

Suicidal behavior in schizophrenia and family history of suicide

Suicide is a complex behavior with dramatic personal, familial, and economic consequences. "Suicidal behavior" refers to three different behaviors: completed suicide, suicide attempts (SA), and suicidal ideation. Completed suicide and SA, but not ideation, are behaviors on the same continuum and expressions of the same liability, according to family and biological studies.^{1,2}

Suicide is the leading cause of premature death in schizophrenia, and 2% to 12% of people who commit suicide suffer from schizophrenia. Harris and Barraclough³ estimated that the standardized mortality ratio ($[100 \times \text{sum of observed deaths}] / \text{sum of expected deaths}$) in schizophrenia is 845. Various studies have reported a lifetime suicide rate of 10% to 13% in people suffering from schizophrenia. Recently, Inskip et al⁴ reanalyzed most of the previous studies using generalized linear modeling. They concluded that this rate is closer to 4% (in this meta-analysis the lifetime suicide rate was 6% for affective disorder and 7% for alcohol dependence).

SAs occur quite often in schizophrenia: their frequency ranges from 20% to 55%. More than 50% of schizophrenic suicide attempters report more than one SA. SA is considered to be one of the most powerful predictors of future SA and completed suicide.

Genetic factors contribute to the liability to suicidal behavior, and heritability of suicidal behavior is estimated to be 45%.⁵ A family history of suicide increases the risk for suicide and SA.⁶ The impact of a family history of suicide has been studied mainly in depression, and much less frequently in patients with schizophrenia.^{6,7} It remains to be determined whether a family history influences SA characteristics in schizophrenia. The goals of the present study were twofold:

- To determine and compare the frequency of a family history of suicide in patients with schizophrenia and in normal controls.
- To determine the influence of a family history of suicide on the frequency of SA in patients with schizophrenia and on SA characteristics.

Methods

Subjects were over 18 years old and gave informed consent; all subjects had information on both parents. A total of 160 schizophrenic inpatients and 102 normal controls participated in the study. Information on history of personal and familial suicidal behaviors was obtained with the use of a structured interview. Suicide methods were classified as low and high lethality as defined in a previous study.⁸ Subjects were classified in the high-lethality group if they had made at least one high-lethality SA in their life. Normal controls were healthy volunteers recruited for phase I drug studies.

Results

The results of this study are summarized in *Tables I to IV*.

	Schizophrenic patients	Normal controls
Age (years)	34.2 (SD=13.2)	27.5 (SD=8.8)
Sex ratio (male/female)	2.6 (116/44)	11.7 (94/8)
Number of brothers	1.4 (SD=1.5)	1.2 (SD=1.3)
Number of sisters	1.4 (SD=1.4)	1.2 (SD=1.1)
Suicide attempters	50% (80/160)	

Table I. Demographics of the study population.

Number of SAs	2.9	(SD=3.9)
Multiple SAs	44%	(35 patients)
History of high-lethality SAs	51.2%	(41 patients)
Age at first SA (years)	24.3	(SD=8.8)
Psychiatric care before first SA	45%	(36 patients)
SA preceding current hospitalization	13.7%	(11 patients)

Table II. Characteristics of suicide attempters (for the 80 schizophrenics who had a history of suicide attempts [SA]).

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	Probands with a blood relative suicide victim	Probands with a first-degree relative suicide victim	Probands with a second- and third-degree relative suicide victim
Schizophrenic patients versus normal controls			
Schizophrenic patients	18.1% (29)	5.6% (9)	13.1% (21)
Normal controls	11.8% (12)	0%	11.8% (12)
Significance	NS	$P=0.008$	NS
Schizophrenic attempters versus schizophrenic nonattempters			
With a history of SA	26.2% (21)	7.5% (6)	20% (16)
Without a history of SA	10% (8)	3.7% (3)	6.2% (5)
Odds ratio	3.2	2.1	3.7
95% confidence interval	(1.4-7.6), $P=0.008$	(0.5-8.4), NS	(1.4-10.3), $P=0.01$

Table III. Effect of a family history of suicide.
SA: suicide attempt; NS: nonsignificant.

Conclusion

Half of the schizophrenic inpatients had a personal history of SA: they made their first attempt at an early age, and 44% of the suicide attempters made repeated attempts.

The frequency of having a blood relative who has committed suicide did not differ between schizophrenic subjects and normal controls, but schizophrenic subjects have a higher frequency of suicide in their first-degree relatives. This is in accord with the current conception of suicidality: suicidal behavior and psychiatric disorders have different origins, but suicidality needs the presence of a psychiatric disorder to be expressed as a suicidal behavior. A higher frequency of suicide in first-degree relatives in the schizophrenia group can be interpreted in two ways:

- Having a first-degree relative who committed suicide may worsen the course of schizophrenia in the probands and thus increases the risk of being an inpatient.
- Having a schizophrenic child or sibling can be a stress factor in first-degree relatives, who could subsequently develop a psychiatric disorder and suicidal behavior if they are prone to it.

In our study, a family history of suicide was associated with an increased risk of personal history of SA, higher-lethality SA, and multiple SAs. For this reason, a family history of suicide in schizophrenia should be considered as a risk factor for lethal suicidal behavior. □

SA lethality	
No SA	10% (8/80)
Low-lethality SA	20.5% (8/39)
High-lethality SA	31.7% (13/41)
Significance	$\chi^2 = 8.75, df=1, P=0.003$
Repeated SA	
No SA	10% (8/80)
One SA	20% (9/45)
Multiple SA	34.3% (12/35)
Significance	$\chi^2 = 9.67, df=1, P=0.002$

Table IV. Association between family history of suicide and suicide attempt (SA) lethality and repeated SA in the group of schizophrenic patients (Mantel-Haenszel χ^2 test for 3 groups): number and proportion of patients with a positive family history of suicide.

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