

Elderly Trauma: Causes and Outcome

Dear Editor,

Trauma is the 5th cause of mortality of the elderly in Western countries which results in increased short and long term mortality.¹ Post-trauma mortality is twice for every 10 years after the second decade of life.² The mortality rate in elderly trauma patients was reported 15-19% which is twice as much as trauma patients with younger ages and 80% of spared trauma patients require long-term or permanent care.²

From September 2001 to August 2003, of 47425 patients who referred to Mashad Emdadi Hospital in western Iran 19527 were admitted according to the cause of trauma. At the time of arrival, age, sex and the cause of the trauma were recorded. Patients with severe and considerable traumas were hospitalized. Also, the expired cases that were admitted in the hospital and had undergone diagnostic procedures were recorded. One hundred and thirty of daily admissions were trauma patients. During the study, 825 injury and trauma patients over 65 were admitted, 166 of whom expired which was 24.1% of all expired cases of all ages. The admitted and expired cases of the elderly and those in the <65 age groups were shown in Table 1. There was a significant difference between the age groups. The causes of injury and trauma in the elderly and those in the <65 years age groups were shown in Table 2. There was a significant difference for causes such as accident, strike of foreign body and

quarrel but the difference was not significant for fall, bite, gunshot wound and self- striking.

Treatment of the elderly trauma patients in special centers can result in better treatment of potentially fatal injuries and satisfactory conditions at the time of discharge.³ In the study of Johanson et al., the hospitalization rate due to fracture of a bone in the elderly was 47%, which considerably differs from 12% of our trauma patients under the age of 65.⁴ Regarding considerable promotion in the light of social health and increased number of the elderly, attention to health problems of this age group is a sine qua non. The elderly constitute a small proportion of injury and trauma patients as in this study in which 3.4% of those referred and 4.2% of the admitted patients consisted of the elderly. Although, due to the associated underlying disease and age induced physiologic changes in this group, a great proportion of trauma-precipitated mortality belongs to this group, which was 24.1%. To decrease the mortality rate of this age group, extensive association of general surgeons, brain and neurology surgeons, and orthopedist are required. Hospitalizing these patients in special units with skilled nurses can diminish the mortality rate in this age group to a large degree.³

In the study of Cartner et al.⁴ and also Sterling et al.⁵ the cause of trauma in the elderly accounted for 48% and 51%, respectively, which was considerably different as compared with that in the young patients

Table 1: Age distribution of trauma patients

	Age ≥65 years No. (%)	Age < 65 years No. (%)	Total No. (%)
Referred	1634 (3.4)	45791 (96.6)	47425 (100)
Admission	825 (4.2)	18702 (95.8)	19527 (100)
Death	166 (24.1)	523 (75.9)	689 (100)

Table 2: Causes of injury and trauma

	Age ≥65 years No. (%)	Age < 65 years No. (%)	Total	P value
Accident	861 (52.7)	15730 (34.4)	16591	0.001
Fall	543 (33.2)	15496 (33.8)	16036	0.631
Strike of foreign body	134 (8.2)	9084 (19.8)	9218	0.001
Quarrel	78 (4.8)	5122 (11.2)	5200	0.001
Bite	13 (0.8)	219 (0.5)	232	0.099
Strike of bullet	5 (0.3)	106 (0.2)	111	0.437
Self striking	0 (0)	34 (0.1)	34	0.632

(7%).⁶ In our study, two major causes were accident (52.7%) and fall (33.2%), respectively. This can be largely attributed to inattention to the elderly during driving and crossing streets, which are potential dangers for the well-being of the elderly.

It should be noted that for the purpose of achieving the optimal therapeutic results, one should design the diagnostic and therapeutic protocols allocated to this specific age group and pay multidimensional attention to the current underlying disease and injury.

In conclusion, multidisciplinary special triage protocols, managements and discharge planning are needed.

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References

- 1 McGwin G Jr, Melton SM, May AK, Rue LW. Long term survival in the elderly after trauma. *J Trauma* 2000;**49**:470-6. [11003325] [doi:10.1097/00005373-200009000-00014]
- 2 Albaugh G, Kann B, Puc MM, Vemulapalli P, Marra S, Ross S. Age-adjusted outcome in traumatic flail chest injured in the elderly. *Am Surg* 2000;**66**:978-81. [11261629]
- 3 Tepas JJ 3rd, Veldenz HC, Lottenberg L, Romig LA, Pearman A, Hamilton B, Slevinski RS, Villani DJ. Elderly injury: a profile of trauma experience in the Sunshine (Retirement) State. *J Trauma* 2000;**48**:581-4. [10780587] [doi:10.1097/00005373-200004000-00001] [doi:10.1097/00005373-200001000-00009]
- 4 Carter SE, Campbell EM, Sanson-Fisher R, Gillespie WJ. Accidents in older people living at home: a community-based study assessing prevalence, type, location and injuries. *Aust N Z J Public Health* 2000;**24**:633-6. [11215016] [doi:10.1111/j.1467-842X.2000.tb00532.x]
- 5 Sterling DA, Oconnor JA, Bonadies J. Geriatric false: injury severity is high and disproportionate to mechanism. *J trauma* 2000;**50**(1):116-9 [] [doi:10.1097/00005373-200101000-00021]
- 6 Grant PT, Henry JM, McNaughton GW. The management of elderly blunt trauma victims in Scotland: evidence of ageism? *Injury* 2000;**31**:519-28. [10908745] [doi:10.1016/S0020-1383(00)00038-3]