

TABLE 2
CAUSES OF HEAD INJURY

Causes	No. of Patient	%
RTA	116	60
Falls	54	28
Assault	14	07
Fir-arm	06	03
Misc.	03	02

Discussion

Of these 193 severe head injury patients 13 needed endotracheal intubation, 17 had to have tracheostomies, and 11 patients were ventilated. Nasogastric feeding⁹ was commenced in all head injury patients within 48-72 hours of admission, full caloric intake was achieved by 6-8 days of injury. Thirty two patients (16.5%) presented with CSF leak through ear or nose¹⁰ but only 4 patients (2%) developed meningitis. Twenty five patients (13%) had focal or grandmal seizure, 19 patients had single or multiple cranial nerve palsies (commonest being facial nerve). Pulmonary and urinary tract¹⁰ infections were the commonest cause of fever, specially in elderly patients. Associated injuries⁷ were mostly craniofacial soft tissues 25% .extremities fractures 13% and only 12% patients had facial bone fractures. We looked at the factors contributing to mortality and morbidity¹¹ both in the prehospital and hospital phase. We observed that Glasgow Coma Scale on admission, age ,pupillary inequality and CT scanning findings were the main factors contributing to the ultimate out come in severe head injury patients. Entry criteria¹² were a GCS 7 or less after non surgical resuscitation within 6 hrs.; of the injury or deterioration to that level within 48 hrs. Largest number of our patients were adults where as mortality was highest in elderly people, 95% of these patients with GCS 5 or less died with in 12—24 hrs. of admission. Among the elderly patients 82% died mostly due to secondary organ failure⁸, 18% survived with poor functional recovery and were totally dependent. Out of 116 adults 77% died, those survived made good recovery with moderate disability at 6 months after discharge from the department. Paediatric patients showed best results, 49% died and fuctional out come was good with moderate disability in 51% patients. Minimal follow up period was 6 months in these patients. We think that early assessment and acute treatment of patients with severe head injury patients requires a well structured policy¹³. This policy should include rapid transport to, and effective first aid in trauma centers especially equipped for this purpose. Prevention strategies¹⁴ that reduces the likelihood of motor vehicle crashes or injuries to the occupants and pedestrians will also prevent head injuries. There should be strict rules as

regards wearing helmets for the motor cyclists, 55 m.p.h. speed limits and safety belts for the front and rear seat positions. Lastly there should be a strict punishment for the drunken and addict drivers.

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References

1. Walleck CA, Preventing secondary brain injury, Aacn Clinical issue in Critical Care Nursing ,1992 ,3(1):19—30.
2. Honnart D et all. Early management of severe brain ,ologie. 1991, 32(1): 77-9.
3. Gugg E.Mohenipour I, Surgical treatment of acute craniocerebral trauma. Aktuelle Traumatologie.1991, 21(2):35—9.
4. Doberstein CE, Hovda DP, Becker DP. Clinical consideration in the reduction of secondary brain injury. Annals of Emergency Medicine; 1993, 22(6):993—7.
5. Lanza DC et all, Value of Glasgow coma scale for tracheostomy in Head injured patients. Annals of Otolaryngology h Laryngology 1990; 99 (1):38—41.
6. Siricilo SF, Severity and out come of intracranial lesions in pedestrians induced in by motor vehicles. Journal of trauma; 1992;33(6):899—903.
7. Turet L.Hausher E. The epidemiology of head trauma in Aquitain(France) 1986.a community based study of hospital admissions and death. International Journal of Epidemiology; 1990 ,19(1):133-40.
8. Pennings JL. et al. Survival after severe head injury in the aged. Archives of surgery. 1993 128(7):787—93; discussion 793—4.
9. Kirby DH. Early enteral nutrition after brain injury by percutaneous endoscopic gastrojejunostomies. Jpen J; of parenteral and enteral nutrition, 1992, 15(3):298—302.
10. Marion DW. Complications of Head injury and their therapy. Neurosurgery Clinics of North America. 1991;2(2):411— 24.
11. Feldman Z. Zuker G. Greenberg I. et al. Outcome of immediate management of severe head injuries. Hasefuah. 1991.121 (1—2): 8—10
12. Fearside MR, The Westmead head injury project outcome in severe head injury. British J Neurosurg. 1993;7(3):267—79.
13. Van Alphen HA, Revised Guide lines for the treatment of patients with severe traumatic brain injury. Nederlands Tijdschrift Voor Geneeskunde.1990 ,13; 134 (41)2003-7.
14. Young W, Prevention of brain trauma by legislation, regulations and improved technology; a focus on motor vehicles. Journal of Neuro trauma. 1992; 1;s313—6.

MANAGEMENT OF SEVERE HEAD INJURY PATIENTS

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Abstract

Severe head injuries (Glasgow Coma Score less than or equal to 7) is associated with high mortality and morbidity which can be improved by early energetic therapy. We are presenting a study of 481 head injury patients admitted in our department during the period 1991 to 1993. Forty percent (193 patients) of them had severe head injuries (GCS 7 or below). Majority of them were the victims of road traffic accidents (RTA) 60%, the next common cause of trauma was fall from height 28%. They were between the ages of 1 month to 80 years. Despite aggressive surgical treatment and intensive care 80% patients died. In the age groups of 16 to 60 years and 60 to 80 years the mortality rate was 77% and 82% respectively. In the younger group of patients upto 15 years the mortality rate was 49%. Fiftyone percent of patients were treated surgically. We are recommending more efficient system of prehospital services, controlling ventilation, haemodynamics and avoiding any increased intracranial pressure and speedy and safe transportation of these patients to specialised neurosurgical centres by the peripheral hospitals.

Key Words : Trauma, Head Injury, Glasgow coma Scale.

Introduction

Head injury is not a single disease with a constant set of clinical manifestation and a predictable clinical course. Instead, mechanical injury of the brain and its coverings may initiate an avalanche of pathophysiological responses. Head injury renders the brain vulnerable to a variety of secondary insults that must be prevented or promptly corrected¹ before irreversible neurological damage occurs.

Patients and Method

Our study includes 481 head injury patients admitted to the Neurosurgery department of Allied hospital, Faisalabad, during three years period (1991-93). All these patients were referred to us by the accident and emergency department. The severity of head injury was assessed according to the Glasgow Coma Scale (GCS), and 193 patients

with GCS 7 or less² were included in this study.

As soon as the patients arrived in the neurosurgery department they were given the first line of protocol³⁻⁴ i.e. adequate air way, intravenous access and indwelling catheter. According to their haemodynamic status fluids were given including an stat intravenous dose (.5mg—1gm/Kg body wt.) of 20% manitol. Oxygen was administered either through venturi masks or they were ventilated depending upon their clinical condition. Tracheostomy⁵ was done in those patients who could not maintain their airway. Prophylactic antibiotics were given to the patients with cerebrospinal fluid (CSF) leak. X-rays of the skull were done for all, and CT scanning in 154 patients (80%)⁶. Seventyseven percent of these had some sort of intracranial lesion (extradural, subdural or intracerebral haematomas). Fiftyone percent patients were treated surgically, emergency surgery was done for patients who had depressed fracture or surgically remediable intracranial lesions. A few patients had exploratory burr hole rest of them were treated conservatively.

Results

Our study included 193 severe head injury patients. Of these 22 patients belonged to elderly group i.e. 60 years and above. Largest number of patients belonged to adult group 116 patients (age 16—60 years) and 55 paediatric patients (Table—1). Sixty percent of the patients had road traffic accident and the fall⁷ from the height was the next common cause of the head injury (Table—2). Fiftyone percent patients were treated surgically, 49 patients had elevation of depressed fractures, removal of extradural haematomas 20, subdural haematoma 18 and intracerebral clot in 13 patients was carried out. Among the elderly group⁸ 18 patients (82%) died as compared to 90 patients (77%) adults and 27 paediatric patients (49%).

TABLE I
AGE OF MORTALITY OF SEVERE HEAD INJURY PATIENTS

Age (Years)	No. of Patients	Mortality (no. of patients)	(%)
0-15	55	27	49
16-60	116	90	77
60-80	22	18	82

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