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Cluster C Personality Disorders in Major Depressive Episodes: The Relationship Between Hostility and Suicidal Behavior

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Abstract

There is some evidence for an association between Cluster C Personality Disorders (CCPD) and suicidal behavior. We compared depressed inpatients with and without CCPD in terms of suicidal behavior and associated psychopathology. Cluster A or B personality disorder co-morbidity were exclusion criteria for both groups (cases and controls). Depressed inpatients with “pure” CCPD had higher levels of suicidal ideation but not more previous suicide attempts compared with patients without CCPD. Greater suicidal ideation in depressed patients with CCPD in our study was associated with more hostility. Future studies examining the relationship between suicidal ideation and hostility in CCPD may clarify whether treatment focused on hostility might be of use for decreasing suicidal ideation in depressed patients with CCPD (Spitzer, Williams, Gibbon et al., 1990).

Keywords

cluster C personality disorders; depression; hostility; suicide

Whereas there is strong support for an association of other personality disorders, such as cluster B personality disorders with suicidal behavior (Corbitt, Malone, Haas et al., 1996; Isometsa, Henriksson, Heikkinen et al., 1996; Lecrubier, 2001; Leverich, Altshuler, Frye et

al., 2003; Sher, Oquendo, & Mann, 2001), reports about cluster C personality disorders (CCPD) (fearful/avoidant cluster) are mixed. Few studies have investigated the association between CCPD (obsessive-compulsive, avoidant, and dependent) and suicidal behavior. In a longitudinal study of a community sample, Johnson, Cohen, Skodol, et al. (1999) reported that patients with CCPD were at increased risk for suicidal behavior even after controlling for affective disorders. In psychological autopsy studies, Brent, Johnson, Perper, et al. (1994) reported a higher prevalence of probable or definite cluster C PD among adolescent suicide victims than in controls, and Foster, Gillespie, McClelland, et al. (1999) reported CCPD as a suicide risk factor even after adjustment for axis I disorders in adults. On the other hand, Isometsa, Henriksson, Heikkinen, et al. (1996) found no differences between adult suicide victims with CCPD and controls in any of the examined variables including a history of previous suicide attempt. Chioqueta and Stiles (2004) investigated the relationship between specific disorders within cluster C and suicide attempt in a study of psychiatric outpatients, and found that only dependent personality disorder, but not obsessive-compulsive and avoidant PD, was associated with suicide attempt. Of interest, this association disappeared after controlling for co-morbid depressive disorder.

Yet, co-occurrence of personality disorders of more than one cluster has been reported to be associated with increased suicide risk (Schneider, Watterling, Sargk et al., 2005). In this context, in a community sample, 32% of subjects who met criteria for a personality disorder had diagnoses in 2 or more PD clusters (Johnson, Cohen, Skodo et al., 1999). In the studies of suicidal behavior in CCPD subjects cited above, co-morbidity of other PDs, which could affect the association of CCPD with suicidal behavior, was not excluded. To our knowledge, only one psychological autopsy study excluded co-morbidity of other PD, and reported that “pure” CCPD was an independent predictor for completed suicide only for men (Schneider, Watterling, Sargk et al., 2005).

With regard to the risk factors for suicidal behavior, an association of CCPD with depression (Russel, Kornstein, Shea et al., 2003) as well as alcohol (Bowden-Jones, Iqbal, Tyrer et al., 2004) and substance use (Skinstad & Swain, 2001) has been reported. Furthermore, CCPD has been reported to be associated with anger/hostility (Fava, 1998; Gould, Ball, Kaspi et al., 1996), another risk factor for suicidal behavior (Mann, Waternaux, Haas et al., 1999). We know little about the relationship between hostility/aggression and suicidal behavior in CCPD subjects, information that might contribute to our understanding of suicidal behavior in the CCPD population.

This clinical study investigated suicidal behavior in depressed inpatients with CCPD and without other personality disorder co-morbidity (i.e., Cluster A or B). A control group included depressed patients without CCPD and without any other personality disorder. We investigated: 1) whether depressed inpatients with CCPD co-morbidity had more suicidal ideation/behavior than those without CCPD; 2) which psychopathological traits are associated with suicidal behavior of patients with CCPD. To our knowledge, this is a first clinical case-control study of suicidal behavior in patients with CCPD but without other PD co-morbidity.

METHOD

Participants and Procedure

One-hundred-eighty-six (n = 186) inpatients who met DSM-III-R criteria (American Psychiatric Association Task Force, 1987) for a current Major Depressive Episode entered the study. A portion of this sample was included in a study investigating suicidal behavior in depressed inpatients (Mann, Waternaux, Haas et al., 1999). The mean age of the sample was 40.9 years ($\pm$ 14.4), 59.1% were female and 82.8% were white. Subjects were recruited at

the New York State Psychiatric Institute (NYSPI) and Western Psychiatric Institute and Clinic (WPIC). Exclusion criteria included current substance or alcohol abuse, neurological illness or other active medical conditions. Further exclusion criteria were co-morbid cluster A or B personality disorder. All subjects gave written informed consent for the study as required by the Institutional Review Board.

Measures

DSM-III-R Axis I psychiatric disorders were diagnosed based on the Structured Clinical Interview for DSM-III-R (SCID) (Spitzer, Williams, Gibbon et al., 1990) and confirmed by consensus conference led by experienced MD or PhD level research clinicians. The presence or absence of personality disorders was determined by assessing axis II personality pathology with the Structured Clinical Interview for DSM-III-R (SCID-II) (Spitzer, Williams, Gibbon et al., 1990) once depressive symptoms had subsided, except in the case of treatment refractory depression. Acute psychopathology during the 2 weeks before the evaluation was assessed. Objective depressive symptoms were assessed by a research clinician who used the 17-item Hamilton Depression Rating Scale (HAM17) (Hamilton, 1960). Patients' subjective perception of depression severity was assessed by means of self-report with the Beck Depression Inventory (BDI) (Beck, Ward, Mendelson et al., 1961). Overall psycho-pathology was assessed with the Brief Psychiatric Rating Scale (BPRS) (Overall & Gorham, 1962), and global psychosocial functioning with the Global Assessment Scale (GAS) (excluding the suicide item) (Endicott, Spitzer, Fleiss et al., 1976). Lifetime aggression was measured with the Brown-Goodwin Aggression Scale (BGAI) (Brown, Goodwin, Ballenger et al., 1979), and the Buss-Durkee Hostility Inventory (BDHI) (Buss & Durkee, 1957). Impulsivity was measured with the Barratt Impulsivity Scale (BIS) (Barratt, 1965). Life stressors were measured by using the St. Paul-Ramsey Questionnaire (SPRS) (Lumry, 1978), which rates the severity of individual stressors from 1 (none) to 7 (catastrophic) in six categories ranging from marital to occupational and gives a final global measure of the stressors. Hopelessness was measured with the Beck Hopelessness Scale (BHS) (Beck, Weissman, Lester et al., 1974). The Reasons for Living Inventory (RFL) (Linehan, Goodstein, Nielsen et al., 1983) was used to assess possible protective factors against suicide attempts. Lifetime history of suicide attempts was obtained using the Columbia Suicide History Form (Oquendo, Halberstam & Mann, 2002). A suicide attempt was defined as a self-destructive act with at least some intent to end one's life. The highest level of suicidal ideation in the two weeks prior to baseline assessment was measured using the Scale for Suicidal Ideation (SSI) (Beck, Kovacs & Weissman, 1979).

Analytic Strategy

T-tests and chi-squares were used to identify correlated variables. Subjects with and without CCPD were compared in terms of demographic and clinical variables using chi-square statistics for categorical variables and t-test statistics and MANOVA for continuous variables. Linear regression with suicidal ideation as the outcome variable and CCPD as the independent variable was performed controlling for variables that differed significantly in the two samples.

RESULTS

Sample Description and Demographics

In the sample ($n = 186$), mean depression scores were 27.2 ($SD \pm 11.4$) on BDI and 20.4 ($SD \pm 6.4$) on HAM-17. The prevalence of CCPD in the sample was 18.3% ($n = 34$). Major depressive disorder (MDD) was diagnosed in 88.2% of subjects whereas 11.8% had a bipolar disorder (BD), currently depressed. In terms of specific personality disorder from cluster C, 44.1% ($n = 15$) of the subjects had avoidant PD, 23.5% ($n = 8$) dependent PD,

20.6% (n = 7) obsessive-compulsive PD, 8.8% (n = 3) not other specified PD, and 2.9% (n = 1) passive-aggressive PD. Patients with CCPD and without CCPD did not differ in terms of demographic characteristics such as age, gender, race, religious affiliation (yes/no), marital or parental status, education, or income (see Table 1).

Clinical Characteristics

In terms of clinical characteristics, subjects with CCPD reported more suicidal ideation than those without CCPD (see Table 2), although no difference in the prevalence of past suicide attempts was found. In addition, male and female subjects with CCPD did not differ in terms of suicidal ideation ($t = 1.0$, $df = 31$, $p = .282$) or past suicide attempt ($\chi^2 = .01$, $df = 1$, $p = .897$). Subjects with co-morbid CCPD also had more self-perceived depression severity as measured by the BDI, more hopelessness (BHS), greater hostility (BDHI) and higher rates of past alcohol abuse than those without CCPD, with a suggestion of a difference in the level of the severity of depression measured with HAM-17 (see Table 2). There were no differences in the prevalence of past substance abuse other than alcohol, history of childhood abuse and adverse life-events, impulsivity (BIS), aggression (BGAI), global functioning (GAS w/o suicide), or global psychopathology (BPRS), as well as perceived reasons for living in subjects with and without CCPD (see Table 2). The same levels of significance were obtained by MANOVA. A linear regression with suicidal ideation as the dependent variable and CCPD as the independent variable controlling for self-perceived depression severity (BDI), hostility (BDHI), hopelessness (BHS), and past alcohol abuse, showed that higher level of hostility (BDHI) was significantly related to suicidal ideation whereas CCPD, self-perceived depression severity (BDI), hopelessness, and past alcohol abuse were not (see Table 3). Further exploratory analyses of hostility (BDHI) subscales revealed that subjects with CCPD had significantly higher scores on irritability, negativism, suspicion, and guilt subscales than subjects without CCPD (see Table 4), whereas there were no significant differences on other subscales.

DISCUSSION

Depressed subjects with “pure” CCPD reported more suicidal ideation but were not more likely to have a history of suicide attempts compared with patients without CCPD in our study. This is contrary to previous studies (Brent, Johnson, Perper et al., 1994; Foster, Gillespie, McClelland et al., 1999; Johnson, Cohen, Skodol et al., 1999;) reporting an association between CCPD and suicidal behavior. These studies did not exclude other PD co-morbidity, which could affect findings given that the cooccurrence of personality disorders from more than one cluster has been reported to be associated with elevated suicide risk (Schneider, Wetterling, Sargk et al., 2005). On the other hand, our findings differ from those of Schneider, Wetterling, Sargk et al. (2005) who reported that, in a psychological autopsy study, presence of “pure” CCPD was a predictor of suicide only for men, even independently of axis I disorders. In our study, there were no associations between gender and suicidal ideation or behavior in depressed patients with CCPD and those without co-occurrence of other personality disorders. This may be because suicide attempts and suicide completion are related but not identical behaviors and, consequently, risk factors for each may differ. On the other hand, our sample consisted of inpatients who were hospitalized due to depression severity. That our sample did not differ in terms of suicide attempt could indicate a “ceiling effect” in terms of severity of depression or risk for suicidal behavior among inpatients, not observed in community samples. In other words, depressed subjects with CCPD who require hospitalization may be on the more severe end of the spectrum in terms of suicidal behavior among depressed individuals with CCPD. Clearly, further clinical studies with a greater sample size of subjects with CCPD and without Cluster A and Cluster B PD comorbidity should examine this possibility.

Consistent with previous reports about an association between anger attacks and CCPD (Fava, 1998; Gould, Ball, Kaspi et al., 1996), subjects with CCPD in our study had more hostility, which was associated with more suicidal ideation in our study. An association of hostility/anger and suicidal ideation has been previously reported (Miotto, Coppi, Frezza et al., 2003; Scocco, Meneghel, Dello Buono et al., 2001). Furthermore, greater suicidal ideation in subjects with CCPD was associated with more hostility, rather than diagnoses from the fearful/avoidant cluster (CCPD) per se in this sample. This finding deserves attention as passive-aggressive traits were reported to remain even after a treatment of depression and after all other cluster C traits significantly decrease (Peselow, Sanfilipo, & Fieve, 1994). Future investigations of changes in hostility during treatment and its effect on the level of suicidal ideation in depressed patients with CCPD could clarify this relationship and indicate whether this population could benefit from therapeutic interventions diminishing anger. In particular irritability, negativism (oppositional behavior), suspicion, and guilt were more common in CCPD patients in our study. Of interest, some of these hostility features have been also reported to be associated with suicidal ideation, i.e. irritability (Conner, Meldrum, Wieczorek et al., 2004) and guilt/self-blame (Cooper-Patrick, Crum & Ford, 1994; Grunebaum, Keilp, Li et al., 2005; Van Gastel, Schotte & Maes, 1997). Moreover, suspiciousness has been found to be a risk factor for suicidal behavior in patients with schizophrenia spectrum disorders (Fenton, McGlashan, Victor et al., 1997).

We found that among those with the fearful/avoidant cluster (CCPD), past alcohol abuse was more common in agreement with Bowden-Jones, Iqbal, Tyer et al. (2004). In contrast, an association of CCPD with other substance use (Skinstad & Swain, 2001) could not be found in our study.

Limitations

There are some limitations to this study. We had a relatively small number of subjects with CCPD. However, this is at least partly due to the fact that we excluded subjects with other personality disorders (i.e., cluster A or B), which was not the case in previous clinical studies and therefore makes our sample unique. Another limitation is that those with CCPD were currently depressed and thus we cannot draw any conclusions about this group in general. Also, the cross-sectional nature of the data does not permit predictions about the expression of suicidal ideation in CCPD.

Implications

The results of this study suggest that, among depressed individuals, “pure” CCPD was associated with greater suicidal ideation and not with suicidal acts. Greater suicidal ideation in patients with CCPD in our study was associated with more hostility. Whether a decrease in hostility diminishes suicidal ideation in depressed patients with CCPD remains a subject for future studies. We suggest that future studies with a greater sample size and that exclude subjects with other personality disorders (Cluster A or B personality disorders) may clarify the nature of the association between CCPD and suicidal behavior.

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TABLE 1

Demographics of 186 Depressed Inpatients with and without Cluster C Personality Disorder

	With CCPD N = 34	Without CCPD N = 152	Chi-square or t-test	P
Age (M ± SD)	39.7 ± 13.3	40.5 ± 14.7	– .32	.749
Sex (Female) (%)	23 (67.6)	87 (57.2)	1.2	.264
Race (White) (%)	27 (79.4)	127 (83.6)	.33	.563
With religious affiliation (%)	31 (91.2)	128 (84.2)	1.0	.297
Married (%)	13 (38.2)	53 (34.9)	.138	.711
With children (%)	18 (52.9)	92 (60.5)	.66	.416
Education (years) (M ± SD)	13.9 ± 3.5	15.0 ± 3.0	– 1.68	.094
Income (M ± SD)	19,264	21,975	– .461	.645

TABLE 2**Cluster C Personality Disorder, Suicidal Behavior, and Co-morbidity**

	With CCPD N = 34	Without CCPD N = 152	Chi-square or t-test*	P
Suicide related measures				
Suicidal ideation (M ± SD)	15.8 ± 11.0	10.5 ± 10.1	2.6 (df = 171)	.009
Life-time suicide attempt (%)	18 (52.9)	57 (38.0)	2.5 (df = 1)	.109
Acute psychopathology				
Beck depression inventory (M ± SD)	33.0 ± 11.2	26.0 ± 11.1	2.9 (df = 157)	.004
Hamilton depression rating scale (17-item) (M ± SD)	22.4 ± 6.1	20.0 ± 6.4	1.9 (df = 181)	.052
Beck hopelessness scale (M ± SD)	13.0 ± 5.2	10.5 ± 5.9	2.0 (df = 159)	.041
Brief psychiatric rating scale (M ± SD)	36.8 ± 8.8	34.9 ± 7.3	1.2 (df = 172)	.224
Global assessment scale (w/o suicide) (M ± SD)	42.0 ± 8.9	44.7 ± 10.5	– 1.2 (df = 139)	.212
Trait variables				
Barratt impulsivity scale (M ± SD)	50.8 ± 16.8	48.5 ± 16.1	.671 (df = 147)	.503
Buss-Durkee hostility inventory (M ± SD)	37.0 ± 9.5	30.8 ± 10.9	2.7 (df = 147)	.007
Brown-Goodwin aggression inventory (M ± SD)	16.7 ± 3.8	15.8 ± 4.7	.900 (df = 168)	.369
Past substance problem				
Past alcohol abuse (%)	11 (32.4)	20 (13.3)	7.1 (df = 1)	.007
Past other substance abuse (%)	16 (47.1)	50 (33.3)	2.2 (df = 1)	.132
Adverse life experiences				
Self-reported childhood abuse (%)	12 (42.9)	45 (34.9)	.63 (df = 1)	.426
St. Paul Ramsey scale (life events) (%)	3.8 ± 1.0	3.8 ± 1.1	– .014 (df = 157)	.989
Protective factors against suicidal behavior				
Reasons for living (total)	164.6 (SD ± 51.3)	164.8 (SD ± 44.0)	– .016 (df = 131)	.987

* For continuous variables, the same levels of significance were yielded by MANOVAs.

TABLE 3

Final Linear Regression Model with Suicidal Ideation as Dependent Variable

Beta	t	P	
CCPD	.042	.478	.634
Beck depression inventory	.185	1.8	.073
Hopelessness	.069	.696	.488
Buss-Durkee hostility inventory	.197	2.2	.025
Past alcohol abuse	.102	1.2	.232

TABLE 4

Buss-Durkee Hostility Inventory (BDHI) Subscales Scores of Depressed Patients with and without CCPD

	With CCPD N = 34 (18.3%)	Without CCPD N = 152 (81.7%)	t* (df)	P
Assault (M ± SD)	2.6 ± 2.1	2.6 ± 2.1	-.07 (df = 146)	.944
Indirect hostility (M ± SD)	5.1 ± 2.0	4.3 ± 1.9	1.8 (df = 143)	.060
Irritability (M ± SD)	7.0 ± 2.7	5.2 ± 2.5	3.2 (df = 147)	.001
Negativism (M ± SD)	2.8 ± 1.4	1.9 ± 1.2	3.4 (df = 148)	.001
Resentment (M ± SD)	4.1 (SD ± 1.9)	3.3 (SD ± 2.1)	1.5 (df = 146)	.112
Suspicion (M ± SD)	4.6 ± 1.8	2.7 ± 2.3	3.8 (df = 147)	.001
Verbal hostility (M ± SD)	5.7 ± 2.6	6.0 ± 2.8	-.37 (df = 147)	.705
Guilt (M ± SD)	5.4 ± 1.9	4.5 ± 2.2	2.0 (df = 142)	.046

*The same levels of significance were yielded by MANOVAs.