon (Gitlin et al.,1995). In naturalistic setting, performance of lithium is even more limited (Coryell et al.,1989; Keller et al.,1993; Winokur et al.,1993).

The modest effectiveness of lithium in actual clinical situation is attributed to noncompliance, inadequate lithium levels (Solomon et al.,1996), and various clinical factors such as the severity of illness and comorbidity. More importantly, even in patients stabilized on prophylactic lithium with acceptable serum lithium levels, a significant proportion have relapse, subsyndromal symptoms and social dysfunction (Keller et al.,1992). This is the group of patients that merits further study. Psychosocial factors may play an important role in this latter group.

Attention has only recently been focussed on the psychosocial determinants of poor response in lithium treated patients. Though few in number, studies have already documented the importance of stressors, social support (O'Connell et al.,1985; Stefos et al.,1996; Kulhara and Chopra,1996), and family environment (Raman and Bebbington,1995). In the light of the high
prevalence of bipolar disorders and the significant residual clinical and psychosocial morbidity despite its apparently successful prophylaxis with lithium, there is clearly a need to elucidate factors which determine clinical and psychosocial outcome in patients maintained on lithium prophylaxis, so as to enable interventions aimed at modifying salient variables. The present study was designed to examine the role of psychosocial variables (life events, social support and daily hassles) in influencing clinical status and psychosocial functioning of bipolar patients stabilized on prophylactic lithium.

MATERIAL AND METHOD

A purposive sample of 76 patients was selected from the patient population attending the lithium clinic of the Department of Psychiatry, PGIMER, Chandigarh between September, 1997 and January, 1998 after screening 220 patients. Inclusion criteria included patients of either sex within age range of 20-60 years with ICD-10 diagnosis (WHO, 1992) of bipolar affective disorder in remission (code F 31.7), on lithium prophylaxis for a minimum period of one year with serum lithium stabilized within the prophylactic range of 0.5-1 mEq/L. Also it required that patients should have been stable and/or maintaining well, which was operationally defined as patients who had not shown exacerbation of symptoms and whose medications had not been increased by 50% over the last one month.

Exclusion criteria were - patient on any mood stabilizer other than lithium (either alone or in combination), on antipsychotics (> mean daily dose 200 mg chlorpromazine equivalents) or antidepressants (> 75 mg imipramine equivalents, or > 20 mg fluoxetine), currently in a major episode (either mania, depression or mixed), suffering from major physical illnesses particularly thyroid and renal diseases; or organic brain diseases, mental retardation: schizoaffective or schizophrenic episodes in the course of illness and substance dependence/abuse.

The assessments were done using various scales including Brief Psychiatric Rating Scale (BPRS) (Overall and Gorham, 1962), Global Assessment of Functioning Scale (GAF) (Endicott et al., 1976), Hamilton Depression Rating Scale (HDRS) (Hamilton, 1960), Bech-Rafaelsen Mania Scale (BRMS) (Bech et al., 1979), Presumptive Stressful Life Events Scale (PSLES) (Singh et al., 1984), Social Support Questionnaire (SSQ) (Nehra and Kulhara, 1987) and Daily Hassles Scale (DHS) (Kanner et al., 1981). Of these, the first four scales measure psychopathology (BPRS, HDRS, BRMS) and functioning (GAF), these were treated as the dependent variables. The last three (PSLES, SSQ and DHS) measure the independent psychosocial variables. Relation between these two sets of variables was studied by using Spearman's rank-order correlation. Further, multivariate statistics in the form of stepwise multiple regression was applied as conditions for its applications were met. Written informed consent was obtained from each patient upon inclusion into the study.

RESULTS

Socio-demographic characteristics of the sample were as follows: majority of patients (85%) were male, married (76%), with at least 8 years of formal education (82%), Hindu in religion (60%) and employed (74%). Fifty four percent lived in joint/extended families. Majority was from urban background. The mean age was 38 years (SD 10.50, range 20 to 60 years).

The mean number of episodes experienced by the sample was seven (manic/hypomanic episodes outnumbering depressive episodes). The average duration of illness was 13 years (range 2-33 years). The mean serum lithium level was 0.67 mEq/L and the average dose was 950 mg/day. Majority of patients (76%) was never hospitalized in the course of the illness. About 10% required single hospital admission and only 13% had multiple hospitalizations.

Table 1 shows the distribution of the clinical and psychosocial variables.

The most common life event reported by
the patients was illness of family member. Majority experienced either one life event (n=17) or two life events (n=17). Thirteen patients experienced greater than three life events, while twelve patients did not experience any life event in the preceding year of their lives. The mean daily hassles score was 22.24 (SD=15.64). The daily hassles commonly noted were: misplacing or losing things, concerns about health in general, rising prices of common goods, noise and pollution.

Table 2 shows the relationship of the studied psychosocial factors (life events, daily hassles and social support) with variables measuring psychopathology and psychosocial functioning.

Table 2

| Variables | Mean  | SD  | Range |
|-----------|-------|-----|-------|
| BPRS      | 18.37 | 1.12| 18-24 |
| HDRS      | 0.66  | 1.32| 0-7   |
| BRMS      | 0.13  | 0.62| 0-4   |
| GAF       | 87.44 | 7.00| 60-100|
| LE (n)    | 2.19  | 1.98| 0-10  |
| LE (ss)   | 100.82| 91.8| 0-434 |
| DH        | 22.24 | 15.64| 2-75  |
| SSQ       | 51.56 | 7.42| 26-65 |

BPRS: Brief psychiatric rating scale; HDRS: Hamilton depression rating scale; BRMS: Bech-Rafaelsen mania rating scale; GAF: Global assessment of functioning; LE (n): Number of life events in the preceding one year; LE (ss): Total stress score (based on life events) in the preceding one year; DH: Total daily hassles score the preceding six months; SSQ: Social support questionnaire

The daily hassles score had a significant positive correlation with both BPRS and HDRS score. Similarly, both number of life events and the total stress score had a significant positive correlation with HDRS score. The social support score had significant negative correlation with BPRS score. None of the psychosocial variables had any significant correlation with BMRS scores or global functioning scores.

Finally, stepwise multiple regression analysis was done to find out the relative contribution of the psychosocial variables (life events, social support and daily hassles) in explaining the variance in the scores of dependent variables i.e., clinical and psychosocial functioning (table 3).

Table 3

| Dependent variable | Independent variable | Multiple R | R square | % variance explained |
|--------------------|----------------------|------------|----------|---------------------|
| I. BPRS            | DH                   | 0.2697     | 0.0728   | 7.28                |
|                    | SSQ                  | 0.3353     | 0.1124   | 3.96                |
|                    | LE (ss)              | 0.3487     | 0.1216   | 2.34                |
|                    | Total                | 0.4520     | 0.2043   | 20.43               |
| II. HDRS           | DH                   | 0.4520     | 0.2043   | 20.43               |
|                    | SSQ                  | 0.4772     | 0.2277   | 2.34                |
|                    | LE (ss)              | 0.4795     | 0.2299   | 0.22                |
|                    | Total                | 0.4795     | 0.2299   | 2.34                |
| III. GAF           | DH                   | 0.2827     | 0.0799   | 5.37                |
|                    | SSQ                  | 0.3027     | 0.0904   | 2.65                |
|                    | LE (ss)              | 0.3019     | 0.0912   | 0.08                |
|                    | Total                | 0.4870     | 0.1927   | 7.50                |

BPRS: Brief psychiatric rating scale; HDRS: Hamilton depression rating scale; BRMS: Bech-Rafaelsen mania rating scale; GAF: Global assessment of functioning; LE (n): Number of life events in the preceding one year; LE (ss): Total stress score (based on life events) in the preceding one year; DH: Total daily hassles score the preceding six months; SSQ: Social support questionnaire

Values indicate Spearman's rank order correlation coefficients ($r_s$ values); figures in parenthesis indicate exact p-value.
Depression rating scale; BRMS: Bech-Rafaelsen mania rating scale; GAF: Global assessment of functioning; LE (n): Number of life events in the preceding one year; LE (ss): L Total stress score (based on life events) in the preceding one year; DH: Total daily hassles score the preceding six months; SSQ: Social support questionnaire.

Taking BPRS scores as dependent variable, among the independent variables, daily hassles explained maximum variance of 7.28% out of the total contribution of 11.29%. Taking HDRS as dependent variable, once again daily hassles score was able to explain about 20% variance out of 22.99% (total variance explained). Taking global functioning as dependent variable, daily hassles score and number of life events were able to explain maximum variance (80%) of all the four variables (daily hassles, number of life events, total stress score and perceived social support scores), though the total variance explained by these variables taken together was low (7.50%).

**Discussion**

Several studies indicate that the psychosocial stressors affect timing of onset and relapse in patients with bipolar disorder (Ellicott et al., 1990). The major question asked in our study was: how do various psychosocial factors relate to the clinical and functional status of bipolar patients stabilized on lithium prophylaxis? In this regard, whereas life events and social support have been studied in the past (Ambelas, 1979; Bidzinska, 1984; Lakhera et al., 1995; Kulhara et al., 1999) role of daily hassles has not been studied earlier.

The most common life event experienced by patients in our study was illness in a family member. Common daily hassles reported by these patients were: misplacing or losing things, concerns about health in general, rising prices of common goods, noise, pollution and traffic. Literature reveals frequently reported hassles to be concerns about weight, health of a family member, rising prices of common goods, home maintenance, misplacing or losing things and too many things to do (Kanner et al., 1981). Some of these perceptions can be related to depression but depression scores were low in general. Misplacing or losing things being the first item in daily hassles scale could have evoked biased responses. However, this did not appear to be related to cognitive dysfunction as there was no subjective complaints or any evidence of cognitive dysfunction during clinical assessments.

Coming to the bivariate analysis of the relationship between psychosocial variables and the psychopathology scores, three findings merit attention. First, regarding life events, there was significant positive correlation between the number of life events experienced in the one-year period prior to the study intake and the depression scores as measured by HDRS. The total stress scores (calculated from the life events) were also significantly positively correlated with HDRS scores. Life event scores, however, did not have any significant correlation with any of the other dependent variables such as BPRS or BRMS. This suggests that life events may be important correlates of specifically depressive subsyndromal symptoms in the lithium-stabilized group of patients studied by us.

Second, regarding daily hassles, it emerged that they were significantly positively correlated not only with HDRS scores but also with BPRS scores, suggesting that daily hassles may be important correlates of general psychopathology as well as specific depressive symptoms in these patients. That way the daily hassles assume clinical significance.

Third, the perceived social support scores were significantly negatively correlated only with BPRS scores but not with HDRS or other dependent variables. This suggests that (again, in our lithium-stabilized bipolar patients) lower the social support, higher the general psychopathology, without any specific connotation for depressive symptoms as such.

Taken together, what do these findings imply? It is well documented by past research that even among bipolar patients maintained on the standard range of lithium, a substantive proportion (40%-70%) have subsyndromal
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symptoms (Keller et al., 1992). These subsyndromal symptoms are clinically important since they can herald major syndromal relapses (Keller et al., 1992). What is not well known is whether independent psychosocial variables such as life events, chronic minor irritants of daily life (i.e., daily hassles) and social support are associated with these subsyndromal symptoms. Our findings show that they do, though different psychosocial variables seem to be differently correlated with the dependent variables.

It is interesting to note that GAF scores (i.e., functioning) did not significantly correlate with any of the psychosocial factors studied. Intuition would have dictated otherwise. But it must be mentioned that overall the patients were high-functioning (mean GAF score 87), hence psychosocial variables perhaps did not affect the GAF scores much.

After demonstrating that some of the psychosocial variables (independent) were significant correlates of some of the psychopathology variables (dependent), the logical next step was to quantify the strength of these associations. This was done by a set of multiple regression analyses, which revealed that daily hassles score maximally contributed as an independent variable explaining the maximum percentage variance in clinical and psychosocial functioning. Taken together, the psychosocial variables explained 7.5% of the variance of GAF scores, 11.29% of that of BPRS scores, and 22.9% of that of HDRS scores. Thus their contribution is seen to be modest in explaining the variance in psychopathology and functioning of lithium-stabilized bipolar patients.

In a long term follow up study of bipolar disorder patients attending lithium clinic carried out at the same centre (Kulhara et al., 1999), however not on the same cohort, it was found that in comparison to good responders, partial and poor responders had significantly more psychosocial stress. The number of relapses had negative correlation with social support. Both stressful life events and social support emerged as significant correlates of lithium response. The current findings are in line with these previous results.

Daily hassles and subjective stress relationship has been studied in schizophrenics and daily hassles were found to be more highly related than major life events to reported subjective stress (Norman and Malla, 1991). However, to the best of our knowledge it has not been studied in relationship with mood disorders. For the first time we attempted to study the effect of psychosocial variables of daily hassles in relation to functioning of bipolar affective disorder patients stabilized on lithium. It emerged as the most significant contributing psychosocial variable, and the results seem to be encouraging enough for warranting further detailed study in this area.

Limitations of our study include cross-sectional data, a modest sample size, absence of a comparative group, and use of a questionnaire. As the patient population was from a tertiary care facility, the findings may not be representative of individuals with bipolar disorder receiving treatment in the larger community. The effect of several confounding variables like serum lithium levels and drugs compliance were taken care of by the study design. Our study included a relatively stable group (not in an episode). As a result retrospective bias, had it been present, remained negligible. Also, this way it permitted us to study subsyndromal symptoms as well.

Hence, the important message emerging from the study is that even in such apparently stable patients, there are mild variations in clinical (subsyndromal) symptomatology and psychosocial functioning, and that various psychosocial factors such as daily hassles, social support and life events do seem to show association with the same. This knowledge would be definitely helpful in order to sensitize the clinicians to be alert enough in picking up psychosocial dysfunctions and the factors contributing and attempt to modify them. Further studies are needed in order to evaluate how specific psychosocial strategies may address these psychosocial impairments and contribute to prevention of minor relapses or fluctuations in bipolar patients stabilized on lithium prophylaxis.
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