

Burn-Suicide Attempt Retrospective Study

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ABSTRACT

This paper aims at showing the Hospital Universitário Evangélico de Curitiba Plastic Surgery and Burn Specialty Service's experience in cases of burn-suicide attempt in the period between January 1998 and January 1999.

Twenty-one adult patients were admitted to the Service for burn-suicide attempt. Age, gender, education, previous disease, use of medications, presence of psychiatric disorders and related internment, previous attempt, alcohol and drug abuse were assessed.

From the 21 patients, 17 were female and 4 were male. Third life decade was the most committed. Eleven attempts were lethal. Burnt body surface ranged from 20 to 95%. Most patients presented complete or incomplete first grade burn only. Fourteen patients had previous history of psychiatric disease and 6 had already previously attempted suicide. Alcohol abuse in 6 cases and toxicomania in 1 case were evident. Interpersonal relationship failure was the precipitating agent identified in 14 patients. The most used method was fire provoked by ethyl alcohol (85.7%).

We concluded that ethyl alcohol was the most used agent in this series of patients. The study showed that most cases occurred with average 40-year old patients, poor educated, presenting interpersonal relationship disorders and with more incidences of female subjects. One-third of the women had previously attempted suicide. About half of the patients succeeded in their attempts.

INTRODUCTION

Despite being an unusual and curious suicide attempt method in Western culture, self-incineration is however fairly regularly seen at Burning Specialty Regional Centers. Studies of authors from United States, Europe, Australia and India showed that these cases range from 1 to 9% of burnt patients admitted^(1,7) and correspond to approximately 2% of all suicide attempts⁽⁸⁾. Most patients are female, presenting also some associated psychiatric disorder. Agent type used varies depending on culture and country, alcohol being the most common agent in Brazil. This may be explained by the easy access to this product in our country and by its wide use in household tasks⁽⁹⁾.

A retrospective study on burn-suicide attempt from January 1998 to January 1999 is presented showing the Hospital Universitário Evangélico de Curitiba Plastic Surgery and Burn Specialty Service's experience.

PATIENTS AND METHODS

Patients were admitted to Hospital Universitário Evangélico de Curitiba Plastic Surgery and Burn Specialty Service from January 1998 to January 1999. All cases were retrospectively reviewed, including adult patients only. Only those proved through patient's confession or highly suspected by medical, psychological and familiar evaluation were included in the study.

When medical team and relatives suspected but had no evidences and patients denied suicide attempt, the cases were excluded. Daily psychological evaluation was carried out.

More severe cases, mainly those were inhalation compromising existed, were referred to the hospital intensive care unit and submitted to dressings at our service within around 2-day periods. Age, gender, education, previous diseases, use of medications, presence of psychiatric disorders and related internment, previous attempts, alcohol and drug abuse were assessed. Relatives provided some data.

RESULTS

During 1 year (January 1998 to January 1999), 21 cases of burn-suicide attempt were identified among 366 admissions due to burning in the same period. Seventeen (80.9%) of the 21 patients were female and

4 (19.0%) were male. Patients' age ranged from 13 to 67 years old. Third decade of life was the most frequent, with 10 patients (47.6%). Eleven from the 21 suicide attempts were lethal (52.3%) and the remaining 47.7% patients survived and were discharged after autograft or burning healing. Burnt body surface (BBS) ranged from 20 to 95% with a higher number of patients with BBS between 40 and 50% (9 patients - 42.8%). Seven patients presented BBS higher than 60%, 6 patients between 41 and 60%, 7 cases between 21 and 40% and one single case below 20% (Table II).

Seventeen patients (80.9%) presented only complete or incomplete first grade, 3 (14.2%) had complete or incomplete high school education and one single patient had university degree.

In this group of 21 patients, 14 presented previous history of psychiatric disease, depression being the most common pathology. Depression was diagnosed in 10 patients (47.6%), anxiety in 1 case (4.7%), bipolar disorder in 1 case (4.7%) and non-specific diagnosis in 3 cases (14.2%). Previous suicide attempts were reported in 6 cases (28.5%).

A precipitating agent could be identified in 16 (76.1%) of the 21 patients. Interpersonal relationship failure (divorce, quarrel with partner, widowhood) was found in 14 cases (66.6%). Another reported factor was unemployment (2 cases - 9.52%). Five cases (23.8%) presented no precipitating agent. No cases of chronic disease as precipitating agent or even suicide attempt bearing political connotation were found.

The most used method was fire provoked by flammable fluid poured over the body. This method was used by 18 patients (85.7%). Other methods included fire only (2 cases - 9.5%), and pouring of hot oil over body (1 case - 4.7%). In the two cases where causing agent was fire, this was provoked with the use of alcohol as flammable fluid to set fire to the house's rooms. The most common agent was alcohol, used by 18 patients (85.7%). Only 3 cases used another type of agent (kerosene, liquid wax and hot oil).

Alcoholism was identified in 6 cases (28.5%) and toxomania in just 1 case (4.7%).

Control population with burns at Hospital Universitário Evangélico de Curitiba Plastic Surgery and Burn Specialty Service in the same period corre-

sponds to 366 patients with around 70.7% (259 cases) males and 29.2% (107 cases) females. Lethal cases corresponded to 29 patients, which means a mortality rate of 7.9%.

DISCUSSION

Twenty-one cases of burn-suicide attempt were admitted to the Hospital Universitário Evangélico de Curitiba Plastic Surgery and Burn Specialty Service in 1 year period (from January 1998 to January 1999). This number corresponds to 5.7% of the total admissions in the same period, which is within admission limits described in literature. This figure ranges from 1 to 9% of the admissions to the Burning Care Centers^(1,7).

From the 21 patients attended, 17 (80.9%) were females and 4 (19.0%) were males. This data conflicts to those of literature that shows male predominance in burn-suicide attempts as reported by Shkrum & Johnson and Krummen and cols.⁽³⁾ O'Donoghue and cols.⁽¹⁰⁾, however, point out the existence of 2 separate groups of self-sacrificing patients: one formed by male patients, with no previous psychiatric history, typically succeeded in their mission and coming from community; and another group, formed by usually female patients, with previous psychiatric history, that may attempt suicide but typically show just a self-mutilating behavior and come from psychiatric institutions.

Female predominance also differs from burnt-patient control group (70.7% male) showing a more important suicide trend (suicide attempt) in female patients in our service. Men, however, succeeded more frequently as described in literature⁽¹⁰⁾.

In this study, average age was 40 years old but a greater number of patients in the suicidal group is still encountered at the third decade (10 cases - 47.6%). The study performed by Krummen also presented a larger group at third decade (41%)⁽¹¹⁾.

From the 21 attempts, 11 (52.3%) were lethal and 10 patients (47.7%) survived, being discharged after wound healing or autograft. Other studies presented mortality rate ranging from 29 to 84%^(1, 2, 4, 6, 10, 11). Lethality in burnt subjects control group was 7.9% in the same period, showing higher mortality rate with patients that attempted suicide by burning themselves, which confirms the other studies findings⁽¹¹⁾.

	Female	Male
Suicide attempt	17 (80,9%)	4 (19,0%)
Lethality	8 (38,0%)	3 (14,2%)

Relationship between gender, suicide attempt and lethality.

	20%	21-40%	41-60%	>60%
Male mortality	-	-	1	2
Male survival	-	1	-	-
Female mortality	-	1	2	5
Female survival	1	5	3	-
Total	1	7	6	7

Number of patients according to Burnt Body Surface (BBS) and mortality/survival rate according to gender.

The burnt body surface (BBS) ranged from 20 to 95% with a greater number of cases (9 - 42.8%) between 40 and 50% of BBS. Male lethality occurred with BBS above 41% only, while female lethality occurred between 21 and 40%.

The higher lethality rate, both male and female, occurs with BBS above 60%. This data confirm that of another study carried out in 1997⁽⁹⁾.

Educational degree assessment of selected patients shows that most of them had only complete or incomplete first grade (17 cases - 80.9%), 3 patients had complete or incomplete high school (3 cases - 14.2%) and just 1 patient had university degree (Economics - 4.7%). Only one study by Kaplan & Sadock⁽¹²⁾ was found showing major incidence of suicide attempts was among professionals, which contradicts our results.

We found 14 patients (66.6%) with previous psychiatric history, depression being the most common pathology (10 cases - 47.6%). Other studies presented percentage ranging from 21.5% to 71%^(1-5, 9, 11, 13) in relation to previous psychiatric disorders.

Kaplan reports that in almost 95% of the suicide attempt cases there is a diagnosed mental disease, with depressive disorders (80%) followed by schizophrenia (10%) being the most commonly found. This author states that the risk in depressive patients may come up to 15%⁽¹²⁾. Evaluation of previous suicide attempts showed that 6 patients (28.5% - 5 women and 1 man) attempted suicide in other occasions. Methods varied from tablet ingestion, fall from high

level, wrist cutting injury and attempt to throw him/herself in front of moving vehicles. Other authors report values between 44% and 71.8%^(3, 4, 5, 11).

Interpersonal relationship disorders (66.6%) among the precipitating agents of self-immolation attempts comprised most of the cases, similar to Krummen and cols⁽¹¹⁾ findings. Unemployment was the second more frequent factor (9.52%). Five patients (23.8%) did not present identifiable precipitating agent, a lower number than that found in literature (41.1%)⁽¹¹⁾. Our study found 3 cases of patients bearing chronic disease (2 hypertensive, 1 epileptic - 14.2%), quite less than that showed by another study in our country⁽⁹⁾; none of them, however, could be identified as precipitating agent. We have not found any case also of suicide attempt bearing political connotation, frequently found in Eastern culture⁽⁸⁾.

Our series found ethyl alcohol as main agent (85.7%); also liquid wax, kerosene and hot oil were used, which confirm Marchesan and cols.' study⁽⁹⁾. This fact may be attributed to easiness to obtain alcohol in our country, which is frequently used for household tasks. Variety of flammable agents used for burn-suicide attempt show that the agent depends on availability and culture in each study country. In relation to method used, 18 patients (85.7%) poured flammable liquid over their bodies and set fire to themselves, which confirms other study data^(1-5, 11).

Alcohol abuse was identified in 6 patients (28.5%) and only one case of drug use was found (4.7%). These findings are lower when compared to another study that showed alcoholism history in 35% of the patients and toxicomania in 21% of the cases⁽¹¹⁾.

CONCLUSION

Ethyl alcohol was the most used agent in this series of patients. The study showed that average age was 40 years old and most patients had poor educational level, presented interpersonal relationship disorders and more incidence of females. Suicide previous attempts occurred in approximately 1/3 of female patients. Around half of the patients succeeded in their attempt, the lethal rate being higher at male group.

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