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Covid-19 Lockdown was Not an Impediment for Road Traffic Accidents - An account of Maxillofacial Trauma Spectrum due to RTA and its demography

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Abstract

Introduction: Covid 19 lockdown period was really a nightmare for trauma victims or in that matter for any type of acutely ill patients. Being a tertiary health care center, we were attending the patients managing injury 24X7 and had an opportunity to observe the change in pattern, etiology of maxillofacial trauma due to road traffic accidents.

Material & Methods: Records of total 266 patients of pure maxillofacial trauma having etiology of Road Traffic Accidents (RTA) were included in the study and data organized, tabulated, and analyzed. Records of all the patients admitted to Maxillofacial unit of the trauma centre which were deficient in details, were excluded.

Results: There was a slight decrease in trauma cases due to the obvious reasons of Lockdown, still there were not so smaller number of cases. Among all these cases, over speeding being the main etiology, whereas poor condition of the roads was fourth in the list and accounted for approx.10% of the total cause of RTA. Number of male trauma victims were more than female. A change in pattern of trauma with respect to age was

noticed with clustering of injuries in middle age group (31- 60 Years) from young age group (10-30 Years).

Introduction

The healthcare system was crippled in India during pandemic caused by Covid-19 disease (Coronavirus disease) which emerged in March 2020. In order to discontinue and curb the spread of the disease various measure were taken up by the governments throughout the world. This radically comprised of social distancing, lockdown and curfews [1]. Keeping the gravity of circumstances in mind, every country recommended certain guidelines in the health sector, like, omly emergency, essential and critical sevices were given preference, other sevices were temporarily halted [2]. Several studies observed significant changes in the health sector which included modification in the etiology and presentation of trauma [3,4]. Some studies observed that due to restrictions in the mobility and commercial activities, there was less vehicular movement, the roads were deserted and, eventually there was a significant decrease in road traffic accidents (RTA), which is as global menace [5-7]. In an annula report of National Crime Records Bureau (NCRB) during 2020 around 3,54,796 cases of RTA were observed. There was decrease in trauma prevalence from 10.8% (in April 2018) to 9.7% (in April 2020). Although due to lockdown there was a decrease in RTA but there was increase in domestic trauma (91.4%) [5]. An increase in number of RTA was also observed in the second phase of lockdown, perhaps due to over speeding and use of mobile phones [6]. Although there are several studies on facial trauma during covid-19, but there are few studies on facial trauma due to RTA during Covid-19 pandemic, and to the best of our knowledge no studies in northern India [6,8]. Thus, the objective of this study was to assess the incidence and pattern of maxillofacial trauma due to RTA during Covid-19 in northern India.

Materials & methods

This was a retrospective observational study which was carried at a tertiary hospital centre of northern India. Data was collected from the period of 24 March 2020 to 30 June 2020 from the hospital records. Demographic data (like gender, age, nature and mechanism of injury, number and percentage of trauma) was collected from all the patients who were reported with maxillofacial trauma during the above-mentioned time periods. Patients with incomplete data and maxillofacial trauma cases which were not under the OMFS (oral and maxillofacial surgery) unit were excluded from the study. Only those patients who suffered the injury due to road traffic accident were included in the study.

Results

In this study it was observed that maximum accidents occurred due to speeding (31.5%), then due to not following the traffic rules (26.3%) and followed by maximum usage of mobile phones (22.9%) (Table 1 and Figure 1). It was also observed that maximum accidents occurred because of motorcycle (27.06%), followed by scooter (21.05%) (Table2 and Figure 2). Out of the total 266 patients maximum (82%) were males and in the age group of 31-60 (48.12%). Type of injury was divided into soft and hard tissue (Table 3, 4 and Figure 3, 4). The most common injury was soft tissue lacerations (31.57%) among males, followed by hard tissue injury (Pan facial fractures comprises of 13.15%; Le Fort I & II comprises of 9.7%, zygomatico-maxillary complex (ZMC) fractures comprise of 2.25%, Para symphysis comprises of 7.5% among males, while among females Le Fort I & II comprises of 3.38%.

Sr No.	Cause of RTA	No of patients	(%)
1	Condition of the road	28	10.5%
2	Poor light	3	1.12%
3	Parked vehicle	2	0.75%
4	Pedestrian on road	5	1.87%
5	Animal on road	6	2.25%
6	Over Speeding	84	31.5%
7	Not followed traffic rules	70	26.3%
8	Use of mobile phone	61	22.9%
9	Reason not known	7	2.63%

Table 1: Number percentage of Patients and their Causes of Road Traffic Accident

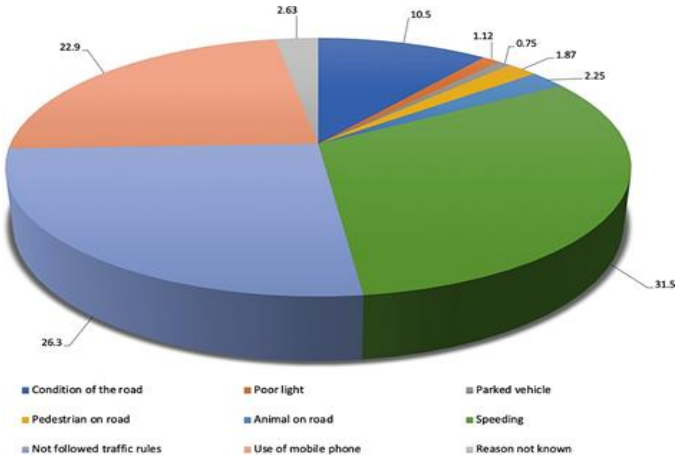

Fig 1: Number of patients based on causes of road traffic accidents

S. No.	Type of vehicle	No, percentage (N, %)
1	Motor cycle	72 (27.06%)
2	Scooter/ Scooty	56 (21.05%)
3	Moped	44 (16.54%)
4	Bicycle	13 (4.88%)
5	4-wheeler	17 (6.3%)
6	Auto	19 (7.14%)
7	Bus/Lorry	28 (10.5%)
8	Other vehicle	8 (3%)
9	Pedestrian	9 (3.38%)

Table 2: Percentage Distribution of Type of Vehicle in Road

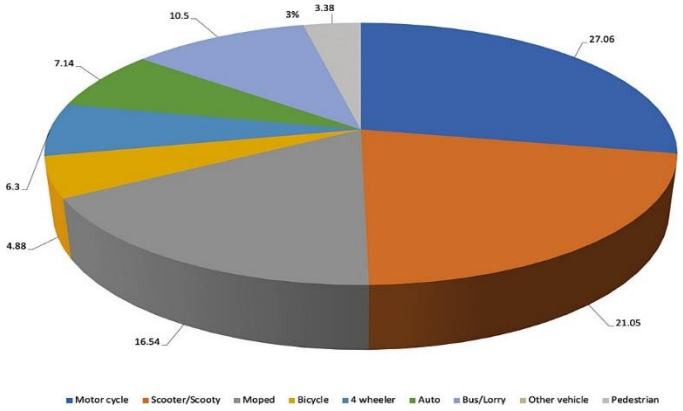

Figure 2: Percentage Distribution of Types of Vehicles in Road Traffic Accidents

Male n (%)		Total n(%)	Female n (%)		Total n (%)
10-30 years of age	31-60 years ofage		10-30 (years ofage)	31-60 (years of age)	
92 34.5	128 48.12	220 (82%)	12 (4.5%)	34 (12.78%)	46 (17.29%)

Table 3: Age and Sex wise percentage distribution of trauma patients.

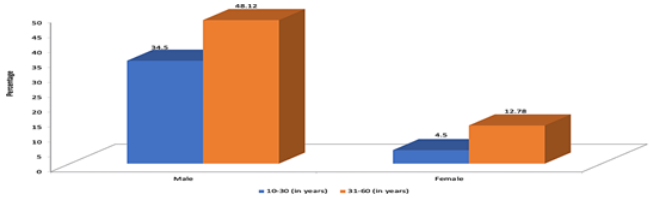

Figure 3: Age and Sex wise percentage distribution of patients.

Anatomical location	Male n (%)	Female n (%)
Lacerations	84(31.57%)	7(2.63%)
Isolated Condyle	4(1.5%)	1(0.37%)
Condyle+Angle	8(3%)	2(0.75%)
Symphysis	8(3%)	5(1.87%)
Isolated Angle	11(4.13%)	4(1.5%)
Para symphysis	20(7.5%)	6(2.25%)
Body	11(4.13%)	5(1.87%)

Lefort (I&II)	26(9.7%)	9(3.38%)
ZMC	6(2.25%)	2(0.75%)
Upper third Lefort (III)	7(2.63%)	0(0%)
Pan facial	35(13.15%)	5(1.87%)

Table 4: Anatomic Location of Injuries and Sex wise Percentage

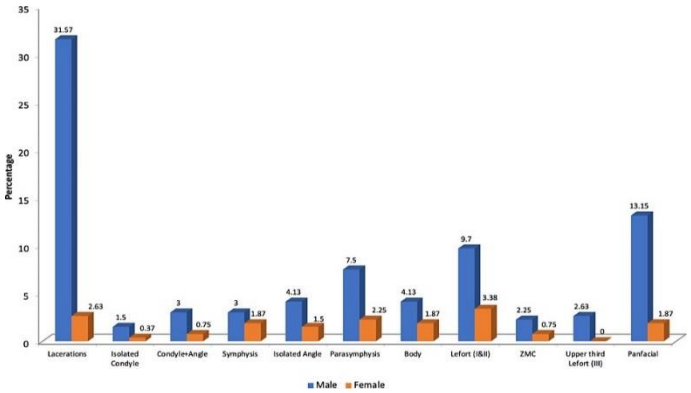

Figure 4: Anatomic Location of Injuries and Sex wise Percentage Distribution of Patients.

Discussion

According to WHO (world health organisation) it was presumed that by 2030 RTA would become 5th major cause of mortality globally. It was agonising to recognise that around 1.2 million people lose their life per year due to RTA globally. Worldwide several steps have been taken to curb this menace, but still the mortality rate is harrowing. But during lockdown several studies evaluated that there was a reduction of 15% to 32% of traumas due to RTA [9]. Out of several risk factors psychoactive substances like alcohol and drugs are still playing crucial role in RTA. It was also observed that the role of these substances is enhanced when other causes (like speeding and breaking of traffic rules) were evaluated. But during lockdown due to non-availability of alcohol the cases were reduced [10].

In India highest ratio of trauma accidents occurred due to RTA and the major cause especially during COVID-19 was observed to be over speeding and not following the traffic rules which were also evident in our study [5,11]. As assumed and observed in other studies [5,12], in this study too there was a modification in the pattern and etiology of maxillofacial trauma cases during COVID-19, due to less mobility which also reduced RTA. In the current study it was observed that around 82% males suffered facial trauma as compared to only 17.2% of females, these findings corroborate with previous studies, highlighting the fact that males are more prone to accidents [9,13,14]. In a study by Lee et al., it was also observed that 75.77% males suffered facial injury as compared to 24.23% of females [9]. In a study by Philip et al., it was observed that the adult age group suffered the major injuries which are similar to the findings in the current study [12]. In our study 48.12% and 12.78% of adult males and females, while 34.5% and 4.5% of young males and females respectively suffered facial injury. Similar to the study by Philip et al., it was observed in our study that maximum accidents were observed via two wheelers which were followed by heavy vehicles like bus or lorry [12]. Perhaps due to the fact that roads were empty during lockdown especially on high ways, thus over speeding was observed as one of the major causes of accidents. In the current study the most perpetual site was mandible where 23.3% of males and 8.64% of females reported injury which corresponds with the study done by Sala no et al., which reported 31.5% of males and 2.63% of females suffered injury [15]. Among soft tissue injury lacerations were observed to be more in studies done by Morris et al. and Yeung et al. [16], which is similar to this study where lacerations among men were reported more (31.57%) than females (2.63%). Moreover, lacerations were instantly managed by the clinicians that require suturing and immediate actions were also taken to prevent reconstructive procedures at a later stage. It is also observed that injury

whether soft or hard tissue must be managed timely if not then it can lead to residual deformity [13,17,18].

Conclusion

During COVID-19 period although there was a decrease in the trauma cases due to the changes in the transportability, but the RTA was found to rule in this period also. Use of mobile phone was one of the main causes of RTA which needs special attention in the future. Apart from this negligence of traffic rules should also be taken seriously by the authorities. By implementing stringent rules this menace can be curbed. As expected, there was a decrease in nature and etiology of trauma which require a critical exploration in further studies. This study has given us an insight to manage the maxillofacial trauma in the coming time.

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