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Original Research

Assessment of incidence of head injury

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ABSTRACT:
Background: Head injury is defined as any trauma to the head other than superficial injuries to the face. The present study was conducted to assess incidence of head injury. **Materials & Methods:** 68 victims of head injuries of both genders were enrolled and pathological fracture, pattern of skull fracture, intracranial haemorrhage and other major injuries were noted during examination. **Results:** Age group 0-20 years had 5 males and 2 females, 20-40 years had 20 males and 14 females, 40-60 years had 9 males and 8 females and >60 years had 6 males and 4 females. Type of incidence was Pedestrins was 14, motorcyclist in 20, 2- wheeler in 18 and Car/Bus in 16. Type of meningeal hemorrhage was subdural in 36, subarachnoid in 14 and epidural & subdural in 16 cases. Site of fracture was frontal in 24, parietal in 20, temporal in 10 and occipital in 8 cases. The difference was significant (P< 0.05). **Conclusion:** Maximum cases were seen in age group 20-40 among motor cyclists.
Key words: Head, Trauma, Hemorrhage

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INTRODUCTION

Head injury is defined as any trauma to the head other than superficial injuries to the face. Head injury is used much more commonly than the several rubrics of the International Classification of Disease (ICD) which it encompasses; yet the term itself is not recognized as an entity in this classification.[1] In practice it can embrace all degrees of severity from a symptomless bump to a blow which causes overwhelming brain damage. Yet what is necessary for an incident to qualify as a head injury is by no means self-evident.[2]

Most of the injuries and fatalities world wide are caused by Road traffic accidents (RTA). An estimated 1.2 million people are killed each year and around 50 million are injured due to RTA occupying 30-70% of orthopedic beds in hospital of developing countries.[3] Developing countries bear a large share of the burden, accounting for 85 percent of annual death and 90 percent of the disability adjusted life years (DALYs) lost because of road traffic injury.[4] RTA represents 45 - 50 % of the causes of head injury and young adults were the most common victim. Every form of transportation has its own risks and due to the momentum caused by high speed engine used in the new motor vehicles, often the consequences of an accident are made bigger.[5] The present study was conducted to assess incidence of head injury.

MATERIALS & METHODS

The present study comprised of 68 victims of head injuries of both genders. The consent from relative or family members of all cases was obtained.

Data pertaining to cases such as name, age, gender etc. was recorded. Parameters such as pathological fracture, pattern of skull fracture, intracranial haemorrhage and other major injuries were noted during examination. Results thus obtained were subjected to statistical analysis. P value less than 0.05 was considered significant.

RESULTS

Table Age and gender wise distribution

Age group (Years)	Male	Female	P value
0-20	5	2	0.09
20-40	20	14	
40-60	9	8	
>60	6	4	
Total	40	28	

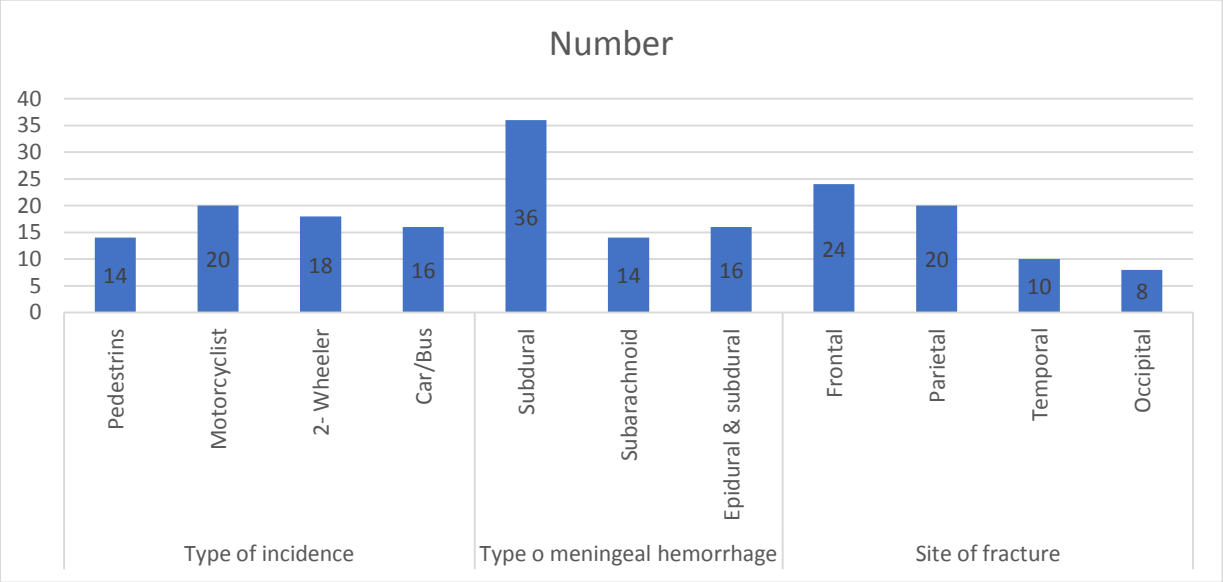
Table I shows that age group 0-20 years had 5 males and 2 females, 20-40 years had 20 males and 14 females, 40-60 years had 9 males and 8 females and >60 years had 6 males and 4 females. The difference was non-significant (P> 0.05).

Table II Assessment of parameters

Parameters	Variables	Number	P value
Type of incidence	Pedestrins	14	0.91
	Motorcyclist	20	
	2- Wheeler	18	
	Car/Bus	16	
Type o meningeal hemorrhage	Subdural	36	0.05
	Subarachnoid	14	
	Epidural & subdural	16	
Site of fracture	Frontal	24	0.80
	Parietal	20	
	Temporal	10	
	Occipital	8	

Table II, graph I shows that type of incidence was Pedestrins was 14, motorcyclist in 20, 2- wheeler in 18 and Car/Bus in 16. Type of meningeal hemorrhage was subdural in 36, subarachnoid in 14 and epidural & subdural in 16 cases. Site of fracture was frontal in 24, parietal in 20, temporal in 10 and occipital in 8 cases. The difference was significant (P< 0.05).

Graph I Assessment of parameters



DISCUSSION

The type, direction, intensity, and duration of forces all contribute to the characteristics and severity TBI. Forces that may contribute to TBI include angular, rotational, shear, and translational forces.[6] Even in the absence of an impact, significant acceleration or deceleration of the head can cause TBI; however in most cases a combination of impact and acceleration is probably to blame. Forces involving the head striking or being struck by something, termed contact or impact loading, are the cause of most focal injuries, and movement of the brain within the skull, termed noncontact or inertial loading, usually causes diffuse injuries. The violent shaking of an infant that causes shaken baby syndrome commonly manifests as diffuse injury.[7] In impact loading, the force sends

shock waves through the skull and brain, resulting in tissue damage. Shock waves caused by penetrating injuries can also destroy tissue along the path of a projectile, compounding the damage caused by the missile itself. Damage may occur directly under the site of impact, or it may occur on the side opposite the impact (coup and contrecoup injury, respectively). When a moving object impacts the stationary head, coup injuries are typical, while contrecoup injuries are usually produced when the moving head strikes a stationary object.[8]

The previous head injury guideline produced by NICE in 2003 (NICE clinical guideline 4) and updated in 2007 resulted in CT scanning replacing skull radiography as the primary imaging modality for assessing head injury.[9] It also led to an increase in the proportion of people with severe head injury having their care managed in specialist centres. This has been associated with a decline in fatality among patients with severe head injury. This update is needed because of the continuing importance of up-to-date evidence-based guidance on the initial assessment and early management of head injury. Appropriate guidance can enable early detection and treatment of life-threatening brain injury, where present, but also early discharge of patients with negligible risk of brain injury. It can therefore save lives while at the same time preventing needless crowding in emergency departments and observation wards. The present study was conducted to assess incidence of head injury.[10]

In present study, age group 0-20 years had 5 males and 2 females, 20-40 years had 20 males and 14 females, 40-60 years had 9 males and 8 females and >60 years had 6 males and 4 females. Awasthi et al[11] reported the incidence of head injury among vehicular accidents, pattern of head injury, characteristics of victims such as age, sex, involved vehicle, circumstance of accidents, helmet was used or not. In this study only those postmortem cases were observed that reached morgue after accident. The criteria for exclusion were decomposed bodies, unknown, natural diseases, admitted cases and fatality due to other body parts. Out of 121 cases 88.42% were male and 11.57% were female. The highest incidence of RTA was observed in the age group of 21-30 years. Among the two wheelers 99.22% had not used helmet. The highest number of victims were of two wheelers. (46.34%).Regarding injury pattern in different parts of the body, all the victims had multiple abrasions and bruise, 83.47% had laceration, 85.12% had injury in skull bone, 100% injury to brain, 10.74% victims had injury to abdominal viscera, 16.52% had injury to rib cage bones, 14.87% to heart and lungs, 17.35% to liver and spleen and 7.43% to kidney. In the skull linear /fissure fracture was the commonest type of fracture (60.33%), followed by comminuted fracture (16.52%), depressed fracture 8.26%. Parietal bone was most prone to be fractured (32.03%) followed by temporal bone (29.12%). Most of the victims had subdural haemorrhage 85.95%.

We found that type of incidence was Pedestrins was 14, motorcyclist in 20, 2- wheeler in 18 and Car/Bus in 16. Type of meningeal hemorrhage was subdural in 36, subarachnoid in 14 and epidural & subdural in 16 cases. Site of fracture was frontal in 24, parietal in 20, temporal in 10 and occipital in 8 cases. Intra cerebral hemorrhage, with bleeding in the brain tissue itself, is an intra-axial lesion. Extra-axial lesions include epidural hematoma, subdural hematoma, subarachnoid hemorrhage, and intra -ventricular hemorrhage. Epidural hematoma involves bleeding into the area between the skull and the dura mater, the outermost of the three membranes surrounding the brain. In subdural hematoma, bleeding occurs between the dura and the arachnoid mater. Subarachnoid hemorrhage involves bleeding into the space 298 between the arachnoid membrane and the pia mater. Intraventricular hemorrhage occurs when there is bleeding in the ventricles.[12]

CONCLUSION

Authors found that maximum cases were seen in age group 20-40 among motor cyclists.

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