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Original Research Article

Head injury patients at a tertiary health care center

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ABSTRACT

Background: Head injury is a significant reason for high dreariness and mortality, especially in youthful and useful age bunch patients. As per the World Health Organization report on street security, road traffic accidents (RTAs) would be the fifth driving reason for death worldwide constantly 2030. Larger part of the head wounds are ramifications of street auto collisions (RTAs), falls, attacks, or wounds, happening either in the work environment, during sport, and so forth. Present study was aimed to study patients with head injury coming to our tertiary care center.
Methods: Present study was a prospective, observational type, conducted in patients with head injury who were admitted under the department of surgery during study period.
Results: After applying inclusion and exclusion criteria, total 230 patients were considered for present study. 57% patients were from 21-50 years age group. Male to female ratio was 2.6:1. RTAs (63%) was most common cause of head injury in present study followed by assaults (20%) and fall from height (10%). 63% patients had mild head injury, while 21% and 16% patients had moderate and severe head injury respectively. Total 17% deaths were noted in present study. Outcome worsens with worsening of severity of head injury.
Conclusions: Trauma remains leading cause of head injury in present study. Necessary preventive measures and vigorous training of all medico and para-medico staff for early management of head injury can definitively reduce mortality and morbidity due to head injury.

Keywords: Head injury, Mortality, Glasgow coma score

INTRODUCTION

Head injury is an important cause of high morbidity and mortality, particularly in young and productive age group patients. The burden of head injury is greatest in low and middle income countries (LAMIC), where 85% of the worlds population live.[1] As per the World Health Organization (WHO) report on street security, road traffic accidents (RTAs) would be the fifth driving reason for death worldwide continuously 2030.[2] Majority of the head wounds are ramifications of street car crashes (RTAs), falls, attacks, or wounds, happening either in the working environment, during sport, and so forth Usually vehicular mishaps occur with bikes because of enormous number of 2 wheel vehicle, helpless street condition. The most unmistakable and weak piece of human body is head which is more powerless for injury in street car crashes. Outside powers hitting the head sufficiently hard to cause mind development cause horrible cerebrum injury (TBI). Wounds incorporate those with skull crack and those without skull break (shut head wounds). Speed increase, deceleration, rotational powers, and infiltrating objects act to cause tissue gash, pressure, strain, shearing, or a mix, bringing about essential injury.[3] The lethality of injury relies upon measure of strike power, skull properties at the mark of the contact, thickness of scalp, and measure of hair and thickness and flexibility of individual skull.[4]

Present study was aimed to study patients with head injury coming to our tertiary care center.

METHODS

Present study was a prospective, observational type, conducted in department of surgery, S.N. Medical College, Agra. Duration of study was 1 year (November 2019 to November 2020). Approval was obtained from institutional ethical committee for present study.

Inclusion criteria

All patients with head injury whose having either Glasgow coma scale less than or equal to 14 or history of loss of consciousness, vomiting, ear nose and throat (ENT) bleed or seizure were admitted under the department of surgery during study period were included in present study.

Exclusion criteria

Patients comes after 24 hours of head injury, worked outside, not able to take an interest in present review and obscure patients were avoided.

Written informed consent was taken from relatives of patients for participation in present study. Demographic, clinical details collected from history and clinical records available. All patients were managed as per standard operative protocols of department. Laboratory investigations done were hemoglobin, total and differential leukocyte counts, hematocrit, blood urea and serum creatinine, random blood sugar, and serum electrolytes, X-rays skull, chest, limbs, and spine and plain computed tomography (CT) head were done in each patient on admission. Outcome was measured at the time of discharge using Glasgow outcome scale. Follow up was kept till 3 months from discharge. Statistical analysis was done using statistical package for the social sciences (SSPS) software and analysis was done.

RESULTS

As shown in Table 1 after applying inclusion and exclusion criteria, total 230 patients were considered for present study. 57% patients were from 21-50 years age group. Male to female ratio was 2.6:1.

Table 2 shows RTAs (63%) were most common cause of head injury in present study followed by assaults (20%) and fall from height (10%).

Table 1: Age and gender distribution.

Age group (years)	Male		Female	
	No.	%	No.	%
Up to 10	26	10.0	13	5.0
11-20	28	10.8	12	4.6
21-30	45	17.3	13	5.0
31-40	46	17.7	12	4.6
41-50	20	7.7	4	1.5
51-60	17	6.5	1	0.4
Above 60	18	6.9	5	1.9
Total	200	76.9	60	23.1

Table 2: Causes of injury.

Mode of injury	Number of cases	Percentage
Road traffic accidents	145	55.8
Assaults	49	18.8
Fall from height	34	13.1
Miscellaneous	21	8.1
Falling objects	11	4.2
Total	260	100

In Table 3 post-resuscitation Glasgow coma score (GCS) was used for categorizing the severity of head injuries. Based on the postresuscitation GCS, the head injury was categorized as minor head injury (GCS 13-15), moderate head injury (GCS 9-12) and severe head injury (GCS 8 or less). 63% patients had mild head injury, while 21% and 16% patients had moderate and severe head injury respectively. Total 17% deaths were noted in present study. Outcome worsens with worsening of severity of head injury.

Table 4 shows most RTAs and fall from height patients had multiple injuries. Fractures in extremities (21%), cervical spine (13%), lung and pleura (10%), dorsal spine (7%) were common associated injuries noted in present study.

As shown in Table 5 on CT scan multiple lesions were present in same patient. Contusions (50%), fractures (40%), brain edema (35%), extradural hematoma (23%), subdural hematoma (15%) were common findings noted (Table 5).

Table 3: Glasgow coma score on admission and Glasgow outcome score on discharge.

Glasgow coma score	Glasgow outcome score					Total (%)
	Death	Persistent vegetative state	Severe disability	Moderate disability	Good recovery	
Mild (13-15)	13	5	3	2	132	155 (59.6)
Moderate (9-12)	17	5	5	8	23	58 (22.3)
Severe (3-8)	15	7	8	8	9	47 (18.1)
Total (%)	45 (17.3)	17 (6.5)	16 (6.2)	18 (6.9)	164 (63.1)	260

Table 4: Lesion on CT scan in head injury patients.

Associated injuries	Number of cases	Percentage
Extremities fracture	45	17.3
Cervical spine	29	11.2
Lung and pleura	21	8.1
Dorsal spine	18	6.9
External injuries of head		
Scalp	178	68.5
Face	120	46.2

Table 5: Lesion on CT scan in head injury patients.

Lesions	Number of cases	Percentage
Contusions	120	46.2
Fractures	93	35.8
Brain edema	84	32.3
Extradural hematoma	56	21.5
Subdural hematoma	38	14.6
Subarachnoid bleed	27	10.4
Intraventricular blood	20	7.7
Diffuse axonal injury	9	3.5
Infarcts	11	4.2
Pneumocephalus	8	3.1
Brain stem lesions	5	1.9
Subdural effusions	4	1.5

DISCUSSION

Trauma is a major cause of morbidity and mortality in both developed and developing countries. The usual causes are RTAs, fall from height, occupational injuries, and assault. Mortality and morbidity due to head injury can be easily prevented by prevention and adequate management in first golden hour.

In our review, 21-50 years age gatherings (57%) were the significant endures which are like other studies.[5] We noted male to female proportion as 2.6:1. Comparative male prevalence is additionally seen in numerous other studies.5 Men for the job are away from homes in contrast with ladies who are normally housewives. Most of the drivers or mechanics in the vehicles or apparatus as a calling are men who increment the danger of mishaps more in men. Guys are transcendently occupied with outside exercises and activity of vehicles and subsequently are more helpless against wounds. Street car crash was the main source of extreme head injury representing 63% of patients. It was trailed by attack (20%) and fall (10%) which is comparable with other studies.[6] Severe head injury represents over half of injury related passing's; these normally happen following street auto collisions, attacks, and falls. Fakhry et al.[8] in their review observed 28.8% death pace of seriously head harmed patients.[7] It has additionally been shown that growing (low and center pay) nations have a pooled death pace of 51% for extreme head wounds when contrasted with 30% for top level salary countries.[1] The need to execution of wellbeing conventions and the future movement of the injury trouble was underscored by WHO way back in 1990's, expressing injury will rise the best 10 reasons for sickness trouble from the 10th situation to third by 2020 globally.[1] Agrawal et al noticed a general mortality of 22% with the mortality for seriously head harmed patients being is 36%.[9]

Alcohol utilization in drivers is likewise a significant reason contributing variable in street car crash cases. Narwade et al noted 62.4% liquor utilization in their review.[9] Liquor utilization in drivers contributed not exclusively to their wounds yet in addition made critical damage other vehicular travelers and walkers. Chaudhury et al tracked down GCS, GCS<8, old age, enlarged understudy, extensor inflexibility, and changed pulse as hazard factors with terrible anticipation.[10] Scalp injury with skull break alongside intracranial drain was the most well-known show of head injury. The transcendence of wound and cut in scalp can be clarified by the substantial gruff power, free areolar space accessible for blood gathering underneath scalp, negligible muscular build of the scalp and the speed of casualty to fall on the ground.[11] Studies have revealed 34 to 35% of skull breaks among horrendous cerebrum injury patients.[12]

Between 5% and 10% of head wounds have a related cervical spine injury.[13] Such a physical issue can be prohibited in practically all cases with a mix of registered tomography (CT), attractive reverberation imaging, or flexion-expansion radiography of the neck and should clinical doubt show it.

CONCLUSION

Injury stays driving reason for head injury in present review. Important preventive measures and fiery preparing of all medico and para-medico staff for early administration of head injury can conclusively diminish mortality and bleakness because of head injury. This study being an observational study need more study to find the cause and prevent the head injury.

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