ORIGINAL ARTICLE

Treatment of Depressive Symptoms in Human Immunodeficiency Virus–Positive Patients

John C. Markowitz, MD; James H. Kocsis, MD; Baruch Fishman, PhD; Lisa A. Spielman, PhD; Lawrence B. Jacobsberg, MD, PhD; Allen J. Frances, MD; Gerald L. Klerman, MD†; Samuel W. Perry, MD†

Background: This randomized clinical trial compared 16-week interventions with interpersonal psychotherapy, cognitive behavioral therapy, supportive psychotherapy, and supportive psychotherapy with imipramine for human immunodeficiency virus (HIV)-positive patients with depressive symptoms.

Methods: Subjects (N = 101; 85 male, 16 female) with known HIV seropositivity for at least 6 months were randomized to 16 weeks of treatment. Inclusion criteria were 24-item Hamilton Depression Rating Scale score of 15 or higher, clinical judgment of depression, and physical health sufficient to attend outpatient sessions. Therapists were trained in manualized therapies specific for HIV-positive patients. Treatment adherence was monitored.

Results: Subjects randomized to interpersonal psychotherapy (n = 24) and supportive psychotherapy with imipramine (n = 26) had significantly greater improvement on depressive measures than those receiving supportive psychotherapy (n = 24) or cognitive behavioral therapy (n = 27). Similar results appeared in the completer subsample.

Conclusions: Depressive symptoms appear treatable in HIV-positive patients. Interpersonal psychotherapy may have particular advantages as a psychotherapy for patients who have experienced the significant life events of HIV infection.

Arch Gen Psychiatry. 1998;55:452-457

In 1988 the late Samuel Perry, MD, inaugurated a 4-cell treatment study for human immunodeficiency virus (HIV)-positive patients with depressive symptoms, modeled on the National Institute of Mental Health Treatment of Depression Collaborative Research Program (TDCRP) for medically healthy patients.[1] Although depression prevalence among HIV-positive individuals was known to be elevated and response of HIV-positive patients to antidepressant medication was being established,[2] little was known about the efficacy of psychotherapy for this population.[3] Perry decided to compare interpersonal psychotherapy (IPT),[4] cognitive behavioral therapy (CBT),[5] supportive psychotherapy (SP), and supportive psychotherapy with imipramine (SWI). When the study began, HIV infection appeared more acutely fatal than it does today. Clinicians wondered whether antidepressant psychotherapies would help patients with seeming "reasons to be depressed."

Our study design diverged from the TDCRP in offering SP rather than pill placebo plus clinical management as its presumed least active treatment. Supportive psychotherapy was included to control for nonspecific effects of psychotherapy, and SWI as standard antidepressant medication treatment. We have reported preliminary data finding IPT (n = 16) more efficacious than SP (n = 16); however, symptoms diminished in both groups of patients.[3] No other published trials have examined psychotherapy for HIV patients with depressive symptoms.

We hypothesized that focal antidepressant psychotherapies (IPT and CBT) would rival pharmacotherapeutic efficacy, and might perhaps be better accepted by HIV-positive patients who already took many pills and might not want or be able to tolerate additional medication. Supportive psychotherapy was designed to approximate a control condition, yet not be a minimal or empty treatment.[3]

RESULTS

One hundred one subjects were randomized to treatment (IPT = 24, CBT = 27,

From Cornell University Medical College, New York, NY.

†Deceased.

This article is also available on our Web site: www.ama-assn.org/psych.

©1998 American Medical Association. All rights reserved.
Downloaded From: http://archpsyc.jamanetwork.com/ on 05/22/2013

SUBJECTS AND METHODS

SUBJECTS

Subjects were recruited through advertisement and referral. Advertisements offered HIV-positive individuals free treatment for depression. Inclusion criteria required known HIV-positive status of 6 months or more, a score of 15 or higher on the 24-item Hamilton Depression Rating Scale (Ham-D),[6] and clinical judgment of significant depressive symptoms. Physical health had to permit outpatient treatment. Most subjects at entry fit Centers for Disease Control and Prevention stages II to III for HIV infection[7] (relatively medically asymptomatic). Over time, however, increasingly seriously ill subjects were accepted. Exclusion criteria were significant non-HIV medical disease, schizophrenia, bipolar disorder, contraindication to imipramine, current substance abuse, significant cognitive impairment (Mini-Mental State Examination[8] score <25), inability to speak English, and concurrent psychiatric treatment aside from HIV self-help or support groups.

THERAPISTS

Four IPT (2 psychiatrists, 2 social workers), 3 CBT (all PhD psychologists), 9 SP (2 psychiatrists, 4 social workers, 3 registered nurses), and 6 SWI (3 psychiatrists, 3 registered nurses) therapists each treated between 1 and 15 cases (mean ± SD, 5.6 ± 4.1). Experts in each modality trained therapists during a year-long phase, certifying them after at least 3 pilot cases. To avoid drift, therapists used treatment manuals and were monitored throughout with individual supervision of audiotaped sessions and blinded ratings of random sessions by independent, reliable adherence monitors.

TREATMENTS

Separate manuals, treatment teams, and team leaders encouraged uniform treatment and therapist morale.

Interpersonal psychotherapy helps patients relate changes in mood to events in their environment and consequent changes in social roles.[4] Depression is defined as a medical illness. The therapist gives the patient a depressive diagnosis and the sick role, engages the patient on affectively laden current life issues, and frames the patient's difficulties within an interpersonal problem area: grief, role dispute, role transition, or interpersonal deficits. Strategies address these problem areas, focusing in the present on what the patient wants and what options exist to achieve this. The manual[9] modified IPT to particular psychosocial concerns of depressed HIV-positive patients. Therapists told patients they had 2 medical illnesses: depression and HIV.

Cognitive behavioral therapy[5] is another antidepressant treatment validated by numerous controlled trials. Cognitive behavioral therapists help patients identify irrational, negative thoughts associated with depression. Patients learn to record and examine these thoughts, weigh their evidence, and challenge rather than believing and acting on them. The therapist helps the patient test hypotheses based on negative cognitions with the aim of disproving them. Techniques include cognitive restructuring and refocusing and formal homework.

Defined in its manual as non-IPT and non-CBT, SP resembled the client-centered therapy of Rogers[10] with added psychoeducation about depression and HIV. Supportive psychotherapy was inherently less structured than IPT or CBT, and unlike them did not offer patients a framework for therapy or focus on specific themes. Although possibly hampered by the proscription of interpersonal and cognitive

Continued on next page

SP = 24, SWI = 26). **Table 1** illustrates no significant demographic differences across groups at baseline. Subjects were predominantly male (85%), gay or bisexual (80%), and white (58%). Mean ± SD age was 36.9 ± 6.9 years (range, 24-59 years). Eighty-three percent reported some college education. Eighty-four percent had known their HIV-positive status for 1 year or more; 71% for more than 2 years (n = 9).

Most subjects were not severely medically ill at study entry. The sample shifted over time, reflecting the HIV epidemic, to greater proportions of heterosexual, ethnic minority, and medically sicker subjects. Baseline mean Karnofsky score was 80 ± 6.5; CD4 cell count, 280 ± 222 (n = 99).

Although all subjects were judged to have clinically significant depressive symptoms, only 53% met *DSM-III-R* criteria for a current mood disorder (Table 1). Most subjects met lifetime mood disorder criteria. About half of the subjects met criteria for an Axis II disorder and for lifetime substance abuse history. Comorbidity did not statistically differ across treatments.

TREATMENT CHARACTERISTICS

Interpersonal psychotherapy and CBT subjects attended nonsignificantly more sessions than SP or SWI subjects (IPT, 11.5 ± 5.7; CBT, 11.5 ± 6.5; SP, 9.0 ± 5.3; SWI, 9.9 ± 5.0). Subjects randomized to the SWI group (n = 26) received a mean imipramine dosage of 210 ± 66 mg/d (n = 23; range, 50-300 mg/d), with a mean imipramine/desipramine blood level of 177 ± 76 mg/dL (n = 18; range, 54-339 mg/dL).

OUTCOME

Subjects in the intent-to-treat samples did not differ across cells at baseline in depressive severity on the Ham-D or BDI. Scores on the Ham-D decreased significantly for all treatments by midpoint and at termination. The BDI scores fell significantly for IPT and SWI by midpoint, and for all cells by termination.

Across treatment groups, findings converged both for Ham-D and BDI, and for intent-to-treat and completer analyses. **Table 2** and **Table 3** and the **Figure** demonstrate a bifurcation in treatment outcomes. The IPT and SWI groups clustered with similarly low outcome scores; CBT and SP also moved together but showed less improvement. The intent-to-treat ANCOVA showed a main effect on Ham-D (ANCOVA $F_{3,96} = 2.67$; $P = .05$; n = 101): IPT and SWI were each superior to CBT, with SP a distant but not statistically different third. On the

©1998 American Medical Association. All rights reserved.
Downloaded From: http://archpsyc.jamanetwork.com/ on 05/22/2013

techniques, SP was by no means nontreatment. Supportive therapists were empathic, skillful, and experienced.

The SWI cell added imipramine and a biochemical rationale[11] to SP. Imipramine therapy was begun at 50 mg/d and increased as tolerated to 300 mg/d for 3 to 4 weeks unless limited by adverse effects.

Sixteen 50-minute IPT or CBT sessions were scheduled within a 17-week period. Both SP and SWI conditions ranged between 8 and 16 sessions, determined by patient need, of 30 to 50 minutes' duration. All sessions were audiotaped or videotaped.

ASSESSMENTS

Subjects were assessed on study entry using the Structured Clinical Interview for *DSM-III-R*, nonpatient version (SCID-NP[12]), the Personality Disorder Examination (PDE[13]), and demographic questionnaires. Outcome assessments were the 24-item Ham-D and Beck Depression Inventory (BDI[14]), to measure depressive symptomatology; CD4 cell count; and the clinician-administered, 100-point Karnofsky scale[15] to assess physical functioning. Medication adverse effects were assessed by rater checklist. For comparison with other studies, we calculated Ham-D 17-item scores.

Raters monitored therapist adherence using a 104-item version, modified for SP, of the 96-item Collaborative Study Psychotherapy Rating Scale (CSPRS[16]) developed for the TDCRP. This scale differentiated the 4 therapies. Raters were 4 predoctoral psychology graduate students who developed reliability (intraclass correlation coefficient range, 0.26-0.90, generally 0.62-0.90) after approximately 40 hours of training. Training was conducted by J.C.M. and later by initial trainees and included rating and discussing up to 16 randomly chosen pilot tapes covering all interventions. Raters met for ongoing supervision to review tapes and prevent drift. All therapist-patient dyads were rated as adherent to treatment protocols based on CSPRS ratings of 2 randomly chosen tapes, 1 early (sessions 3-6) and 1 late session (9-12).[17]

PROCEDURES

Following telephone screening, subjects met with psychiatric nurses, who completed the Ham-D. Eligible subjects gave informed written consent for participation. Subjects were retested for HIV and discussed test results before treatment began. At intake interviewers administered clinical ratings, the SCID-NP, and the PDE. Subjects were randomly assigned to treatment in a balanced design using a computer-generated random number sequence sealed in individual envelopes.

Subjects completed BDIs before each session. At baseline, midpoint (week 8), and just before termination (week 15), independent raters repeated the Ham-D and Karnofsky scales. Therapists also rated the Ham-D at alternate sessions.

DATA ANALYSIS

Outcomes were compared across the 4 treatments for intent-to-treat (N = 101) and completer (n = 69) samples. Intent-to-treat analyses compare the outcomes of all study entrants, including subjects who refused randomization (n = 4) or received minimal treatment (≥1 but <4 sessions, n = 15). Completer analyses test treatment efficacy only in the subsamples receiving full treatment dosage, and hence are less generalizable to treatment at large.

Demographic and diagnostic variables were compared using χ^2 and *t* tests for discrete and continuous variables, respectively, with 2-tailed $\alpha = .05$. Outcome was assessed using analysis of covariance (ANCOVA) for Ham-D and BDI, controlling for initial scores, and by repeated-measures analysis of variance (ANOVA). Clinician-rated Ham-D scores were used for the last observation in the intent-to-treat sample. Remission rates were analyzed using χ^2 tests.

BDI, SWI was superior to CBT and SP by ANCOVA, and IPT was superior to SP (ANCOVA $F_{3,95} = 4.26$; $P = .007$; n = 100). Repeated-measures ANOVA found main effects for intervention and time, but no significant intervention by time interaction.

Among completers (Table 2; n = 69), IPT was superior to both CBT and SP on Ham-D (ANCOVA $F_{3,64} = 3.22$; $P<.03$); SWI did not differ from other treatments. On BDI (Table 3), IPT was superior to CBT and SP, while SWI was superior to SP alone (ANCOVA $F_{3,64} = 5.01$; $P = .003$). In no analyses did IPT differ from SWI, or CBT from SP.

To ascertain whether medical status influenced antidepressant outcome, we repeated analyses using as covariates intake Karnofsky score and CD4 cell count in addition to initial Ham-D or BDI score. Findings were unchanged except among completers, where one additional difference emerged. In this analysis alone, intake CD4 cell counts ($t = -2.1$, $P<.04$) and Karnofsky severity ($t = -2.2$, $P<.04$) were associated with endpoint BDI score, and the post hoc Tukey least significant difference test showed a trend for CBT to outperform SP ($P = .06$). Analyses of the 17-item Ham-D using ANCOVA failed to show statistically significant differences for the intent-to-treat sample. Differences persisted for the completer subsample ($F_{3,64} = 3.70$; $P = .02$; n = 69).

Remission from depression was assessed using the strict TDCRP criterion of 17-item Ham-D score of 6 or greater. Groups did not significantly differ, although remission rates followed already described trends: IPT, 46%; CBT, 30%; SP, 21%; and SWI, 50% in the intent-to-treat sample; and 59%, 35%, 30%, and 56%, respectively, among the completer sample. Remission rates using the 24-item Ham-D at a threshold score of 8 or greater were similar: IPT, 46%; CBT, 30%; SP, 17%; and SWI, 42% for the intent-to-treat sample; and 59%, 41%, 24%, and 50%, respectively, for the completer sample.

PHYSICAL MEASURES

Karnofsky scores rose with mood improvement (baseline, 80 ± 6.5; termination, 86 ± 8.3), as might be expected with alleviation of depression[3] (**Table 4**). Whereas Karnofsky scores did not differ at baseline, the IPT and SWI groups had higher termination scores than the CBT and SP groups (ANCOVA $F_{3,62} = 4.60$; $P = .006$). The CD4 cell count did not change significantly by group over time.

©1998 American Medical Association. All rights reserved.
Downloaded From: http://archpsyc.jamanetwork.com/ on 05/22/2013

SECONDARY PREDICTORS

Neither Axis I diagnosis nor Axis II personality clusters mediated outcome by intervention. Presence of personality disorder was nonsignificantly associated with elevated depressive severity (Cluster A: 5 points on the Ham-D and BDI; Cluster B: 0 points on the Ham-D, 1 point on the BDI; Cluster C: 3 points on the Ham-D, 1 point on the BDI). Initial Karnofsky score correlated with the final Ham-D ($r = -.27$, $P = .009$, n = 94) and BDI ($r = -.25$, $P = .02$, n = 95) scores, suggesting patients with greater physical dysfunction responded best; CD4 cell count was not significantly correlated. Medication adverse effects at midtreatment, whether measured by severity or total number, were not significantly correlated with outcome. Therapist experience and professional training also did not affect outcome.

COMMENT

This first study of individual antidepressant psychotherapy for HIV-positive patients reveals that they, like other medically ill patients with depressive symptoms,[2,18] warrant and respond to specific antidepressant treatments. Depressive symptoms diminished across treatments. High prevalences of Axis II disorders and lifetime substance abuse did not preclude successful treatment of mood symptoms. Depressive symptoms should never be viewed as normal, even when HIV is involved: they deserve vigorous treatment. The improvement in Karnofsky functional scores, particularly in treatments of greatest antidepressant potency, suggests that patients had previously attributed to HIV symptoms for which depression was culpable.

Treatment with IPT and SWI yielded the best outcomes, while CBT and SP fared less well. Statistical significance of outcome analyses varied by treatment sample and assessment instrument considered, but results clearly converged. The differential treatment effects invite comparison with the TDCRP, in which post hoc analyses found imipramine and IPT each superior to placebo and clinical management among more severely depressed patients. The TDCRP remission rates (IPT, 43%; CBT, 36%; placebo and case management, 21%; and imipramine and case management, 42%; n = 239)[1] closely resembled ours. Psychotherapy adherence findings were also similar, and the 32% attrition rate was identical.[17] The TDCRP post hoc analysis of more severe (17-item Ham-D score ≥20)[1] vs milder depression was not undertaken because only 10% of subjects met the severity criterion.

This study, which is only the second direct comparison of IPT and CBT as antidepressant treatments, revealed differences favoring IPT in some analyses. Research finding differences between active psychotherapies has been rare indeed. Possible explanations for this include the quality of therapy and differences in specificity for the target disorder. Therapists across treatments were uniformly well-trained, empathic, technically adherent, and esteemed by their patients.

Interpersonal psychotherapy may have particular advantages over CBT for HIV-positive patients with depressive symptoms. Interpersonal psychotherapy connects life events to mood episodes (1) to help patients mourn life upheavals while (2) pragmatically and optimistically encouraging them to find new life goals and adjustments. Both halves of this formula seemed important to patients. Having suffered a surfeit of HIV-related life events—multiple bereavements, role disputes, and role transitions—they responded to IPT therapists' supportive encouragement to "live out your fantasies": to change their lives and seek whatever they desired for however much time remained to them. This seemed a tailored fit of therapy and patient. By contrast, CBT ad-

Table 1. Subject Characteristics and SCID Diagnoses (N = 101)*

	IPT (n = 24)	CBT (n = 27)	SP (n = 24)	SWI (n = 26)
Age, y (SD)	37.5 (7.4)	36.2 (6.2)	37.3 (7.1)	36.6 (7.2)
Sex				
Male	79.2	85.2	83.3	92.3
Ethnicity				
White	62.5	51.9	58.3	61.5
Black	12.5	14.8	20.8	23.1
Hispanic	25.0	29.6	20.8	7.7
Asian/other	0.0	7.4	0.0	7.7
Education				
College graduate	33.4	59.2	45.8	42.3
Religion				
Catholic	45.8	37.0	37.0	48.0
Jewish	8.3	18.5	8.3	4.0
Protestant	12.5	22.2	12.5	32.0
Other	8.4	7.4	4.2	4.0
None	25.0	14.8	29.2	12.0
HIV risk factors				
Sex with men	28.6	54.5	36.4	61.5
Sex with prostitutes	0.0	9.1	0.0	0.0
Known HIV+ partner	35.7	18.2	54.6	23.1
Shared needle	7.1	0.0	0.0	0.0
Known IVDU partner	14.3	0.0	9.1	7.7
Other	14.3	18.2	0.0	7.7
CDC disease staging				
II	40.9	47.8	20.0	21.1
III	22.7	17.4	40.0	63.2
IV	36.4	34.8	40.0	15.8
Lifetime MDE	73.9	65.4	62.5	60.0
Current MDE	52.2	38.5	45.8	40.0
Dysthymia	8.7	23.1	12.5	8.0
Lifetime mood disorder	82.6	73.1	70.8	68.0
Current mood disorder	60.9	50.0	54.2	48.0
Lifetime alcohol abuse	52.2	38.5	45.8	48.0
Current alcohol abuse	4.3	3.8	0.0	0.0
Lifetime drug or alcohol abuse	65.2	38.5	62.5	64.0
Current drug or alcohol abuse	4.3	7.7	4.2	0.0
Lifetime anxiety disorder	39.1	11.5	16.7	16.0
Current anxiety disorder	26.1	3.8	16.7	4.0
Lifetime Axis I diagnosis	91.3	88.5	87.5	100.0
Any Axis II personality disorder	63.2	33.3	44.4	43.8

*All values are given as percentages unless otherwise indicated. SCID indicates the Structured Clinical Interview for DSM-III-R; IPT, interpersonal psychotherapy; CBT, cognitive behavioral therapy; SP, supportive psychotherapy; SWI, SP with imipramine; HIV, human immunodeficiency virus infection; IVDU, intravenous drug user; CDC, Centers for Disease Control and Prevention; and MDE, major depressive episode.

©1998 American Medical Association. All rights reserved.
Downloaded From: http://archpsyc.jamanetwork.com/ on 05/22/2013

Table 2. Intent-to-Treat (N = 101) and Completer Samples (n = 69), Hamilton Depression Rating Scale Scores*

Treatment	No.	Ham-D-24†			Ham-D-17		
		Week 0	Week 8	Week 16	Week 0	Week 8	Week 16
IPT							
Intent-to-treat	24	20.4 (4.5)	13.0 (8.2)	10.6 (9.1)	15.5 (3.8)	10.2 (6.9)	8.3 (7.5)
Completer	17	19.6 (4.7)	9.8 (5.2)	6.5 (4.6)	14.7 (3.9)	7.5 (4.4)	4.8 (3.5)
CBT							
Intent-to-treat	27	20.8 (3.8)	16.9 (8.7)	17.1 (10.1)	16.1 (3.0)	12.3 (6.0)	12.7 (7.2)
Completer	17	20.4 (3.7)	14.3 (6.1)	12.9 (7.8)	16.1 (2.9)	10.8 (4.0)	10.1 (5.9)
SP							
Intent-to-treat	24	21.3 (5.7)	17.3 (7.3)	15.5 (8.9)	15.3 (4.1)	12.5 (5.6)	11.3 (6.5)
Completer	17	20.3 (5.8)	14.3 (4.3)	11.7 (6.0)	14.4 (3.7)	10.4 (3.8)	8.7 (4.7)
SWI							
Intent-to-treat	26	20.5 (5.6)	13.5 (8.3)	11.8 (8.8)	14.9 (4.0)	10.2 (5.7)	8.5 (6.2)
Completer	18	20.8 (5.7)	11.3 (6.4)	9.6 (6.4)	15.2 (4.4)	8.7 (4.6)	6.9 (4.8)
Total							
Intent-to-treat	101	20.8 (4.9)	15.2 (8.3)	13.8 (9.5)	15.5 (3.7)	11.3 (6.1)	10.3 (7.0)
Completer	69	20.3 (5.0)	12.4 (5.8)	10.2 (6.6)	15.1 (3.8)	9.3 (4.3)	7.6 (5.1)

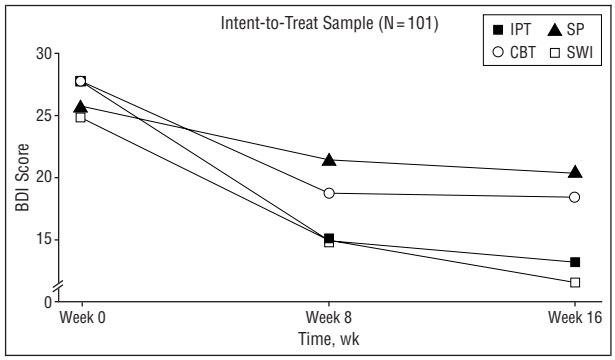
*All values are given as mean (SD) unless otherwise indicated. IPT indicates interpersonal psychotherapy; CBT, cognitive behavioral therapy; SP, supportive psychotherapy; and SWI, SP with imipramine.

†Ham-D-24 indicates 24-item Hamilton Depression Rating Scale; Ham-D-17, 17-item Hamilton Depression Rating Scale. Intent-to-treat sample: ANCOVA $F_{3,96} = 2.67$; $P = .05$; IPT and SWI > CBT; Completer sample: ANCOVA $F_{3,64} = 3.22$, $P < .03$; IPT > CBT and SP.

Table 3. Intent-to-Treat (N = 101) and Completer (n = 69) Samples, Beck Depression Inventory Scores*

Treatment	No.	Week 0	Week 8	Week 16
IPT				
Intent-to-treat	24	28.0 (7.9)	15.7 (11.5)	14.0 (12.1)
Completer	17	26.1 (8.3)	11.1 (7.1)	9.5 (7.3)
CBT				
Intent-to-treat	27	28.3 (6.9)	20.1 (10.6)	19.8 (10.7)
Completer	17	27.2 (6.3)	16.8 (9.7)	15.8 (9.4)
SP				
Intent-to-treat	23	25.9 (9.2)	21.4 (10.9)	20.3 (11.0)
Completer	17	25.1 (9.6)	20.3 (11.2)	18.8 (11.2)
SWI				
Intent-to-treat	26	24.7 (10.4)	15.3 (9.3)	11.7 (8.5)
Completer	18	24.3 (8.5)	14.4 (9.1)	9.9 (6.9)
Total				
Intent-to-treat	100	26.7 (8.5)	18.1 (10.7)	16.5 (11.1)
Completer	69	25.7 (8.2)	15.6 (9.8)	13.4 (9.5)

*All values are given as mean (SD) unless otherwise indicated. IPT indicates interpersonal psychotherapy; CBT, cognitive behavioral therapy; SP, supportive therapy; and SWI, SP with imipramine. Intent-to-treat sample: ANCOVA $F_{3,95} = 4.26$; $P = .007$; SWI > CBT and SP, IPT > SP; Completer sample: ANCOVA $F_{3,64} = 5.01$; $P = .003$; SWI > SP, IPT > CBT and SP.



Outcome: Beck Depression Inventory. For interpersonal psychotherapy (IPT), n = 24; for cognitive behavioral therapy (CBT), n = 27; for supportive psychotherapy (SP), n = 23; and for supportive psychotherapy with imipramine (SWI), n = 26. Analysis of covariance $F_{3,95} = 4.26$; $P = .007$; IPT > SP; SWI > CBT and SP.

dresses patients' exaggeration of hopeless thoughts, a relatively disadvantageous stance in treating patients with objectively negative life events. Even with optimistic cognitive restructuring and refocusing, CBT may fit HIV patients' situations less well. We speculate that IPT may be indicated for depressive patients who have experienced recent distressing life events and are likely to experience more in the future. Patients who report few life events (the IPT "interpersonal deficits" category) may be better CBT candidates.[19] Despite (nonsignificantly) fewer sessions, SP equaled CBT in efficacy, suggesting no advantage for CBT beyond so-called "nonspecific" psychotherapy effects. The efficacy of pharmacotherapy was again validated.[2]

This study has numerous limitations. Relative to the TDCRP, sample size was small and depression scores were lower, reducing statistical power to find treatment differences (particularly on the 17-item Ham-D). Forty-seven percent of subjects lacked current SCID mood disorders, although all were deemed clinically depressed by supervising psychiatrists. Most subjects had lifetime mood disorder histories, and many barely missed the SCID threshold for a current episode. The criterion of clinical impression of depression rather than SCID imitates clinical practice and may widen the generalizability of these findings.

Another design limitation, potentially less treatment exposure for SP, could have handicapped SP outcome. Finally, subjects were overwhelmingly male. Treatment of depressed HIV-positive women, who face different psychosocial and socioeconomic pressures than men, remains relatively unexplored.[20]

Psychotherapy of HIV-positive patients deserves greater attention than it has received. Interpersonal psy-

©1998 American Medical Association. All rights reserved.
Downloaded From: http://archpsyc.jamanetwork.com/ on 05/22/2013

Table 4. Physical Measures by Treatment Group (N = 101)*

	CD4 Cell Count		Illness Severity		Karnofsky Score	
Treatment	Week 0 (n = 99)	Week 16 (n = 54)	Week 0 (n = 101)	Week 16 (n = 67)	Week 0 (n = 100)	Week 16† (n = 66)
IPT	241 (221)	206 (144)	4.9 (0.7)	2.6 (0.7)	79.8 (6.3)	90.9 (6.4)
CBT	227 (176)	253 (127)	4.9 (0.8)	4.0 (1.2)	79.5 (7.6)	83.1 (8.7)
SP	320 (221)	280 (178)	5.2 (0.6)	3.8 (0.9)	79.0 (6.1)	82.5 (7.9)
SWI	338 (255)	280 (192)	4.7 (1.2)	3.3 (1.6)	81.1 (5.9)	88.3 (7.5)

*All values are given as mean (SD). IPT indicates interpersonal psychotherapy; CBT, cognitive behavioral therapy; SP, supportive psychotherapy; and SWI, SP with imipramine.

†ANCOVA $F_{3,62} = 4.60$; P = .006; IPT and SWI>CBT and SP.

chotherapy may be a particularly beneficial psychotherapy for HIV patients with depressive symptoms. Yet, as the sole study of its kind, our results require replication. Future reports will examine whether psychotherapy yielded benefits to offset its greater costs in time and therapist effort relative to pharmacotherapy.

Accepted for publication October 31, 1997.

This study was supported by grant MH-46250 from the National Institute of Mental Health, Rockville, Md, and from a fund established in The New York Community Trust by DeWitt-Wallace, New York, NY.

Presented in part at the American Psychopathological Association Annual Meeting, New York, NY, February 29, 1996, and in a New Research Session at the Annual Meeting of the American Psychiatric Association, New York, NY, May 7, 1996.

This article is dedicated to the late Samuel W. Perry, MD, who developed this research study, and to the late Gerald L. Klerman, MD, pioneer in interpersonal psychotherapy, who also played an active role in this research. Both were Professors of Psychiatry and Associate Chairmen for Research at Cornell University Medical College, New York, NY.

The authors gratefully acknowledge the comments of Judith Rabkin, PhD, on a draft of the manuscript, the dedication of the many study therapists, and the dedication of Dean Haglin, Kathy Dodd, and Alyce Kuklinski, without whom the study could never have been completed.

Reprints: John C. Markowitz, MD, Cornell University Medical College, 445 East 68th St, Suite 3N, New York, NY 10021 (e-mail: jcmarko@mail.med.cornell.edu).

REFERENCES

1. Elkin I, Shea MT, Watkins JT, Imber SD, Sotsky SM, Collins JF, Glass DR, Pilkonis PA, Leber WR, Docherty JP, Fiester SJ, and Parloff MB. National Institute of Mental Health treatment of depression collaborative research program: general effectiveness of treatments. *Arch Gen Psychiatry*. 1989;46: 971-982.
2. Markowitz JC, Rabkin JG, Perry SW. Treating depression in HIV-positive patients. *AIDS*. 1994;8:403-412.
3. Markowitz JC, Klerman GL, Clougherty KF, Spielman LA, Jacobsberg LB, Fishman B, Frances AJ, Kocsis JH, Perry SW. Individual psychotherapies for depressed HIV-positive patients. *Am J Psychiatry*. 1995;152:1504-1509.
4. Klerman GL, Weissman MM, Rounsaville BJ, Chevron ES. *Interpersonal Psychotherapy of Depression*. New York, NY: Basic Books; 1984.
5. Beck AT, Rush AJ, Shaw BF, Emery G. *Cognitive Therapy of Depression*. New York, NY: Guilford; 1979.
6. Hamilton M. A rating scale for depression. *J Neurol Neurosurg Psychiatry*. 1960; 25:56-62.
7. Centers for Disease Control. Revision of the CDC surveillance case definition for acquired immunodeficiency syndrome. *Morb Mortal Wkly Rep*. 1987;36: 3S-15S.
8. Folstein MF, Folstein SE, McHugh PR. "Mini-mental state": a practical method for grading the cognitive state of patients for the clinician. *J Psychiatr Res*. 1975; 12:189-198.
9. Markowitz JC, Klerman GL, Perry SW, Clougherty KF, Josephs LS. Interpersonal therapy for depressed HIV-seropositive patients. In: Klerman GL, Weissman MM, eds. *New Applications of Interpersonal Therapy*. Washington, DC: American Psychiatric Press; 1993:199-224.
10. Rogers CR. *Client-Centered Therapy*. Boston, Mass: Houghton Mifflin; 1951.
11. Fawcett J, Epstein P, Fiester SJ, Elkin I, Autry JH. Clinical management and imipramine/placebo administration manual: NIMH Treatment of Depression Collaborative Research Program. *Psychopharm Bull*. 1987;23:309-324.
12. Spitzer RL, Williams JBW. *Structured Clinical Interview for* DSM-III-R*, Nonpatient Version (SCID-NP)*. New York, NY: New York State Psychiatric Institute; 1987.
13. Loranger AW. *Personality Disorder Examination (PDE) Manual*. Yonkers, NY: DV Communications; 1988.
14. Beck AT. *Depression Inventory*. Philadelphia, Pa: Center for Cognitive Therapy; 1978.
15. Karnofsky DA. *The Clinical Evaluation of Chemotherapeutic Agents in Cancer*. New York, NY: Columbia University Press; 1949:191-205.
16. Hollon SD. *Final Report: System for Rating Psychotherapy Audiotapes*. Bethesda, Md: US Dept of Health and Human Services; 1984.
17. Markowitz JC, Scarvalone PA, Spielman LA, Perry SW. Adherence in psychotherapy for depressed HIV-positive patients. Paper presented at: Annual Meeting of the Society for Psychotherapy Research; June 29, 1994; York, England.
18. Popkin MK, Callies AL, Mackenzie TB. The outcome of antidepressant use in the medically ill. *Arch Gen Psychiatry*. 1985;42:1160-1163.
19. Sotsky SM, Glass DR, Shea MT, Pilkonis PA, Collins JF, Elkin I, Watkins JT, Imber SD, Leber WR, Moyer J, Oliveri ME. Patient predictors of response to psychotherapy and pharmacotherapy: findings in the NIMH treatment of depression collaborative research program. *Am J Psychiatry*. 1991;148:997-1008.
20. Swartz HA, Markowitz JC, Spinelli MG. Interpersonal psychotherapy of a dysthymic, pregnant, HIV-positive woman. *J Psychother Prac Res*. 1997;6: 165-178.

©1998 American Medical Association. All rights reserved.
Downloaded From: http://archpsyc.jamanetwork.com/ on 05/22/2013