POST-TRAUMATIC STRESS DISORDER IN POLY-TRAUMA CASES

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ABSTRACT

Six hundred and one patients, who sustained injuries in militant activities, admitted during a 7 month period to a zonal referral hospital were studied. The majority, 54.6% from the Armed Forces and 38.8% from the para-military forces, were in the age group of 22-53 years. There were 40 (6.7%) civilian casualties. These were in the age group of 20-45 years. A large number (75.7%) of the casualties manifested with post-traumatic stress symptoms. 24.3% of them were rated as post-traumatic stress disorder. Six months follow-up revealed persistence of post-traumatic stress disorder in 17.1% of the cases. By one year, 42.1% who responded to the follow-up letters had persistence of post-traumatic stress disorder in 4.95%. Early recognition of this psychic trauma and preventive strategies are discussed.

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KEY WORDS : Post-traumatic stress disorder; Poly-trauma; Gun shot wounds

Introduction

Physical trauma is always accompanied by psychological distress though individual reaction varies. Terrorist violence and low intensity conflicts have become closely interwoven with human existence in the closing years of the twentieth century. Violence, injury, and death can come suddenly and unexpectedly in virtually any situation for the civilian and soldier alike. Thus, constantly living on the edge, the traumatized subject is rendered more vulnerable to post-traumatic stress disorder (PTSD) which has gained nosologic status relatively recently. Epidemiological estimates of lifetime prevalence of PTSD range from 1% to 9% along with high levels of chronicity and comorbidity [1,2]. While historically linked to military operations of war, it has been observed to follow a range of traumatic experience including volcano eruptions, violence, occupational accidents, sexual abuse, and even Australian bush-fires [3-7]. A chronic adjustment syndrome akin to PTSD has been reported among Vietnam veterans and 22% of the 64 Falkland war casualties were rated as having the complete PTSD at the end of 5

year follow-up [8]. The paucity of such reports in India, despite the several major wars and counter insurgency operations fought by our Armed Forces, might be attributed to a lack of inquisitiveness in this regard on the part of the treating clinician, and the patient's reluctance to disclose painful material coupled with discomfort amongst clinicians in discussing such horrifying events. The non-specificity of symptoms (e.g. headache, insomnia, irritability, anxiety, depression, substance abuse, and social or vocational dysfunction) attending PTSD also make its recognition more difficult [9].

This pilot study was undertaken in the aforesaid context at a zonal hospital where patients included members of the security forces who constantly faced a hostile environment where the threat would originate suddenly from the most unexpected quarter. Hence the members of the security forces were rendered particularly vulnerable to PTSD.

The study had three basic aims :

- a) To recognize PTSD in its earliest stages and institute appropriate therapy.

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- b) To attempt an assessment of incidence of the disorder.
- c) To assess the outcome of treatment through follow-up.

Material and Method

This study was conducted during May 92 to Jan 93 by the Departments of Psychiatry and Surgery of a hospital which receives casualties from military and para-military forces. Poly-trauma (3 or more injuries) cases injured directly or indirectly in militant-related operations constituted the material for this study. The casualties also included civilians. Those with previous history of mental illness or PTSD associated with earlier operations were excluded from the study. Diagnosis followed the criteria outlined in DSM III (R). Cases were diagnosed to be PTSD if the duration of symptoms persisted for more than 30 days. If the symptoms disappeared within 30 days the patients were classified as non-PTSD. Symptoms outlined in DSM III (R) are broadly divided into 3 groups [10].

- a) Re-experiencing the earliest trauma through nightmares, sudden involuntary acts, cold sweats, fear or apprehension as if the traumatic experience is happening again.
- b) Avoiding anything likely to remind the subject of the earlier trauma, inability to remember important events associated with the experience, decline in outside interests, feeling of detachment, alienation, and loss of capacity to express affection.

- c) Features of heightened irritability, hyper-arousal, sudden shock reactions, outbursts of anger, and insomnia.

As a first step the individuals life history was reviewed and the situational psychic profile was discussed with him to effect a global change in his life style. At the end of six months, the cases treated and discharged were followed up through a health status proforma signed by the individual duly verified by an officer of the unit where the individual was posted. Civilians were motivated to reply to follow-up letters to the greatest extent possible.

Results

Out of 601 consecutive admissions over a 7-month period, patients from the Armed forces numbered 328 (54.6%) with mean age 29.35 years, compared to 233 cases (38.8%) from para-military forces with a mean age 30.0 years and 40 (6.7%) civilians with a mean age 32.42 years. Majority of the casualties (65.6%) were in the age range of 21 to 30 years (Table 1).

Four hundred and fifty seven (75.7%) of the cases manifested with stress symptoms within 4 weeks of hospitalization. These were designated as non-PTSD cases. Only (24.3%) were rated to have developed PTSD during the hospitalization period ranging from 30 days to 180 days and beyond (Table 2). A detailed differential analysis of the cause of injuries revealed increase in the incidence of PTSD amongst the gun-shot wound and mine blast injury cases (Table 3). 94.4% (84 out of 89) who

TABLE 1
Profile of groups and age

Groups	Percent	Age groups (years)			
		21 - 30	31-40	41-50	> 50
Military (n=328)	54.6%	194	144	7	1
Para military (n=233)	38.8%	169	28	32	4
Civilians (n=40)	6.7%	31	6	3	—
Total (n=601)		394 (65.6%)	160 (26.6%)	42 (6.9%)	5 (0.8%)

Mean age of cases from Armed Forces = 29.35 ± 2.01

Mean age of cases from paramilitary = 30.0 ± 9.15

Mean age of cases in civilians = 32.45 ± 3.24

TABLE 2
Duration of symptoms

Duration of symptoms (Days)	No of cases	Percentage	Armed Forces	Para-military	Civilians
Non-PTSD					
7	113	18.8	48	60	5
8-14	197	32.8	123	64	10
15-29	145	24.1	90	47	8
PTSD					
30-180	142	23.6	66	61	15
> 180	4	0.7	1	1	2

(Chi square = 18.04, df=3, p < 0.01)

TABLE 3
Cause of injuries

Cause	Armed Forces		Para-military		Civilian	
	Non-PTSD	PTSD	Non-PTSD	PTSD	Non-PTSD	PTSD
Gun shot wounds n=237 (39.4%)	80	30	71	30	11	15
Mine blast n=165 (27.4%)	41	35	57	32	0	0
Bomb n=2 (0.33%)	0	2	0	0	0	0
Accidents n=177 (29.4%)	128	0	37	0	12	0
Miscellaneous n=20 (3.3%)	12	0	6	0	0	2
Total 601	261	67	171	62	23	17

Chi-Square = 23.85, df = 3, p < 0.01

TABLE 4
Injuries Profile

Type of Injuries	Armed Forces		Para-military		Civilian	
	Non-PTSD	PTSD	Non-PTSD	PTSD	Non-PTSD	PTSD
Viscera n=77 (12.8%)	10	20	4	20	18	5
Limbs n=81 (13.5%)	0	37	0	29	5	10
Genitalia n=8 (1.3%)	0	3	0	3	0	2
Others n=435 (72.4%)	251	7	167	10	0	0

Chi-square = 0.44, df = 3, p > 0.01

had sustained injuries to limbs and genitals had developed PTSD as compared to 12% of those who sustained injuries to viscera and other body parts (Table 4).

Six months follow-up of the 146 PTSD cases revealed improvement in 39.7% of the cases compared to those not improved (17.12%). Those who did not reply to the follow-up of letters amounted

TABLE 5

Follow up of PTSD (6 months), n = 146

	No of cases	Percentage	Armed Forces	Para-military	Civilians
Improved	58	39.7	29	27	2
Not Improved	25	17.1	15	10	-
Died	1	0.7	1	-	-
Not Known	62	42.5	22	25	15

Chi square = 0.965, df = 2, p > 0.01

TABLE 6

Follow up of all cases (12 months) (n=323)

	No of cases	Percentage	Armed Forces	Para-military	Civilians
Improved	115	35.6	63	50	2
Not Improved	16	4.9	9	7	-
Died	2	0.6	2	-	-
Invalided out	3	0.9	2	1	-
Not known	187	57.9	109	78	-

Chi square = 1.14, df = 2, p > 0.01

to 42.5% (Table 5).

A total of 323 follow-up letters were sent after completion of 1 year to all cases registered for the study. Only 136 subjects (42.2%) responded. 35.6% had improved. 4.9% said that they have not improved. 0.6% died and 0.9% had been invalided out of service. 57.8% did not respond to follow-up letters (Table 6).

Discussion

The full syndrome of post-traumatic stress usually develops sometime after the trauma. The delay can be as little as 1 week or as long as 30 years. Symptoms can fluctuate during this time span and may become more intense during periods of stress. Approximately 29% patients recover, 39% have mild symptoms, 24% show moderate symptoms and 8% remain unchanged or even worsen [11]. In our study 75.7% had mild to moderate symptoms with a duration of less than 30 days and these were designated as non-PTSD cases. 24.3% of the cases whose symptoms persisted beyond 30 days were diagnosed as PTSD cases (Table 2). At six months follow-up 39.7% had recovered while less than 20% had not improved. It is evident that PTSD is generally recognizable in the first few weeks after trauma. Soldiers in the

Armed Forces, due to their vigorous training and experience of service in different terrains, adapt better than their counterparts in para-military and civilian population. It is well known that emotional disturbances due to the trauma are stress orientated anxiety reactions, probably mediated through the neuroendocrine axis [10].

Not every one develops PTSD in the aftermath of a terrifying and dangerous event. Ross et al put the blame for the development of PTSD solely on the sleep disorder. On the basis of these assumptions antidepressants have been prescribed with varying success in the treatment of PTSD [13], success being often sustained when PTSD cases return to a regular sleeping pattern. Most of our subjects (75.7%) did recover with anxiolytics and antidepressants alone. In the so called 'grief symptoms' lucidly described by Lindemann [14], after a fire in the Boston club with 500 fatalities, a period of 4 to 6 weeks was thought to be sufficient for these symptoms to develop. Others later demonstrated that the process could take up to a year or more [10]. In our study 94.4% (84 out of 89) of the cases, who had lost their limbs and genitals and who were physically handicapped, showed a full blown picture of PTSD (Table 4). This is understandable in an individual who is forced to live a

handicapped life without recourse to pleasurable pursuits. Since 'sanity' involves a change in the whole person (attitude, conduct and emotional make-up), with intensive re-educative cognitive psychotherapy, supported by psychoactive drugs, PTSD symptoms were considerably reduced. The results at the end of 6 months showed a reduction in PTSD cases (Table 5). Although 42.5% did not respond to follow-up letters, the recovery rate was gratifying amongst those who did. At the end of one year 42.2% cases who responded to follow-up letters showed further improvement (Table 6).

It appears, therefore, that early identification followed by intensive crisis management points the way to reduce the development of PTSD at a later stage. As an eminent British psychiatrist at the beginning of the century had recognized, failure to recognize the disorder and the lack of opportunity to come to terms with the experience by reliving traumatic events allows the trauma to become fixated [10] and PTSD follows, a sad postscript to opportunities missed and sign posts ignored.

REFERENCES

1. Davidson JRT, Hughes D, Blazer DG. Post traumatic stress disorder in the community, an epidemiological study. *Psychological Medicine* 1991; 21 : 713-23.
2. Breslau N, Davis GC, Andreski P. Traumatic events and post traumatic stress disorder in an urban population of young adults. *Arch Gen Psychiatry* 1991; 48 : 216-22.
3. Shore J, Tatum E, Volmer W. Psychiatric reactions to disaster. The Mount St Helens experience. *Am J Psychiatry* 1986; 143 : 590-5.
4. Loughrey G, Bell P, Reddy R. Post-traumatic stress disorder and civil violence in Northern Ireland. *Br J Psychiatry* 1988; 53 : 554-60.
5. Shottenfeld R, Cullen M. Recognition of occupation induced PTSD. *Journal of Occupation Medicine* 1986; 28 : 365-9.
6. Deblinger E, Mcleer S, Atkins M. PTSD in sexually abused, physically abused and Neglect 1989; 13 : 403-8.
7. Cervantes PR, Ingrid VBC. Post traumatic stress in immigrants from Central America and Mexico. *Hospital and Community Psychiatry* 1989; 40 : 615-9.
8. Obrien LS, Hughes SJ. Symptoms of post traumatic stress disorder in Falklands veterans five years after the conflict. *Br J Psychiatry* 1991; 159 : 135-41.
9. Davidson J. Drug therapy of post traumatic stress disorder. *Br J Psychiatry* 1992; 160 : 309-14.
10. Berthold PR, Ingrid VBC. Post traumatic stress disorder. The history of a recent concept. *Br J Psychiatry* 1992; 161 : 742-8.
11. David KJ. Post traumatic stress disorder. In : Kaplan HI, Benjamin J, Editors. *Comprehensive Text Book of Psychiatry* 5th ed. Baltimore, Williams and Wilkins 1985 : 1000-8.
12. Ross RJ, Ball WA, Sullivan KA. Sleep disturbance as the hallmark of post traumatic stress disorder. *Am J Psychiatry* 1989; 146 : 697-707.
13. Frank JB, Kosten TR, Giller EL. A randomized clinical trial of Phenelzine and imipramine for post traumatic stress disorder. *Am J Psychiatry* 1988; 145 : 1289-91.
14. Lindemann E. Symptomatology and management of acute grief. *Am J Psychiatry* 1944; 101 : 141-8.