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Risk Factors for Suicide in Huntingtons Disease: A Retrospective Case Controlled Study

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We reviewed 11 instances of suicide in HD families to determine what clinical and social characteristics might alert health professionals to increased suicide potential. The subjects were eight males and one female affected with HD, one female at risk for HD, and one unaffected female spouse, ranging in age from 24 to 65 years. Six of the nine individuals with HD who committed suicide were single or divorced. Duration of HD symptoms ranged from 1 to 14 years. The single most important risk factor for suicide in HD was having no offspring. Other suicides in the family, being unmarried, having contact with others affected with HD, living alone, and depression slightly increased the risk of suicide. The suicide of an unaffected spouse and an individual at risk, but unaffected, emphasizes the heavy burden of HD on other family members. Recognition of these risk factors should allow health care providers to assist families coping with HD and presymptomatic diagnosis.

KEY WORDS: Huntingtons Disease, suicide, depression

INTRODUCTION

Although an increased frequency of suicide has been reported in patients with Huntingtons disease (HD), few details regarding this phenomenon are available. It has been suggested that suicide may be more frequent in the early stages of HD. The occurrence and treatment of serious depression in HD are receiving increased attention. In order to define risk factors for suicide in families with HD, we compared clinical and social characteristics of subjects who completed suicide in HD families with gender and age-matched persons with HD who did not kill themselves.

MATERIALS AND METHODS

A retrospective review was done of medical records, social work notes, and genetic counseling files from the HD clinic populations seen at the Seattle VA Medical Center and University of Washington between 1972 and 1992. There were 300 HD patients in this population (143 males and 157 females). All affected with HD were diagnosed by experienced neurologists. There were nine completed suicides in the HD group. Three of the HD suicide subjects came to autopsy and HD was confirmed neuropathologically in each case. Two other suicide subjects had autopsy confirmation of HD in the family. Two disease, age, and gender-matched living subjects with HD were randomly selected from the same population and compared with each suicide subject (18 controls).

Social and clinical data were collected using methods similar to Robins [1981]. A retrospective questionnaire was developed to include demographic information such as age, gender, marital status, siblings, and offspring. Suicide data included year of suicide, method, age at death, duration of time since symptom onset, and other suicides in the family. In addition, a description of with whom the subject lived, symptomatology of depression, alcohol abuse, history of violence, dementia, and personal experience with an affected individual with HD were recorded.

Depression was defined as the presence of at least three of the following symptoms: weight loss, loss of appetite, insomnia, inertia, loss of interest, joylessness, sadness, reduction in affective relationships, reduction in sex drive, feelings of worthlessness, and worry about finances. A notation in the medical record indicating the diagnosis of depression by a neurologist or psychiatrist also classified the subject as depressed.

Similarly, dementia was defined as the presence of at least one of the following: lack of orientation to the month and year, inability to find one's way around familiar places, inability to read and understand as well as ever, and difficulty with simple arithmetic. A physician's diagnosis of dementia was also sufficient to classify the subject as demented. Alcohol abuse was defined as excess drinking that interfered with health, social, or economic functioning.

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TABLE II. Summary of Clinical and Social Characteristics of HD Suicides and HD Controls[a,b]

	HD suicides (n = 9)	HD controls (n = 18)
Gender	8 male 1 female	16 male 2 female
Age range (at death or comparison)	32–62 (mean 47)	29–62 (mean 47)
Age of symptom onset	27–62	28–53
Duration of symptoms (yr)	<1–14 yr (mean 5.8 yr)	1–14 yr (mean 5.7 yr)
Marital status	3 married (25%) 6 unmarried (75%) 5 divorced 1 single	8 married (50%) 10 unmarried (50%) 9 divorce 1 single
Family history of suicide	3 yes (38%)	4 yes (25%)
Subjects without offspring	4 yes (44%)	3 yes (17%)
Nature of household	0 homeless 4 alone in residence (50%) 3 group home/state institution (37%) 2 with spouse (22%)	1 homeless (5%) 6 alone in residence (33%) 8 with spouse or significant other (44%)
Depression	4 yes (50%)	7 yes (39%)
Alcoholism	0 yes	3 yes (18%)
History of violence	1 yes (12%)	5 yes (31%)
Dementia	6 yes (67%)	17 yes (94%)
No Contact with HD	2 yes (22%)	3 yes (17%)

[a]Spouse #10 not in table.
[b]At risk #11 not in table.

The odds ratios for social and clinical variables in suicides with HD were computed using a matched analysis with two controls per case. The two subjects who did not have HD were excluded from the analysis. Their histories are reported separately.

RESULTS

Table I lists the methods used to commit suicide by the eleven subjects (8 males, 3 females). Of the 9 subjects with HD, 3 drowned, 1 death was by motor vehicle crash, 3 subjects used handguns, and 1 took an overdose of barbiturates. Eight of the 9 HD suicides were by males, although the proportion of males in the studied population was not increased (48%). One additional suicide subject was an unaffected spouse with an affected husband and 2 affected children. One presumed unaffected 53-year-old subject was at risk because of an affected mother. Autopsy of this subject confirmed her unaffected status.

HD subjects and controls were similar in mean age, duration of symptoms, and age of symptom onset (Table II). However, 5 of the 9 HD subjects committed suicide within 1 year of symptom onset. The mean was skewed by one suicide subject who had unusually slow progression and was living independently although he had been symptomatic with chorea for 14 years. None of the suicide subjects abused alcohol.

Those risk factors with odds ratios greater than 1 were the following: no offspring (OR = 13.6), other suicides in the family (1.75), not married (1.6), no contact with other persons who have HD (1.43), living alone (1.26), and depression (1.26). The variable of having no children was the only one that kept the 95% confidence interval above one.

TABLE I. Suicide Methods

Subject	Age	Gender	Method	Autopsy (confirmation of HD in subject or family)
1	42	M	Drown/verbal suicide intent	Yes
2	62	M	Gun	Yes
3	50	F	Overdose	No
4	47	M	Gun	No
5	33	M	Drown/jumped off bridge	Yes
6	51	M	Drown/jumped off bridge	Yes
7	32	M	Drown/jumped off bridge	Yes
8	46	M	Single vehicle auto crash with note	No
9	43	M	Gun	No
10[a]	62	F	Carbon monoxide	N/A
11[b]	57	F	Cut wrists	Yes/family No/subject

[a]Unaffected spouse.
[b]At risk HD.

DISCUSSION

Persons with Huntingtons disease kill themselves more often than the general population [Dewhurst et al., 1970; Farrer, 1986; Schoenfeld et al., 1984; Hayden et al., 1980] The risk of suicide in HD is increased 4 to 8 times depending upon age and geographic region [Farrer, 1986; Schoenfeld, 1984]. Sorenson [1991] reported an increased suicide risk in siblings of persons with HD, comparable to that of persons with HD. DiMaio [1993] found increased suicide frequency in affected subjects, those at risk, and normal relatives.

Suicide may be viewed by some patients as a rational but extreme response to an intolerable situation. Suicide is a choice, but not necessarily a fully informed one. Suicide often represents ineffective coping abilities. Groups of people who are not valued in society tend to be suicide victims. The suicides of an unaffected spouse and individual at risk who had no sign of HD at autopsy in this study, illustrates the heavy burden of HD on family members [Hans and Koeppen, 1980; DiMaio et al., 1993].

Hayden [1981], Schoenfeld [1984], and Farrer [1986] suggest suicide occurs more frequently in the early stages of HD. Our findings are consistent with those results. The suicide subjects were not in the advanced stages of the disease. Folstein [1989] makes note of depression early in the course of HD, often characterized by feelings of hopelessness. The depression could be a direct result of the degenerative disease process, rather than simply a psychological reaction to illness, and depression may be more common in certain HD families.

The suicide methods chosen by the subjects tended to be gender-specific with males using more action-oriented means (e.g., handguns). We recommend to all HD families that guns be removed from the home. Jumping from bridges and drowning was more common in this group than other studies and presumably reflects the geographic availability of water in the Northwest. McAlpine et al. [1990] also noted geographic influences in suicide methods. Overall, our results are consistent with the patterns of suicide in the general population [Lester, 1983; McAlpine et al., 1990; de Catanzaro, 1991].

In a study of suicide and schizophrenia, Westermeyer et al. [1991] described similar risk factors of recent diagnosis, depression, single marital status, and male gender. The authors attributed suicide to a growing recognition by the patients that the illness would be chronic, leading to hopelessness and disappointment over a failure to live up to one's expectations. It is of interest that past history of violence or alcoholism did not distinguish the suicide subjects from other HD patients, perhaps reflecting the use of these behaviors as alternate coping methods.

The results of this study suggest that the profile of an HD patient with high risk for suicide is male, without children, with a family history of suicide, not married, having no contact with others who have HD, living alone, and depressed. Children represent a major support group. Further study of those risk factors having less relative risk using a larger sample is recommended. Early referral of individuals with suspected suicide potential for counseling strategies aimed at decreasing social isolation and improving quality of living may assist HD patients and families to cope with the added complexities of life with this disorder.

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