Original Article

Self inflicted burn; a high tide

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Abstract

Objective: To highlight the demographic profile, various methods of self inflicted burn, and to probe into the problem by knowing various precipitating factors that may lead to self inflicted burn in our part of the country.

Patients and Methods: This is a study of 154 cases of self-inflicted burns treated at the Burn Emergency Unit of Liaquat University of Medical and Health Sciences Jamshoro Pakistan, during a period of 08 years. These self inflicted burns, were divided into two groups, those with suicidal intent called suicide attempter and those who mutilate themselves as self immolator. Except that these patients throughout the period of their hospital stay were under surveillance of a psychiatrist, they were managed according to the routine protocol of our unit. The patients were analyzed with respect to age, sex, method used for self inflicted burns, place of burn, psychiatric history, interpersonal problems, total body surface area (TBSA) burnt, depth of burn and outcome. The continuous variables were compared using t-test while for categorical data chi-square test was used. SPSS 15 was used as statistical software.

Results: The prevalence of self inflicted burns was 9.80% with a consistent rise in number of self inflicted burns from 2001 through 2008. The self immolators were significantly younger then suicide attempters. Males dominated in self immolators, while in suicide attempters female outnumbered males. The mean TBSA affected was significantly higher in suicide attempters when compared to self immolators. The mean hospital stay did not differ significantly in both groups. The mortality for self immolators was 6.38%, in contrast to suicide attempter where it was 33.65%.

Conclusion: The radical change in the socioeconomic condition of common people, traditional joint family system, political system and justice, has reflected as increased prevalence of self infliction both as self mutilators and suicide attempters (JPMA 60:338; 2010).

Introduction

Burn is the most devastating form of trauma and self inflicted burns are the severest among these. The self inflicted burns have serious physical, psychological, and financial effects not only on the individual, but also on the patient's family, and society. The prevalence of self burning varies considerably around different parts of the world. It is estimated to be as low as 1% in USA to almost 40% in other parts of the world.[1-8] These cases may be classified into suicide attempters and self immolators. In our system of joint family, suicide by burning may be the result of dowry or different interpersonal disputes; most common being that between mother-in-law and daughter-in-law. Self inflicted burns can be the result of acute or chronic psychiatric disorder, however in the recent past, prevalence of self immolation as political protest has considerably increased. The objective of this study was to compare the self mutilators with suicide attempters with respect to age, sex, mean total body surface area (TBSA) affected, depth of burn, mean hospital stay, outcome and various modes of self infliction. The various precipitating factors that lead to self immolation were also evaluated.

Patients and Methods

A comparative study of self burns was conducted, where self immolation without suicidal intent was compared with self burns with suicidal intent. The study was carried out at the Burns Emergency Unit of Liaquat University of Medical and Health Sciences, Jamshoro Pakistan, during a period of 08 years (from Jan 2001 to December 2008). Out of a total of 1572 admissions over this period, 154 cases (9.80%) were identified as self inflicted burns. After detailed examination, and available witness, these self inflicted burns, were divided into two groups, those with suicidal intent and self immolators. Suspected but unproven cases were excluded. The past medical history of all the patients was reviewed. Except that these patients throughout the period of hospitalization were under surveillance of a psychiatrist, they were managed according to the routine protocol of our unit. Emergency/elective Surgery was performed whenever indicated in appropriate cases. From available data of our unit, these patients were analyzed with respect to age, sex, method used for self inflicted burns, place of burn, psychiatric history, interpersonal problems, total body surface area (TBSA) burnt, depth of

burn and outcome. The depth was assessed clinically and considered favourable when 50% or greater of TBSA was affected by burns was either 1st or 2nd degree and unfavourable when 50% or greater of TBSA affected was either 2nd or 3rd degree burn. The continuous variables were compared using t-test while categorical data was analyzed with chi-square test. SPSS 15 was used as statistical software.

Results

During the period of study 1572 cases of burns were admitted in our centre. Among these 1198 cases were accidental burn, 220 were incidental burn and 154 cases of self inflicted burn. The overall prevalence of self inflicted burn was 9.80%. A consistent rise in number of self inflicted burn is observed from 2001 through 2008 as shown in Table-1. An 18 times increase in the prevalence of self inflicted burns was observed in 2008 when compared to 2001.

The demographic data of these self inflictors with respect to age, sex, mean total body surface area (TBSA) affected, depth of burn, mean hospital stay and outcome is shown in Table-2. The self immolators were significantly younger then suicide attempters (31.22 versus 24.22 years). Males (70%) dominated in self immolators when compared to females (30%), while in suicide attempters females (63%) outnumbered males (37%). The mean TBSA affected was significantly higher in suicide attempters as compared to self immolators (50% versus 22%). Only 18 self immolators were married while 72 suicide attempters were married. The resultant burn was mainly favourable in self immolators when compared to suicide attempters. The mean hospital stay did not differ significantly in both groups. The overall mortality was 6.38% in self immolators as compared to suicide attempters where it was 33.65%.

The most common method used for self inflicted burn in this series of patients was pouring kerosene oil and setting it on fire (75.32%), followed by the use of petrol (18.18%), spirit (1.94%), boiling liquids (1.29%), and acid (1.29%). One unmarried female patient aged 23 used nail polish remover as inflammable liquid and set it on fire as her parents were not willing to get her the desired new dress for her Birthday Party. Electricity was used as method of self inflicted burn by two patients in this series. One boy aged 18 climbed up the high tension electricity wire and held it with intent of suicide while a young girl aged 16 inserted her index finger into the house hold electricity socket to immolate her self.

The different precipitating factor(s) culminating to self inflicted burns identified in 148 cases are shown in Table-3. Unemployment, political protest, Obstinate and psychiatric illness were the common precipitating factors

Table 1:

Year	2001	2002	2003	2004	2005	2006	2007	2008	Total
Self-immolators	00	01	03	05	07	08	10	13	47
Suicide Attempter	06	07	09	11	15	18	19	22	107

Table 2:

Variables		Self-immolators	Suicide Attempters	p Value
Age		24.21 (0.868)	31.21 (0.736)	< 0.0001*
Male		33	40	0.470**
Female		14	67	0.0001**
Mean TBSA		22.10%	50.58%	< 0.0001*
Married		18 (38.30%)	72 (67.30%)	0.0001**
Depth of Burn	Favourable	35	37	0.9062**
	Unfavourable	12	70	0.0001**
Mean Hospital Stay		22.45	21.13	0.4635*
Outcome	Alive	44	71	0.000**
	Dead	03	36	0.000**

* Student T test
** Chi Square Test

Table 3:

Precipitating Factors	Self-Immolation	Suicide Attempters	Total
Un-Employment	13	21	34
Political Protest	19	-	19
Obstinate	3	1	4
Psychiatric Illness	2	4	6
Family Quarrels	3	33	36
Marital Disharmony	2	29	31
Love/Friendship Affairs	1	17	18
Total	43	105	148

for self immolation while family quarrels; marital disharmony, un-employment and love/friendship affairs were the commonest precipitating factors in suicide attempters. Only 5 (2.6%) patients were found to have a previous psychiatric history; of these, 4 patients had documented depression and one patient was known to have post partum psychosis. In 4 cases of self immolation and 2 cases of suicide attempters the precipitating factor(s) could not be identified due to continuous and firm silence of the patients and his/her family members after confession of the act.

Discussion

Pakistan is an Islamic state. Suicide/self harm is not only a condemned act in Islam but also an illegal act under Pakistan law; punishable with a jail term and financial penalty.[9] National rate for suicide/self harm are not known,[10] however evidence suggests that it has become a major health problem in Pakistan.[11] The prevalence of self inflicted burn in developing countries is reported to be as high as 40.3%,[12] in contrast to 1.95%[13] of USA and 4.1%[1] of Australia. During the period of this study the prevalence observed was 9.80%; however this showed a steep rise from 2001 through 2008, as also found by Malic C.C.[14]

Overall mortality for both groups of patients in this series was 25.32%. This is same as observed by Pham et al[15] but almost half as observed by Cameron DR.[1] The mortality rate after self inflicted burns is highly variable and ranges from 18-84%.[2,3,16]

In suicide group, married females outnumbered males; probably because in our society they are subjected to family quarrels and marital disharmony. The mean age, body surface area burnt and depth of the lesion were significantly higher in this group of patients when compared to self immolators, a finding identical to other series on this subject.[5,17,18] Larger TBSA and deeper lesions after burns with suicidal intent may be due to the fact that, in almost all cases, suicide is attempted in solitude and the agony tolerated deliberately beyond limits. The larger BSA and deeper lesions in such cases explain their prolonged hospital stay and higher mortality rate. In this group family quarrels and interpersonal conflicts with in-laws/husband were identified as the most common precipitating factor. Mehran et al[19] in their study on self burning also found 83% females most married, with an average age of 27 years. The dowry issue contrary to belief[20] was the underlying cause in only 5 patients. One married female deserves special mention; who after her first delivery developed post partum psychosis and instead of proper treatment and words of sympathy, she was reproached by her tyrant mother in- law by calling it "Drama". Ultimately she was so depressed that she attempted suicide. On the other hand for unmarried females most common factor was failure of love/friendship affairs.[12] Ours is a male dominated society and this reflects the high prevalence of self immolation among females. Kamaldeep Bhui et al[21] recently showed that there is higher rate of self harm among South Asian women, compared to South Asian men and White women; this finding proves that merely change of society is inadequate to change the inherited factors.

The most important clinical implication observed in suicide group was that the family members got polarized; into those who sympathized with the patients and others who condemned the act. The latter did not support the management of the patients. This combined with unwillingness to survive on the part of the suicide attempters aggravated the situation.

On the other hand self immolation was undertaken generally to show anger at the time of a dispute, and was done at open and crowded places. In this situation the victim accepted the help of the witnesses. This resulted in a lesser TBSA affected ($p = < 0.0001$) as compared to suicide attempters and therefore the lesion was favourable in most cases. This combined with males dominating the group, the overall mortality was insignificant when compared to suicide attempters. For self immolation the commonest precipitating factor was political protest followed by un-employment where the act was committed after getting tired of the economic burden. For four married females, family quarrels and marital disharmony were identified as the precipitating cause of self immolation. Un-employment as an inciting cause has been mentioned earlier for self immolation as political protest is unique in our part of the world.[22]

The self inflicted burns constitute a distinct clinical sub set, albeit small yet increasing workload and over burden the system as most of these patients require intensive care.[23] Some psychiatric characteristics have been recognized[24] in this sub set of patients, which demands multi-disciplinary approach. The projection at print/ electronic media and associated medico legal aspects[25] makes such cases high profile adding difficulty in the management.

Burns as method of self harm was chosen by majority of our patients. It was an imitation of various feature films or coverage by the electronic/print media. Only in a few cases self immolation was performed impulsively immediately following an

argument/conflict. As very few people know the agony of burns, the survivors received horrific scars which destroys not only their personal and family life but also their social life.

Conclusion

The socioeconomic condition of common people, traditional joint family system, political system and justice, has gone under a radical change in Pakistan. This is reflected as increased prevalence of self infliction both as self mutilators and suicide attempters. This high tide of self immolation is challenging and necessitates collaborative efforts between media, NGOS', public and religious organizations so that it may be controlled.

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