

Pattern of Torso-trauma in Road Traffic Accidents in KSA

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ABSTRACT

Objectives: To study the pattern and severity of abdominal injuries due to road traffic accidents (RTA) in KSA.

Study Design: Retrospective descriptive.

Place and Duration of Study: This study was conducted in the Department of Surgery, King Fahad Hospital Al-baha, Kingdom of Saudi Arabia during one year from 2012 to 2013.

Materials and Methods: This is retrospective study of all patients admitted with torso- trauma in Department of Surgery KFH Al-Baha from the period of Aug. 2012 to Aug. 2013.

Results: In the 01 year period, 2520 patients were admitted following an RTA. Out of these, 537 were admitted due to torso trauma. 120 patients were admitted in SICU, 280 in intermediate dependency unit while remaining 137 admitted in surgical ward.

27 patient died due to torso trauma with multiple injuries. 3 patients died of pure liver trauma while 2 patients died of splenic injury.

Conclusion: Lot of burden over the hospital because of RTA related injuries. There was very severe and fatal injuries faced because of accidents happened in youth and male preponderance.

Key Words: RTA, Torso-trauma, Pattern of injuries,

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INTRODUCTION

Highest incidence of road traffic fatalities in the age group of 21-50 years in our study is in general agreement with the studies done by other researchers, with a male predominance of the victims.^{1,2}

The Kingdom of Saudi Arabia (KSA) has experienced a rapid economic growth since the oil boom in 1973 resulting in an enormous increase in the motorization rate (vehicle per 1000 population) associated with rapidly expanding road construction. The number of registered vehicles has increased from 144,768 in 1970 to 5,861,614 in 1994, a forty-fold increase in 24 years³. As a result, traffic accidents have become a serious problem faced by the country. During the period from 1971 to 1994, the numbers of traffic accidents injuries, and fatalities have increased by 30 times.⁴

Road traffic accidents (RTA) is most disastrous public health problem and it is the leading cause of death and disability in Kingdom of Saudi Arabia.⁵ Less than 2% of the drivers involved in accidents in Kingdom of Saudi Arabia are using seatbelts compared to 62% and 90% in USA and Canada, respectively⁶. Road traffic accidents are second most common cause of disability in the developing world.⁷

In our study 2520 persons were admitted in the

Accident and Emergency Department of KFH Al- Baha involves in a RTA from Aug.2012 to Aug. 2013. In the same period, 107 persons were received dead following a RTA. As General Surgeons we were directly involved in the management of patients with abdominal trauma. This group of patients was the focus of our study.

MATERIALS AND METHODS

The retrospective descriptive study was carried out in the patients admitted to the King Fahad Hospital (KFH) AL-BAHA, surgical department with documented thoraco abdominal injury with or without other associated injuries following RTA in the period from Aug., 2012 to Aug.,2013. The data collected included: patient demographics, physiological status on admission, definitive anatomic injury diagnosis, length of stay in SICU Intermediate dependency unit and surgical wards and patient outcome. Assessment of physiological status on admission was carried out using the Revised Trauma Score⁴. The Abbreviated Injury Scale (AIS), 1990 edition was used to classify the injuries and the injury severity score (ISS) was calculated for every patient^{8,9}.

RESULTS

During the period of one year a total 2520 poly trauma patients were brought to the hospital emergency after met RTA, 2034 (87.71%) were male and 486 (19.28%) were female. Male to female ratio was 4.15. Out of which 537 (21.31%) patients were admitted to the

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General Surgery department because of sustaining torso trauma. Out of 537, 417(77.65%) patients were male while 120 (22.34%) were female with male to female ratio 3.47:1. 120 (22.34%) managed in SICU, 280(52.4%) admitted in intermediate dependency unit while 137(25.51%) kept in general ward. The mean age was 37.4 years. Thoracic injuries were often found other than abdominal injury in our study which is also seen in similar other study groups.^{10,11}

Table No.1: Age distribution

Groups	No	%age
Less than 10 years	13	2.24%
11-20 years	27	5.02%
21-30 years	81	15.08%
31-40 years	182	33.9%
41-50 years	143	26.62%
51-60 years	57	10.61%
61-70 years	23	4.28%
71 and above	11	2.04%

Table No.2: Incidence of injury to the Intra-abdominal structures;

Abdominal structure/organ	No.	percent
Liver	63	11.73%
Spleen	56	10.42%
Kidney	26	4.84%
Small intestine	18	3.35%
Large intestine	11	2.04%
Retroperitoneal hematoma	38	7.07%
Urethra	7	1.89%
Diaphragm	5	0.9%
Urinary bladder	8	1.49%
Perineum	3	0.55%

Table No.3: Incidence of injury to other body regions associated with abdominal injury:

Body region	No.	Percent
Head and neck	123	22.90%
Chest	231	43.01%
Upper extremity	187	34.82%
Lower extremity	203	37.8%
Pelvis	53	9.8%
Spine	34	6.33%

**Table No.4: Causes of mortality among RTA cases:
Total patients expired: 31,
Mortality rate: 31/537= 5.8%**

Cause of mortality	No. of patients expired	Mortality rate
Head trauma	9	1.67%
Chest trauma	12	2.23%
Liver trauma	5	0.93%
Spleen	3	0.56%
Retroperitoneal hematoma	2	0.37%

Majority of RTA victims were between 30 years to 50 years of age which contributed 78% of the patients. The patients of extreme age group were less victimized. Liver and splenic injury was the most common intra-abdominal pathology involved in mortality of these patient followed by retro-peritoneal hematoma. Regarding torso-trauma other than abdominal injuries the most common involved region causing death was chest injury followed by head . Upper extremity was relatively less involved as compare to lower limb.

DISCUSSION

The Kingdom of Saudi Arabia is a developing country and has experienced a rapid economic growth resulting in an enormous increase in the motorization rate (vehicle per 1000 population) associated with rapidly expanding road construction. As a result, traffic accidents have become a serious problem faced by the country.

Al-Baha province being the biggest province of the Kingdom of Saudi Arabia and King Fahad Hospital(KFH) Al-baha is tertiary referral & biggest hospital of Al-baha region which has been very busy hospital for all types of diseases and especially for RTA associated trauma with peak inflow of patients during summer vacation because this is a mountain region and vacation spot for the people all over the Kingdom and because of very pleasant climate people used to come for summer vacation and also in Ramadan. This results in lot of congestion of traffic on the roads and increased number of accidents. Before no such study was carried out on thoraco abdominal trauma following road traffic accidents. In Kingdom of Saudi Arabia the condition of roads is much better than in Pakistan and motor vehicles are very high speed and tend to be latest more over there is trend for very high speed driving among the public resulting in very extensive injuries happened in RTA. Five to eight fractures in a single patient after met RTA was not an unusual in our hospital. In modern day civilian trauma centers, thoracic injury directly accounts for 20-25% of deaths^{14,15}, and thoracic injury or its complications are a contributing factor in a further 25% of trauma deaths^{16,17}. Out of the 537 patients with torso trauma, 31(5.77%) patients died. Only 10(1.86%) deaths could be attributed to abdominal trauma alone. In 5 (0.93%) patients, haemorrhage from the liver trauma was the cause of death and only 3(0.55%) died due to splenic bleeding. Incidence and mortality rate of liver injury is more as compare to spleen which in accordance to literature¹⁸. There was contrast finding in a study from India in which kidney was the most common injured organ among intra abdominal organ.

Other abdominal injuries did not contribute to mortality. Another important cause of death was retro peritoneal hematoma with associated pelvic injury and fracture causing death in 2(0.37%) patients. Jha et al¹²

report an increased incidence of injuries in the pedestrian group while two wheeler occupants are reported to be the commoner victims of RTA in the neighbouring city of Mangalore^{19,20}. however this is a contrast finding in Saudi society where pedestrian and two wheeler are rarely involved because most of people are accustomed to drive four wheel motor cars, more over to walk along the road side is not a usual habit. This is because KSA is deserted area with scattered population and very prosperous country and people are in habit of over using motor vehicle.

CONCLUSION

The hospitals of KSA are overburdened because of RTA related torso- trauma. There used to be very severe, extensive and fatal injuries happened mainly because of over speed accidents mostly in youth with male preponderance.

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