

CERVICAL SPINE INJURY ASSOCIATED WITH MAXILLOFACIAL TRAUMA: A 4-YEAR STUDY AT A TERTIARY CENTER IN PUNJAB, INDIA

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Introduction

Maxillofacial trauma occurs commonly in road side accidents, especially in rash driving regions. Concomitant suspicion for Cervical Spine Injury is of great importance due to shared mechanisms involved.

Objective

To estimate the incidence of Cervical Spine Injury in Maxillofacial trauma mainly due to road side accidents and to understand their demographics and etiology

Methodology

- A total number of 279 Maxillofacial Trauma patients were included in this study where males outnumbered females. Most common age group was 21-30 years. Most common etiology was Road Side Accident (RSA). It was found that 78% of RSA occurred when patient was on 2-wheeler vehicle in which Majority were driving themselves.
- History was collected regarding the Gender, Age, Vehicle details, position of the patient in the vehicle at the time of the accident. Clinical examination details were recorded for assessing soft tissue injuries, any visible facial fractures, palpation for step off, optic nerve injury or ocular trauma.
- Assessment of the Maxillofacial bone trauma in cases where indicated was done using CT scan, with 3D reconstruction.
- Based on severity of trauma, and clinical assessment from Neurosurgery team, MRI cervical spine would be used to ascertain the presence of a cervical spine injury.
- Details were also collected regarding any form of traumatic brain injuries suspected clinically or on imaging.

Chart 3: Position of patient in Vehicle

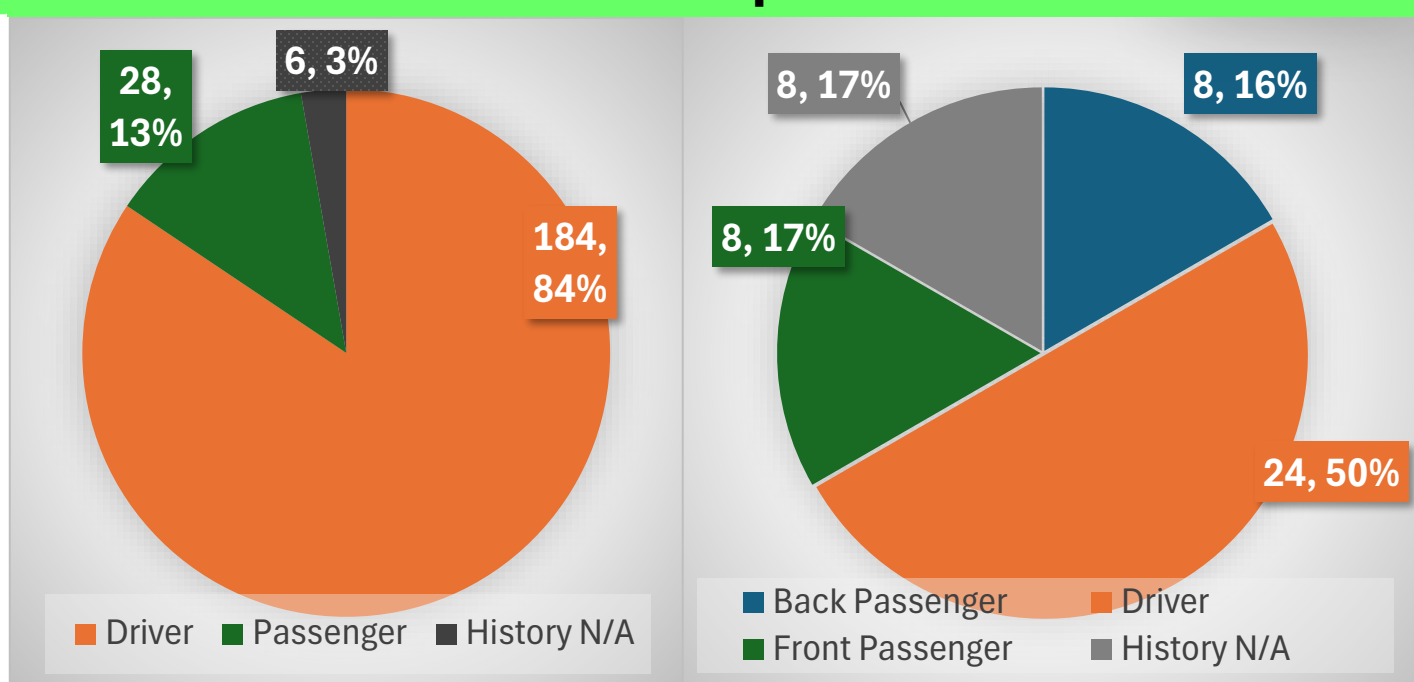


Table 1: Skull fractures

Skull Fracture	No. of Patients (n = 279)	Percentage (%)
Maxilla	205	73.4
Mandible	70	25
Zygoma	145	52
Nasal	147	52.6
Orbital	161	57.7
Frontal	63	22.5

Table 2: Cervical Spine injury – types and symptomatology

Cervical Spine Injury cases	13 (4.6% of all patients)	Vehicle of patient with CSI	No. and %age of pt.
Only Sub axial Fracture	6	2 wheelers	10 (77%)
Only Ligament Injury	6		
Sub axial Fracture + Ligament injury + Dislocation	1	4 wheelers	3 (23%)

Table 3: Traumatic Brain Injury and it's causes. Optic nerve/Ocular trauma

Associated Traumatic Brain Injury (TBI)	129 patients (out of 279)	Percentage (%age)
TBI + Cervical Spine Injury (CSI)	11	8% of all TBI cases (84% of all CSI cases)
TBI + Optic Nerve Injury/Ocular Trauma	6	4% of all TBI cases

Types of Traumatic Brain Injury (TBI)	Number of patients (± >1 multiple injuries)
Contusions	65
Subdural hemorrhage (SDH)	50
Subarachnoid hemorrhage (SAH)	47
Extradural hemorrhage (EDH)	30
Intraventricular Hemorrhage (IVH)	20
Diffuse Axonal Injury (DAI)	12
Pneumocephalus	9
Hydrocephalus	4
Intracerebral Hemorrhage	2
Midline Shift	2

Optic Nerve Injury/Ocular Trauma	12 (out of 279)
Cervical Spine Injury Present	1
No Cervical Spine Injury	11

Table 4: Final Outcome

Final Outcome	Number of patients (out of 279)	Percentage (%age)
Discharge	241	86.3%
Discharge against Medical Advice	35	12.5%
Death	3	1%

Conclusion

- Incidence of cervical spine injury in patients of road side accidents with maxillofacial trauma is 4.6% based on study with 2 wheeler drivers having highest likelihood (77%)
- Increased awareness regarding this minor but significant risk should be spread amongst first responders and paramedic staff while transporting and handling victims of road side accidents A complete neurological assessment at admission and on subsequent days should be performed so as to identify injuries timely

Results

Chart 1: Patients by Gender and Vehicle (Total: 279)

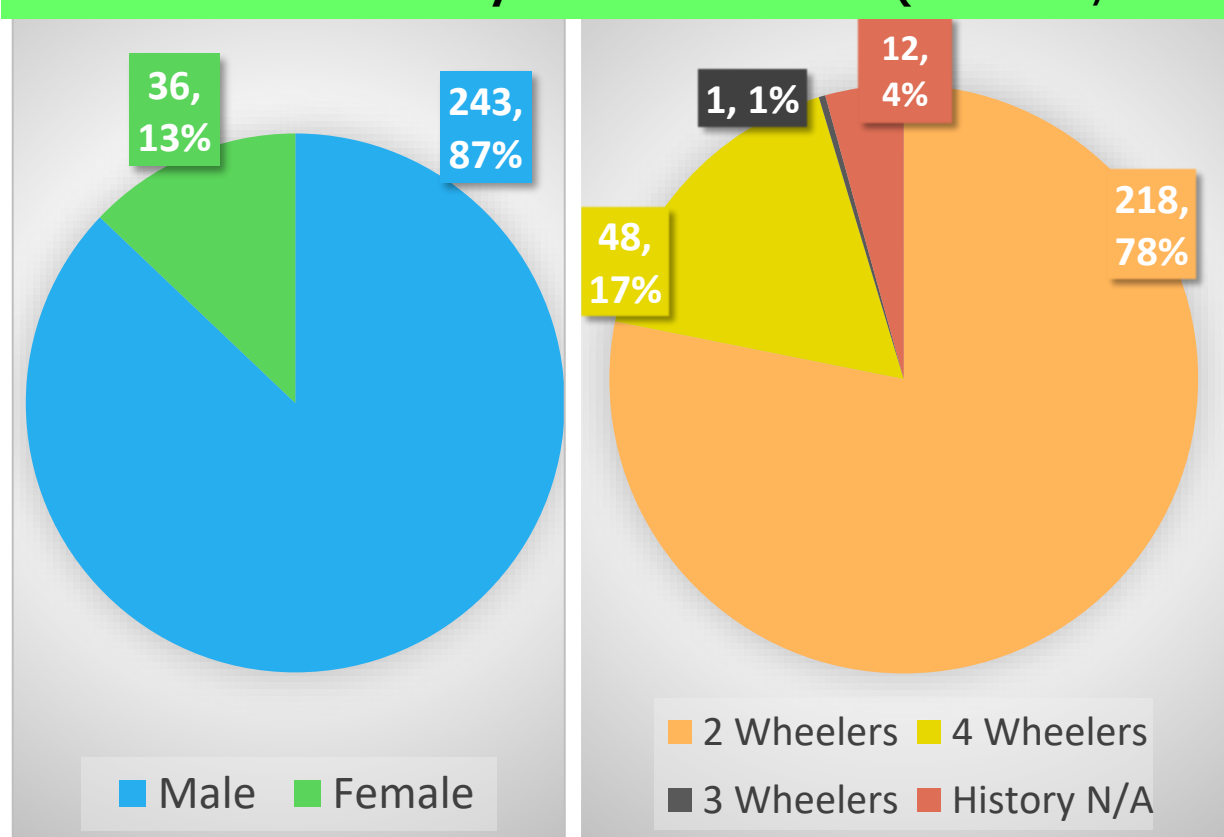


Chart 2: Number of patients by Gender in each age group (Total: 279)

