

A Hospital Based Cross Sectional Study on Ear, Nose and Throat Injuries In Patients With Head And Neck Trauma.

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Type of Publication: Original Research Article

Conflicts of Interest: Nil

Abstract

Background: The incidence of head injury is increasing day by day. Motor vehicle accidents constitute the single largest cause of head injury. The incidence is increasing due to increased use of vehicles by the enormous population, inadequate traffic control system, alcohol abuse, lack of use of seatbelts while driving etc.

Objectives: In our study we sought to comprehend the numerous ENT injuries in head and neck trauma patients. We also aim to emphasise the importance of using helmets and other safety measures to lessen the severity of injuries in RTA.

Methods: It's a cross sectional study of including the patients with head and neck trauma presenting to

Emergency ENT department of Sree Gokulam Medical College, Trivandrum. After taking assent from the bystanders, each patient was examined and necessary investigations were done. Data collected was classified into ear, nose and throat injuries.

Results: In our study of 165 patients were included, majority of the patients (83%) belongs to age group of 45 and below. Most of the patients were males (68.5%) and (31.5%) were females. Among our study population 55.2% have not used the Helmet or seatbelt, 35% have drunk alcohol. We have observed in our study that there is a statistical significant relationship between two wheeler, nose trauma and helmet. Those who weren't

use helmet had more nasal trauma ($p < 0.000$), likewise those who were not using seatbelt ($p < 0.000$).

Conclusion: Majority of male patients who met with the RTA had history of alcohol intake which is thought to be a cause of rash driving. Patients who used helmet and seatbelt had less severe head and neck injury compared to injury of other body parts, while patients without any safety precautions sustained severe head and neck injury along with injury to other body parts. Hence, we conclude that more initiative and responsibilities are needed to use helmet and seatbelt, voluntarily on the part of whole who drives the vehicle to avoid severe injuries in-case if they meet with the accidents.

Keywords: RTA, ENT, Head Injury, Helmet, Seatbelt.

Introduction

Head trauma of varied degrees of severity is frequently the result of motor vehicle accidents. The world's first motor vehicle-related traffic fatality is reported to have happened on August 31, 1896 [1]. Historically, 75% of car accidents had a head injury however, as seatbelt use has increased and airbags have become more common, these rates may change in the future. 14-22% of injured patients get a fractured temporal bone when the head trauma is severe enough to fracture the skull. 31% of the temporal bone fractures in the largest series of temporal bone fractures recorded to date were caused by auto accidents. The second most frequent reason, after falls and motorbike mishaps, is assault.

A quarter of the cases involve pedestrian injuries, bicycle accidents, gunshot wounds, all-terrain vehicle accidents, sports injuries, and other injuries [2]. Injuries to the auricle, external auditory canal, temporal bone fractures, traumatic perforation of the tympanic membrane, CSF otorrhoea, hearing loss, fractures of the nasal and facial bones, cut throat injuries, and laryngeal

injuries are the most common ENT presentations after a head injury.

Road Traffic-Related Oto-Rhino-Laryngological Issues Accidents are serious and perhaps fatal. The head and neck contain every significant structure. Additionally, they act as windows into the brain. Since the nose is a prominent feature of the face, trauma to the face's bones is possible. It is crucial to emphasise the importance of facial cosmesis and the restoration of the physiology of the sensory organs [3]. So, in our study we sought to comprehend the numerous ENT injuries in head and neck trauma patients and to emphasise the importance of using helmets and other safety measures to lessen the severity of injuries.

Methodology

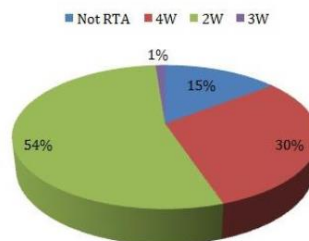
Hospital based Cross Sectional Study was conducted at Department of Emergency ENT, Sree Gokulam Medical College and Research Foundation, Venjaramodu, Trivandrum, from 6th June 2021 to 29th October 2022. Patients all age groups and genders with head and neck trauma presenting to Emergency ENT department were included in the study. Each patient were evaluated completely and detailed history were taken. Grading of head injury were done with Glasgow coma scale. Basic blood investigations, radiological investigations, PTA, nasal and laryngeal endoscopic examination were done as and when required. The routine CT Brain with HRCT temporal bone were taken for patients with ear bleeding, facial palsy, CSF otorrhea. X ray nasal bone were taken in suspected cases of nasal bone fractures. In cases of facio-maxillary trauma, CT face with 3 D reconstruction were done. In case of hearing loss, tinnitus and traumatic perforation of tympanic membrane, pure tone audiometry were done. CT neck were done in suspected cases of injury to larynx, trachea and esophagus. Data

collected were classified into ear, nose and throat manifestations. Data were entered in Microsoft excel and were analysed using SPSS software. Proportion and frequency were calculated for various ENT manifestations. Qualitative data were compared using chi –square test.

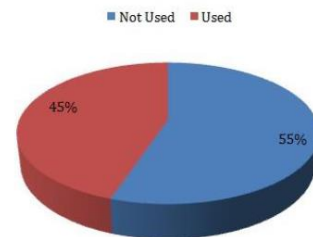
Results

Overall, 165 study participants were included in this study, among which most of them were 45 yrs old and below (83%). Majority of them were men (68%). Among the total population 35% participants had alcohol while driving. We also have observed that majority of the participants had two-wheeler accident (54%) followed by four wheeler accidents (30%). Most of the study participants (55%) have not used helmet/seatbelt.

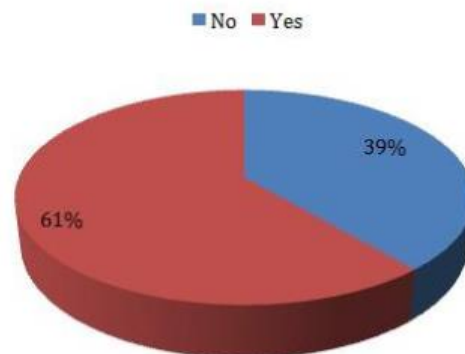
Mode of trauma : RTA



HELMET SEATBELT

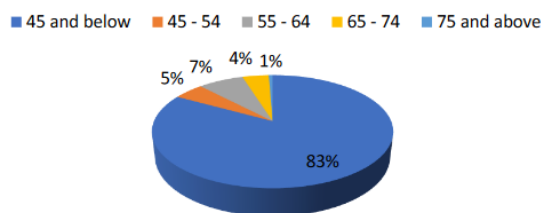


TRAUMA TO OTHER BODY PARTS

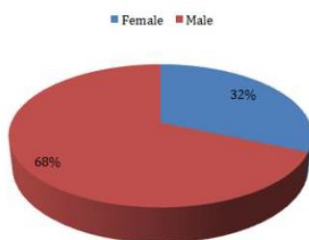


61% of the study participants had injuries on their other body parts, apart from Head Injury. According to the CT findings 24% of the study participants had Facial bone involved trauma, 11% had traumatic brain injury and 12% had traumatic brain injury & facial bone involved injuries. We have noticed that among all the injuries nasal trauma (72%) was most frequent.

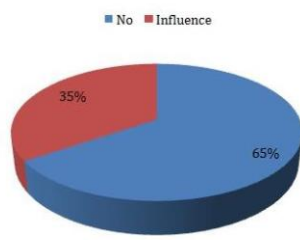
DISTRIBUTION ACCORDING TO AGE



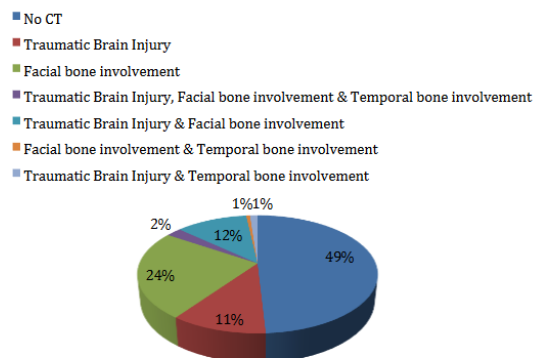
Gender

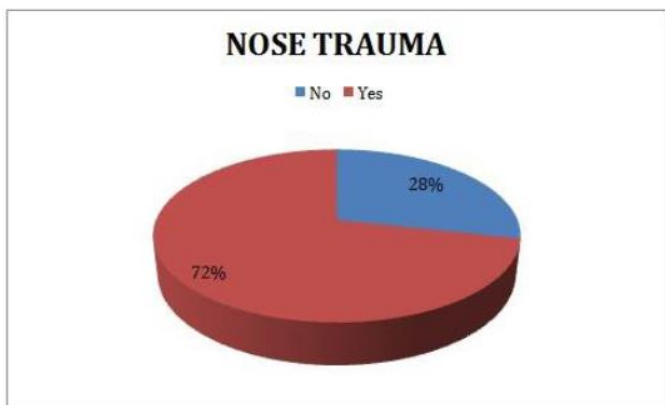


ALCOHOL INFLUENCE



Radiological findings CT





We have observed in our study that there is a statistical significant relationship between two wheeler, nose trauma and helmet. Those who weren't use helmet had more nasal trauma ($p < 0.000$), likewise those who were not using seatbelt ($p < 0.000$).

Comparison of 2 Wheeler between NOSE TRAUMA and HELMET

NOSE TRAUMA	HELMET		Total	Chi Square	df	p-value
	Not Used	Used				
No	6	22	28	14.977 ^d	1	0.000
Yes	40	21	61			
Total	46	43	89			

Comparison of 4 Wheeler between NOSE TRAUMA and SEATBELT

NOSE TRAUMA	SEATBELT		Total	Chi Square	df	p-value
	Not Used	Used				
No	0	13	13	14.965 ^c	1	0.000
Yes	23	14	37			
Total	23	27	50			

Discussion

All communities frequently experience ear, nose, and throat emergencies. Morbidity and mortality will be decreased as a result of early diagnosis and treatment. An essential component of the health care system is emergency services. Emergency management of ear, nose, and throat conditions calls for specialised anatomical knowledge as well as specialized skilled doctors and other modalities of investigations. The frequency of ENT and head and neck emergencies is rising, which presents a challenge to the attending ENT surgeon. This is due to the rise in industrial accidents and road traffic accidents [4]. In our study we have tried

to figure out the proportion of ear, nose and throat injuries in patients with head and neck trauma, among which we have compared the pattern of injuries between patients who take precautions like helmet and seat belt and those who do not. Adoga et al's findings revealed that 91 (1.3%) of the 7109 patients with head injuries had otorhinolaryngological presentations. 34 years old on average, 15.6 standard deviations from the mean, and a 2.4:1 male to female ratio. In 46 (50.5%) of the patients, severe head injury (Glasgow coma scale 9) occurred. Patients between the ages of 30 and 39 were the most affected (n = 30, 32.9%). The most common types of injuries were assaults (n = 23; 25.3%) and motor vehicle accidents (n = 61; 67%). Cerebrospinal fluid (CSF) rhinorrhea and CSF otorrhea were the two most frequent otorhinolaryngological presentations (n = 26; 28.6% and n = 25; 27.5%, respectively) [5]. Of the participants most of them belonged to 45 and below (83%), among the participants most of them were Male (68.5%). It was observed in our study and 55. 2% of the study population have not used the Helmet. Amongst the participants 33.9% of them were having ear Trauma, 71.5% were having Nasal Trauma and 3% were having Throat trauma.

According to studies, CSF leaks most frequently happen after trauma, with the majority of instances manifesting within the first three months. Periorbital haemorrhages are much more common in people with CSF rhinorrhoea. This implies that patients with head traumas and periorbital haematoma characteristics are more likely to experience an unnoticed dural tear and delayed CSF leakage. There is no need for a second confirmatory test if computed tomography reveals a skull base fracture and a clinical CSF leak [6]. In our study, CSF rhinorrhoea cases were less, due to the reason of late presentation.

We have observed in our study that there is a statistical significant relationship between two wheeler, nose trauma and helmet. Those who weren't use helmet had more nasal trauma ($p < 0.000$), likewise those who were not using seatbelt ($p < 0.000$). Due to lack of availability of the audiologist, after office timings and being a private setup most patients were opting to go to Government setup after taking initial trauma care, which made hearing loss assessment difficult in our study.

Conclusion

Most of the study participants were at the age group of 45 and below, among which 68.5% were males. 85.5% of the study participants were met with RTA. Compared to other injury modes, RTAs continue to be the most frequent source of injuries. The main causes of the excessive RTA in our nation are the disorderly traffic, the shoddy condition of the Indian roads, the unpredictable behaviour of the animals on the roads, the use of alcohol and drugs by the drivers, and the negligence of wearing helmet/ seatbelt, the lack of rules awareness. In our study observation among RTA, 53.9% were Two-Wheeler accidents. Among the patients 33.9% were having ear Trauma, 71.5% were having Nasal Trauma and 3% were having Throat trauma. Our findings suggest that Trauma is significantly reduced with the usage of helmets & seat belt ($P < 0.05$). Hence, we conclude that more levels of awareness and strictness covering all areas is needed to ensure the reduction of RTA injuries.

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