Assertive Community Treatment and Medication Compliance in the Homeless Mentally Ill

Lisa Dixon, M.D., M.P.H., Peter Weiden, M.D., Michael Torres, M.D., and Anthony Lehman, M.D., M.S.P.H.

Objective: This study describes medication compliance rates among a group of homeless mentally ill subjects who received assertive community treatment. Method: The medication compliance of 77 homeless persons who had been referred to an assertive community treatment program was prospectively evaluated at baseline and quarterly for 1 year. Results: A minority of the cohort (29%) was compliant at entry into the assertive community treatment program. Compliance significantly increased after 3 months (57%) and remained high through the year. Medication compliance was associated with fewer psychiatric symptoms but not with better housing placements or fewer days in the hospital. Conclusions: Medication compliance rates among a cohort of homeless persons with severe mental illness were markedly higher after they entered a program of assertive community treatment.

(Am J Psychiatry 1997; 154:1302–1304)

Medication noncompliance in patients with schizophrenia represents a major barrier to effective treatment. Noncompliance rates are estimated to be 50% per year after an acute episode resolves. Direct hospital costs from noncompliance are at least $800 million annually (1). Reasons for noncompliance include distress from medication side effects, lack of perceived benefit of medication, stigma of mental illness, or environmental factors such as lack of supervision or continuity of care (2). One probable environmental risk factor for noncompliance is homelessness, but the extent to which homelessness contributes to noncompliance and vice versa is unknown.

Little is known about the rates of medication noncompliance among homeless persons. We studied the course of medication compliance in a homeless mentally ill population who voluntarily received treatment from a clinical team that followed an assertive community treatment program model. Previous studies of this treatment model in domiciled populations have shown inconsistent effects of assertive community treatment on medication compliance (3, 4).

The study objectives were to 1) describe the medication compliance patterns of a cohort of homeless mentally ill persons who received assertive community treatment services; 2) determine if compliance status was associated with diagnosis, age, gender, or race; and 3) investigate the association between compliance and key assertive community treatment outcomes, including clinical symptoms, housing, and hospitalization.

METHOD

The assertive community treatment program was the experimental arm of a randomized trial that tested the efficacy of this approach in the treatment of homeless adults with mental illness (5). Eligible subjects were homeless at baseline, had a severe and persistent mental illness, and were between 18 and 64 years of age. After complete description of the project, all subjects gave written informed consent. The assertive community treatment program received 77 referrals: 28 (36%) from psychiatric hospitals and 49 (64%) from the community (e.g., soup kitchens, missions).

Program psychiatrists rated the subjects' baseline and quarterly compliance with antipsychotic, antidepressant, and mood stabilizer medications; both frequency of missed doses and maximum period of consecutive missed doses were considered. Psychiatrists solicited information from face-to-face patient contacts, clinicians, family, and community supports as well as by blood levels and pill counts. At baseline, hospital records and previous providers were routinely consulted. Forty subjects (52%) were not receiving any treatment at baseline.

If the patient, either at baseline or during the quarterly follow-up assessments, refused a psychotropic medication that the psychiatrist thought would be of benefit or missed more than 1 consecutive week of medication, that patient was considered noncompliant (6). If any data source suggested noncompliance, the subject was rated as noncompliant. A small group of subjects were judged to not need medication and were excluded from analyses (figure 1).

Clinical diagnoses, housing status, and days in the hospital were assessed by an independent research team that was associated with

Presented in part at the 148th annual meeting of the American Psychiatric Association, Miami, May 20–25, 1995. Received Aug. 12, 1996; revision received Feb. 6, 1997; accepted April 11, 1997. From the Department of Psychiatry, University of Maryland at Baltimore. Address reprint requests to Dr. Dixon, Department of Psychiatry, University of Maryland at Baltimore, Medical School Teaching Facility, Rm. 300, 685 West Redwood St., Baltimore, MD 21201; ldixon@umabnet.ab.umd.edu (e-mail).

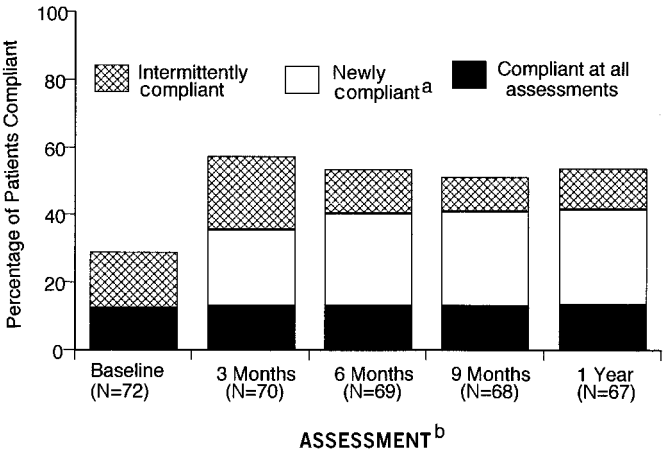
Supported by NIMH grants MH-48070 from the Center for Mental Health Services and MH-02150.

the parent study. All subjects were assessed with the Structured Clinical Interview for DSM-III-R (7) at baseline and were contacted monthly to assess housing and service utilization. Psychiatrists rated the subjects' baseline and quarterly psychiatric symptoms with the Brief Psychiatric Rating Scale (BPRS) (8).

McNemar's test was used to assess within-subject changes in compliance at sequential time points. Demographic and diagnostic characteristics of subjects who were compliant and noncompliant at baseline were compared by using two-tailed t tests and chi-square analyses. The cross-sectional association of compliance and concurrent symptoms was assessed at baseline, after 3 months, and after 1 year. Subjects who were compliant at baseline and after 1 year were each compared to the corresponding noncompliant group on cumulative 1-year hospital days and housing outcomes. A small group of subjects left the program during each quarter, which resulted in a subgroup of 55 subjects who received 1 year of assertive community treatment. All subjects who left the program were considered to be noncompliant at subsequent time points.

The 77 study subjects were a mean of 40.9 years old (SD= 10.0). The majority were men (68%, N=52), African American (62%, N=48), and referred from the street (64%, N=49). Almost half (43%, N=33) had been homeless for more than 5 years. Most had been diagnosed with schizophrenia (61%, N= 47), and the remainder had a major affective disorder (25%, N=19) or a primary substance use disorder (14%, N=11); 73% (N=56) had a lifetime substance use disorder diagnosis.

FIGURE 1. Course and Patterns of Medication Compliance in a Group of Homeless Mentally Ill Subjects Who Received Assertive Community Treatment



[a]Subjects were originally noncompliant, became compliant after 3 or 6 months, and remained compliant for the rest of the year.

[b]Excludes subjects who did not need medication: at baseline, N=3; after 3 months, N=5; after 6 months, N=6; after 9 months, N=7; and after 1 year, N=8. Also excludes two subjects who immediately after referral were unable to continue for administrative reasons.

RESULTS

Only 29% (N=21 of 72) of the subjects were compliant at initial referral. The compliance rate significantly increased to 57% (N=40 of 70) after 3 months (χ^2=14.7, df=1, p<0.005). At each subsequent evaluation point, the majority of subjects remained compliant. Figure 1 shows the longitudinal course and patterns of medication compliance.

Compliance status was not associated with diagnosis, demographic factors, or days spent in the hospital, jail, stable housing, or on the streets. However, compliant subjects had fewer symptoms. Compliance was associated with lower total scores on the BPRS at baseline (compliant subjects: mean=34.6, SD=9.2; noncompliant subjects: mean=44.0, SD=11.5 [t=3.24, df=66, p< 0.002]), after 3 months (compliant subjects: mean= 33.2, SD=12.4; noncompliant subjects: mean=41.5, SD=12.4 [t=2.43, df=57, p<0.02]), and after 1 year (compliant subjects: mean=33.5, SD=10.3; noncompliant subjects: mean=44.0, SD=13.7 [t=2.61, df=37, p<0.02]). Compliance was also associated with lower scores on the BPRS psychotic symptom subscale at baseline (compliant subjects: mean=8.1, SD=4.4; noncompliant subjects: mean=11.6, SD=4.8 [t=2.77, df= 67, p<0.01]) and after 1 year (compliant subjects: mean= 7.3, SD=3.4; noncompliant subjects: mean=12.8, SD=5.8 [t=3.70, df=47, p<0.0001]).

DISCUSSION

This prospective study suggests that assertive community treatment intervention rapidly improves medication compliance rates among homeless persons. Medication compliance in this study group, which started treatment with high rates of medication noncompliance, doubled within 3 months. We speculate that outreach, support, and individualized comprehensive services can substantially enhance cooperation and collaboration with medication efforts among homeless mentally ill persons. Of note is that treatment was voluntary and that medication compliance was not required to obtain housing. However, conclusions must be tentative in the absence of medication compliance assessments in a control group.

Medication compliance was associated with fewer psychiatric symptoms but not with days in permanent housing, jail, or the hospital. This suggests that other factors besides medication compliance may account for observed improvements in housing and rehospitalization (5). More work is necessary to understand the link among medication compliance, outcome, and psychiatric services for homeless persons with mental illness.

In spite of the improvements observed in medication compliance, approximately one-third of the subjects were noncompliant at any given time point. Thus, although medication compliance was enhanced, episodic noncompliance remained common, which underscores the need for ongoing efforts to promote collaboration and cooperation with medication treatment in this population.

REFERENCES

1. Weiden PJ, Olfson M: Cost of relapse in schizophrenia. Schizophr Bull 1995; 21:419–429
2. Weiden PJ, Rapkin B, Mott T, Zygmunt A, Goldman D, Frances

A: Rating of medication influences (ROMI) scale in schizophrenia. Schizophr Bull 1994; 20:297–310
3. Stein LI, Test MA: Alternative to mental hospital treatment, I: conceptual model, treatment program and clinical evaluation. Arch Gen Psychiatry 1980; 37:392–397
4. Deci PA, Santos AB, Burns BJ, Dias JK: Psychotropic medication prescription and compliance as factors in the effectiveness of assertive community treatment teams, in 3rd Annual Conference Proceedings of the NASMHPD Institute. Alexandria, Va, National Association of State Mental Health Program Directors, 1993, pp 439–444
5. Lehman AF, Dixon LB, Kernan E, DeForge BR: A randomized trial of assertive community treatment for homeless persons with severe mental illness. Arch Gen Psychiatry (in press)
6. Weiden PJ, Mott T, Curcio N: Recognition and management of neuroleptic noncompliance in schizophrenia, in Contemporary Issues in the Treatment of Schizophrenia. Edited by Shriqui C, Nasrallah H. Washington, DC, American Psychiatric Press, 1995, pp 411–434
7. Spitzer RL, Williams JBW, Gibbon M: Structured Clinical Interview for DSM-III-R (SCID). New York, New York State Psychiatric Institute, Biometrics Research, 1987
8. Overall JE, Gorham DR: The Brief Psychiatric Rating Scale. Psychol Rep 1962; 10:799–812