PATTERN AND PREVALENCE OF MOTOR BICYCLE ACCIDENTS A STUDY AT KHYBER TEACHING HOSPITAL PESHAWAR

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ABSTRACT

Aims: To study the pattern and Prevalence of Motor Bicycle accident presenting to Accident and emergency Department ,Khyber Teaching Hospital Peshawar

Material and Methods: This research is a prospective study regarding cases of motor cycle accidents presented to the Casualty and Trauma and orthopedic department of Khyber Teaching Hospital Peshawar during the period between Jan 2019 and June 2019 .After getting ethical clearance information about the patient bio-data (age, gender, contact number and address), mode of accident and type and site of injury, obtained on a pretested Proforma. The cases without fractures or visceral injury were excluded. The study is completed by SPSS-16 and inferences were deduced in reputes of percentage & frequency. A net of 110 motor bike accidents were considered and examined for various variables.

For this study to be carried out the body was first divided into different regions. Upper limb sub divided into humerus, radius/ ulna, wrist and hand .Shoulder girdle was included with in humerus region. Similarly, lower limb subdivided into Hip joint with femur, tibia/fibula, ankle and foot regions. Moreover, fracture of extremities sub-divided into open and close. Besides this, spinal injuries subdivided mainly into cervical and rest of the spine regions. Injuries to thorax, abdomen and pelvis categorized separately. Moreover, head injury (mild to severe) data recorded and its prevalence compared with wearing of safety helmet.

Results: Out of all motorcycle accident victims we included 110 patients who got treatment for injuries that were sustained in motorcycle accident.

Causalities were distributed according to their age and sex and are displayed in Table 1st & 2nd. Out of total 110 sufferers, 106 (96.36%) were male while only 04 (3.64 %) were feminine cases. Maximum casualties were in their twenties and thirties, making 97 (88.18%) of total patients. In comparison to female population male population is much more prone to get injured in motorbike injuries i.e. for every 1 woman 28 men were injured.

Tabulated data shows that lower extremity 74 (67.26%) was the most common body region injured. Tibia 31(28.18%) accounted the most among it. Likewise, radius and ulna fracture 27(24.54%) accounted the most among the upper limb fractures. Similarly, majority of the fractures were closed 81(73.64%).Likewise, 43(39.09%) patients suffered from head injury. 90 (81.81%) patients suffered from motor cycle accident for the first time while 20 (18.18%) had sustained motorcycle accident previously also.

Conclusion: Awareness movements regarding safety instructions are needed for the high-risk groups. Generally population who were the main earning hand for their families were involved, so this issue deserves to be highlighted in terms of education, manufacturing, atmosphere, and advanced trauma care of victims of motor vehicle injuries.

Key Words: Motor cycle, Head injury, Accident, Peshawar

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INTRODUCTION:

Motor bikes are being used in excess and the demand is still rising in under developed countries mainly because of the ease of driving in populated countries and secondly for the economy both in terms of price and fuel consumption [1]. The freedom of movement, velocity and comfort of avoiding traffic jams and its capability to get through constricted pathways have contributed to their usage as a primary means of travel in main capitals and remote underprivileged areas in the world chiefly emerging countries [1, 2].

The worn out state of the roadways in our country and improper and mismanaged transport system for public, as well as increase in vehicles across the road and aggravating unemployment, are root

reasons for the blossoming motorbike transportation trade [3]. Rising usage of motorbikes for self-profitable reasons has also been defined in some regions of Africa such as Ghana, Uganda and South Africa [4-6].

Motor vehicle accidents grades amongst the principal reasons of expiries in the world and it is expected to be the principal cause in one to two years just ranking second after Ischemic Heart disease [7]. According to WHO(global rank account on road safety) 1.24 million lose their lives on roads every year just because of the same issue under discussion [8].
In contrast to people travelling in other types of conveyances bikers are thirty five times more prone to be injured [8]. Expiry rate owed jus to road traffic trauma is highest in Africa; making 28.3 deaths per 1 lac population. In Nigeria due to the rising population the burden is expected to incline 41 per 1000 people, & motorcycle grievances account for more than half of total trauma endured on road [9].
Riders mainly are prone to get injured just because most of the times there is little or no protection at all at the time of a bang [10]. Reasons such as helmet, alcoholism and under influence of medications, unpretentiousness of motorcyclists and reduced training, unfamiliarity with the bike, driving license and possession, speed, and risky behavior of riders are documented as causal reasons to the augmented danger of lethal motorbike crashes [11].
Head grievance is the principal reason of expiry in fatal motorcycle smashes [2, 4, 5, 12, and 13]. Different patterns of head injury can be; scalp injuries, skull fracture, subdural, subarachnoid hematoma, cerebral contusion/laceration, cerebral edema, epidural and intracerebral hemorrhage [12].
Kraus et al. in a study at California USA, stated that amongst critically hurt motorbike accident sufferers, head injury established 56% [13]. Similarly, Wyatt described that skull crack along with injury to the brain stem instituted 16.6% of survivable head injuries perceived in motorbike crash victims [14]. Most head grievances are mainly concussions, brain contusions and hemorrhage come in second, facial and skull fractures fall in last [14].
Likewise, injuries of the trunk are also common in deadly motorbike crashes [2, 15]. There are various other studies showing injuries of the lower limb and associated vascular and soft tissues injuries [2, 4, 5, 16]. On the other hand injuries of the pelvic cavity and spine have been enlisted in more severe impacts [2, 17, 18].
Injuries due to motor cycle accidents contribute considerably to the sum of trauma admissions at tertiary care hospitals, comprising a considerable sum of lives & possessions. One should know extra regarding the figures & kinds of damages and also about the environment in which these kind of injuries incur. These figures will display just precisely how grave the motor bike accident influenced damage problem is, and where, accurately defensive means are directly necessary.

Material and Methods:

This study is a prospective analysis of motor bike accidents presented to the Casualty and Trauma and orthopedic department of Khyber Teaching Hospital Peshawar during the period between Jan 2019 and June 2019 .After getting ethical clearance information about the patient bio-data (age, gender, contact number and address), mode of accident and type and site of injury, obtained on a pretested Proforma. The cases lacking fractures and visceral damage were not engaged into contemplation. The study is done by SPSS-16 and the outcomes were inferred in relations of percentage and frequency. A sum of 110 motor bike accidents were studied and examined for different variables.
For this research to be carried out as described earlier that body was divided into regions. Upper limb was sub divided into humerus, radius/ ulna, wrist and hand .Shoulder girdle was included with in humerus region. Similarly, lower limb subdivided into Hip joint with femur, tibia/fibula, ankle and foot regions. Moreover, fracture of extremities sub-divided into open and close. Besides this, spinal injuries subdivided mainly into cervical and rest of the spine regions. Injuries to thorax, abdomen and pelvis categorized separately. Moreover, head injury (mild to severe) data recorded and its prevalence compared with wearing of safety helmet.
By keeping careful track of the circumstances of the accident head on vs head on side collision recorded. Moreover, accident victims were asked whether it was their first accident or had similar events in past. Descriptive statistics was used. All statistical procedures were done on distinct data collection sheet consuming SPSS 16.

Results:

Out of all motorcycle accident victims under we included 110 casualties managed for grievances incurred in RTAs and were subsequently analysed.
The dissemination of study subjects conferring to the age and sex is displayed in 1st and 2nd table. Out of total 110 sufferers, 106 (96.36%) were male while only 04 (3.64 %) were woman subjects. Topmost records of fatalities were in their twenties and thirties, comprising of 97 (88.18%) patients. Men were much more exposed to RTAs than women. Though overall men and women ratio was 28:1.
Tabulated data shows that lower extremity 74 (67.26%) was the most common body region injured. Tibia 31(28.18%) accounted the most among it. Likewise, radius and ulna fracture 27(24.54%) accounted the most among the upper limb fractures. Similarly, majority of the fractures were closed 81(73.64%).Likewise, 43(39.09%) patients suffered from head injury. 90 (81.81%) patients suffered from motor cycle accident for the first time while 20 (18.18%) had sustained motorcycle accident previously also.

DISCUSSION

Road Traffic Accidents (RTAs) establish a captain public health problem throughout the world. Among RTAs motor cycle accidents constitute an important part. In this appraisal, the mainstream of motor bike fatalities were in early age groups in their most creative years and revealed a male supremacy.
Out of total 110 sufferers, 106 (96.36%) were male while only 04 (3.64 %) were female casualties. Uppermost sums of victims were in the 20-40 years age group, comprising for 97 (88.18%) patients. Males are much more prone to RTAs than women. While overall male and female ratio was 28:1. Most of sufferers included in study were males (96.36%) showing similarity to research of

Table 01: Age and Motorcycle Accident

Age	Number Of Patients	Percentage
< 20 years	10	9.09 %
20-40 years	97	88.18 %
>40 years	3	2.72 %
Total	110	100 %

Table 02: Gender VS Motorcycle Accident

Gender	Number Of Patients	Percentage
Male	106	96.36 %
Female	4	3.64 %
Total	110	100 %

Table 03: Fractured Bone VS Motorcycle Accident

Fractured Bone	Number Of Patients	Percentage
Tibia	31	28.18 %
Femur	27	24.54 %
Foot	16	14.54 %
Humerus	06	5.45 %
Radius/Ulna	27	24.54 %
Hand & Wrist	18	16.36 %
Total	110	100 %

Table 04: Type of Fracture VS Motorcycle Accident

Type	Number Of Patient	Percentage
Open Fracture	29	26.36 %
Closed Fracture	81	73.64 %
Total	110	100 %

Table 05: Head Injury VS Motorcycle Accident

Head Injury	Number Of Patients	Percentage
Yes	43	39.09 %
No	67	60.91 %
Total	110	100 %

Jos (82.7%), and Ilorin (88.4%) [2, 16]. Similar results showing male predominance were elicited in researches in other parts of the world i.e. 87.9 & 90.8[12, 19]. The reason for male predominance is mainly due to their personal reasons such as careless driving, alcoholism high speeds substandard or no protection at all. The reason being superior male acquaintance on roads (20, 21, 22, 23). Similarly as already mentioned males are earning hands for their poor families and they want to utilize cheap conveyance of motorbike so that they could save for the most of it. Sharman B. R et al in India discoursed that motorbike crash casualties in female population are mostly due to the fact that most of them sit sideways with lower extremities on one side i.e to the left side of the motorbike just because of sari (dressing), stops them from sitting in conventional astride way commonly adopted by men and also that they are not wearing any protective apparatuses such as helmets [12]. On the other hand female are mostly involved in indoor activities such as home chores and also because of the traditional attitude adopted by their male family members to keep them protected and less exposed to outside world.

The chief age group for motorbike casualties in this research was twenties and thirties. This is in contrast to the peak age group mentioned by Nwadiaro et al i.e. 20-30. in Jos and Solagberu et al. in Ilorin [2, 16]. Similar age group of 20-30 was mentioned in researches in Ghana, Uganda and South Africa [4-6]. Reason most likely to be responsible for the motor bike crashes in this research was that most of the productive working class is in the age group range of 20-40 and they have to travel to Lagos from various different regions of the country to get employed in the form of commercial motorbike riding just to earn living. On the other hand various other researches have proved uppermost age of male fatalities to be 40 having mean of 33(24, 25).

There was a predominant prevalence of head and neck grievances 43(39.09%) in our study. A likely clarification might be that motor vehicle passenger's didn't wear seat belts ensuing in forward push in a crash and higher degree of damage. Alike consequences were also apparent in others researches (20, 24). Common injuries were the lower and upper extremities (20, 21)

Among fractures, lower extremity 74 (67.26%) was the most common body region injured. Tibia 31(28.18%) accounted the most among it. Likewise, radius and ulna fracture 27(24.54%) accounted the most among the upper limb fractures. Similarly, majority of the fractures were closed 81(73.64%). It is due to gravitational force communication and vehicular speed at the hour of accident that results in fracture of the lower extremity (20). But else where it was proved through research that it was basically the upper extremity that mostly got traumatized and lower limb injuries and facial fractures were trailing (24). In dissimilarity, inference of another study proved that skull fractures were most common and injuries of lower extremities were falling second (26).

The amplified probability of motorcyclists (riders and passengers) to die in motor cycle crash is for the motive that there is least protection of the two wheeler machine, and the full blow of an accident is shifted to the victim resulting in a probable deadly outcome mostly in those who are having no protection. In this research none of the casualties suffered from thoracic grievance. Besides this, in a research by Sharma 40.3% of casualties suffered from thoracic injury [12]. Like wise, 45.9% patients endured chest injury according to Kraus [15].

Upper limb grievances account for 51 (46 %) in this research, which is much in contrast to the conclusions derived by Heydari et al. which was 9.8% [21]. Fractured humerus showed by this study were 5.45%, which is too close to 9.7% showed by Sharma et al. in India [12].conversely, fatalities of the lower limb accounted for 71 (66.26 %) of the damages seen in this study in contrast to 14.8% showed by Heydari et al [21]. However, Solagberu et al. confirmed that the most likely part to be injured in a motorbike crash were the lower limbs, representing 70.5% [16]. Higher number described by Solagberu et al. might be due to the reason that the research was done on casualties in an orthopedic department as is our research, who were living and treated mainly for limb fractures. Lower limb injuries are more vulnerable to be injured just because of the fact that lower limbs are bare most of the time and there is no definite hard guarding present to avoid injuries. Vertebral column damages accouted for only 10 percent i.e. just 11 casualties. This is nearly alike to results by Kraus [15] in the US and Heydari et al. [27] in Iran who labelled occurrences of 3.1% and 2.4 % correspondingly. The skull is the greatest vulnerable place of deadly damage in the time of a motorbike collision, particularly in riders who are habitually not using helmet over the head which is shown by Nzegwu et al. in Benin City where none of the dead fatalities put on a protective helmet at the time of the collision [28].

The observations in this research proves, that motorbike accident injuries are the main public wellbeing problem, and the casualties also demand for care as they mainly make up the bulk of labor force. The point that majority of fatalities decease of head trauma also predicts the necessity for more research determinations directed towards head safety for motorcyclists. It is also recommended that authorities create pathways and zebra crossings to diminish the decease by walkers and let the motorcyclist ride safely.

CONCLUSION

The outcome of this research documents a health provider to foresee injury site and related injury. Strong application of road care etiquettes and filtering emergency medical care conveniences may stop precocious demises and incapacities incurred by RTAs.

Awareness concerning safety commands are desirable for the most high-risk groups. The statistical data concerning economically productive age-group were commonly involved, merits a crucial community response with distinct reference to engineering, education emergency care, environment of road accident fatalities.

LIMITATION

Number of study subjects and the single Centre study are the main limitations of this study.

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