

Alcohol in suicide victims: A study from South Delhi

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Abstract

Eighty cases of suicide were received in the mortuary of All India Institute of Medical Sciences during the period of October 2007 to April 2008. All these cases were examined for blood alcohol concentration, the method and circumstances of the suicide, reports of past psychiatric history, reason for suicide and demographic variables. Of these, alcohol was found positive in 20% of suicide victims. In comparison to females (5.26%), 33.33% males had consumed alcohol at the time of suicide. Out of sixteen blood alcohol positive cases, 12 cases (75%) were in the age group of 21-40 years. Alcohol was found positive in 25.92% of married victims as compared to only 7.69% in unmarried. Among those who died by hanging and poisoning, an equal percentage of alcohol positive cases was found. In both low and middle socio-economic class, suicide victims consumed alcohol in the same pattern. Further, it was observed that the suicide victims, those who were educated, consumed alcohol in more number of cases (14) as compared to illiterate people (2). In 62 (77.5%) suicide victims, there was history of mental illness, of which 7 (22.58%) were found positive for blood alcohol while in 18 (22.5%) cases where, there was no history of mental illness, only one victim (11.19%) tested positive for blood alcohol.

Key words: Blood alcohol; Suicide; Hanging; Psychiatric illness

Introduction

Alcohol is the most widely used and abused drug of present time as well as past all over the globe. It was established by various studies that, the use of alcohol is an important risk factor for suicidal behavior from several angles. Usually, depression leads to alcohol use, and alcoholism leads to depression; this vicious cycle continues. The ingestion of alcohol before suicide may reduce the last instinctive hesitation of taking one's own life. The contemporary scientific literature confirms that individuals with alcohol abuse or dependence have higher suicidal ideation and a higher risk for attempted and completed suicide compared to persons without alcoholism.¹⁻³

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The study regarding the use of alcohol before suicide has been conducted predominantly in western, industrialized countries where people have lower rates of suicide. In India, more than one lac persons (1,13,914) with rate of 10.3% , lost their lives by committing suicide during the year 2005 (NCRB report)⁴. Hence, comprehensive reporting of toxicology test results for alcohol in suicide victims is necessary, which might help in the development of better suicide-prevention interventions.

Material and Method

The study was carried out at the Mortuary and Toxicology laboratory of Department of Forensic Medicine & Toxicology, AIIMS, New Delhi from Oct 2007 to Apr 2008. All cases of suicide brought to the mortuary by police for post-mortem examinations from South-Delhi jurisdiction during the above period were included. Information was obtained from the relatives of the deceased, investigating officers, hospital records, inquest papers and post-mortem examination findings. After putting normal incision 5 ml of blood was collected from left ventricle for laboratory analysis in all cases. All the samples were screened first for the presence of volatile compounds using Cavette test. The positive samples were tested quantitatively for alcohol using GLC (Gas Liquid Chromatography).

Results

Eighty cases of suicide were reported amounting to about 8.97% of all autopsied cases received in the mortuary of All India Institute of Medical Sciences during the period of Oct 2007 to Apr 2008. Blood alcohol was found positive in 16 cases, which was 20% of all suicide victims. There were 42 male (52.5%) and 38 female (47.5%) victims, of which alcohol was found positive in 33.33 % and 5.26% respectively (Table.1). In the age group of 21-40 years, there 12 cases were positive for alcohol (Table.2). Hanging (62.5%) was the preferred method of suicide followed by poisoning (35%), but in both methods, equal percentage of alcohol positive cases were seen (about 20%) (Table.3). Most of the suicide incidence occurred during 1200hrs to 1800hrs (n=26, 32.5%) followed by 1800hrs to 2400hrs (n=22, 27.5%), 0600hrs to 1200 hrs (n=20, 25%) and 2400hrs to 0600hrs (n=12, 15%). (Table 4).

As compared to married people, (25.92%) who consumed alcohol, only 7.69% of unmarried, consumed alcohol at the time of incident (Table.5). In low socio- economic group, there were 40 cases, of which 8 (20%) cases tested positive for alcohol, followed by middle socio-economic group (n=38) where 8 (21.05%) cases were found positive for alcohol (Table.6). Apparent precipitating factors for suicide included, marital problems (35%), other social disputes (25%) financial problem (25%) and health related issues (15%). (Table.7) In 62 (77.5%) suicide victims, psychiatric illness was present, of which 14 (22.58%) had taken alcohol before suicide. Of those (n=18, 22.5%) cases where no history of psychiatry illness was present, only two persons (11.19%) consumed alcohol (Table.8). Maximum blood alcohol concentration in the study was 116mg%, while minimum was 36mg%.

Table 1. Sex distribution

Sex	Total	%	Alcohol positive	%
Male	42	52.5	14	33.33
Female	38	47.5	2	5.26

Table 2. Age distribution

Age(yrs)	Total suicide	%	Alcohol Positive	%
0-10	0	0	0	0
11-20	22	27.5	0	0
21-30	30	37.5	6	20
31-40	16	20	6	37.5
41-50	10	12.5	2	20
51-60	2	2.5	2	100
>60	0	0	0	0

Table 3. Method of suicide

Method of suicide	No. of cases	%	Alcohol positive cases	%
Hanging	50	62.5	10	20
Poisoning	28	35	6	21.4
Firearm	2	2.5	0	0

Table 4. Time of suicide

Sl. No.	Time	No. of cases	%	Alcohol positive	%
1	24 hrs to 6 hrs	12	15	2	16.66
2	6hrs to 12 hrs	20	25	2	10
3	12hrs to 18hrs	26	32.5	6	23.07
4	18hrs to 24hrs	22	27.5	6	27.27

Table 5. Marital status

Marital Status	No. of Cases	%	Alcohol positive	%
Married	54	67.5	14	25.92
Unmarried	26	32.5	2	7.69

Table 6. Socio-economic status

Socio-economic status	No. of cases	%	Alcohol Positive	%
Low	40	50	8	20
Middle	38	47.5	8	21.05
High	2	2.5	0	0

Table 7. Reason for Suicide

Reason	No. of Cases	%	Cases positive for alcohol	%
Financial	20	25	6	30
Poor health	12	15	0	0
Marital discord	28	35	8	28.57
Other Social dispute	20	25	2	10

Table 8. History of mental illness (Depression)

Depression prior to suicide	No. of cases	%	Alcohol Positive	%
Yes	62	77.5	14	22.58
No	18	22.5	2	11.19

Discussion

I.K. Crombie et. al.⁵ in U.K, examined blood alcohol level of suicide victims and found that forty-five per cent of person had consumed alcohol and 19% of them were drunk (BAC >150 mg/dl) at the time of suicide. The use of alcohol prior to suicide was studied among American Indian decedents in New Mexico by P. A. May et al⁶. Sixty nine percent of victims were found positive for alcohol with some variance by major tribal cultural groups. According to MMWR Weekly⁷ report which summarizes Toxicology Testing and Results for Suicide Victims in 13 States of USA in 2004, 33.3% victims were positive for alcohol. The study by Bilban et al⁸ in Ljubljana region reported that, 25.4% of suicide victims were sober, 36.5% were lightly intoxicated, while rest were highly intoxicated. In our study, we found only 20% of individual ingested alcohol prior to committing suicide, which was much lower than most of the western studies. This is because of cultural differences and easy availability of alcohol in western countries. In the present study majority of the deceased who were alcohol positive were male as compared to female (33.33 % and 5.26% respectively). The male dominance of alcohol consumption in suicide victims is supported by study of Bilban et al⁸, who reported that men were drunk in 87.1% of cases, whereas in women, only 12.9% were drunk at the time of committing suicide. According to a study by P. A. May et al⁶, alcohol use prior to suicide was significantly more associated with males (71.2%) than in females (50%).

According to our study, maximum number of cases with positive blood alcohol was seen in the age group of 21-40 years. (n=12, 57.5%) In a study by Bilban et al.⁸ maximum number of suicide cases with positive blood alcohol were reported in the age group of 35-54 years. There was no clear cut relationship between age and the presence of alcohol at the time of committing suicide. (Crombie et al).

In our study, consumption of alcohol was not associated with a particular method of suicide, as equal percentage of blood alcohol positive cases were seen in suicides either by hanging or poisoning, which is supported by study of I.K. Crombie et.al⁵. However study by Bilban et al⁷ had revealed that victim who consumed alcohol prior to committing suicide, used firearm as method of choice for suicide in men and jumping from height in females. According to I.K. Crombie et al⁵ alcohol may play a more important role in the events leading to suicide amongst individuals with no previous psychiatric history. Alcohol misuse is strongly associated with depression and depression is strongly associated with suicide.⁹⁻¹¹ In the current study, more victims with history of psychiatric illness ingested alcohol prior to the act than victims without psychiatric illness.

This data regarding the relationship of alcohol use prior to suicides might be critical for better understanding of suicidal behavior of victims in this part of world for development of effective intervention for prevention of suicide.

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