The Evaluation of Traffic Accident Deaths in Çorum Province

Erdal Ozer[1], Ozgur Enginyurt[2]

[1] Gaziosmanpasa University, Department of Forensic Medicine, Tokat, Turkey

[2] Ordu University, Department of Family Medicine, Ordu, Turkey

Abstract

Injuries and deaths related to traffic accidents play an important role in daily works of forensic medicine. For this reason, forensic experts need to have enough knowledge about the deaths caused by traffic accidents. Autopsy and dead examinations were retrospectively evaluated in patients who died due to traffic accidents in a 5 years period between 01.01.2005 and 31.12.2009 in the province of Corum. Cases were evaluated according to their age, sex, cause of death, and death place. It was emphasized to detect the socio-demographic characteristics of the patients who died as a result of traffic accidents and compared with similar studies in the literature. There were 141 cases traffic accident deaths, 98(%69.5) were male and 43 (30.5%) were female, age ranged between 7 months and 81 years and the average age was found to be 34.4. Male / female ratio was calculated to be 2.3. The largest group was pedestrians deaths 59 (41.8%), 32 deaths were between the ages of 21-30, 29 cases were between the ages of 0-10, 96 (68.1%) of the cases died in the hospital.Prevention from traffic accidents which is a major public health problem as well as in the world and in our country. We should educate the pedestrians and drivers, and ensure the compliance of the roads and vehicles for traffic and get full implementation of safety measures.

Key Words: Traffic accident, death, autopsy

(Rec.Date: Feb 27, 2013 - Accept Date: Mar 19, 2013)

Corresponding Author*:* Erdal Ozer, Gaziosmanpasa University, Department of Forensic Medicine, Tokat, Turkey
E-Mail: er4077@yahoo.com **Phone:** +90 505-2343006

Introduction

The first motor vehicle accident in Turkey occurred in 1910, after a car struck to pedestrian at Besiktas Istanbul. Pedestrian only injuried in this accident. The first motor vehicle accident in England occurred in 1896, when Bridget Driscoll, a pedestrian, was hit by a car at London. It was reported as she was died rapidly from head injuries after a car struck, while cars were zigzagging with a high speed over 4 miles per hour (6.4km/h) [1].

Cases of injury and death due to traffic accidents are a major public health problem. Traffic accidents are among the most important causes of death in developed countries [2-4]. Deaths due to traffic accidents constitute 25% of the deaths due to injury [5, 6]. It is estimated that, 1.2 million people were died and 50 million people were injured as a result of traffic accidents in the world annually [5-7]. In European Union, 50 000 deaths and 1.5 million injury cases have been reported due to traffic accidents each year.

The type and severity of injuries in traffic accidents depends on various factors. The force and the direction of the impact are the most important factors, also type, deceleration and the speed of the vehicle are important too [1]. Traffic accidents are considered as a major public health problem in our country as well as in all over the world especially in less developed or developing countries because of they have tragic consequences with high economic costs [6-9].

In most fatal traffic accidents, death occurs either immediately or within the first few hours, but occasionally the victim survives for days or weeks [1]. Pedestrians are more vulnarable to injury than protected occupants of vehicles. Children aged 15 and under accounted more nearly 40% of all pedestrian casualties, 36% of those killed or seriously injured and 14% of the fatalities. The majority of accidents to which pedestrians involve is a collision with a single vehicle [1].

Deaths and injuries after a traffic accident, requires a careful study [2]. This study includes crime scene investigation, forensic examination, examination of medical documents and autopsy of cases resulted in death [2].

In traffic accident fatalities, natural pathology can cause or contribute to the accident, driver may perform a suicide act by using his or her vehicle, driver may perpetrate a homicide by

using his or her vehicle as a weapon or may cause the death of a passenger in his vehicle in the context of a suicide-homicide, may be a dyadic death [10].

Nowadays, the prevention or reduction of traffic accidents that constitute a major cause of applications will be based on the studies. The aim of the study is to help overcome the problems by exploring the causes and consequences of an accident and revealing characteristics of deaths related traffic accidents in Corum.

Materials and Methods

In this study, autopsy and dead examination reports of a 5 years period between 01.01.2005 and 31.12.2009, were retrospectively evaluated in patients who died as a result of traffic accidents in province of Corum. Cases were evaluated according to their age, sex, cause of death, and death place. The results obtained were evaluated as a percentage by using SPSS 11.5 program.

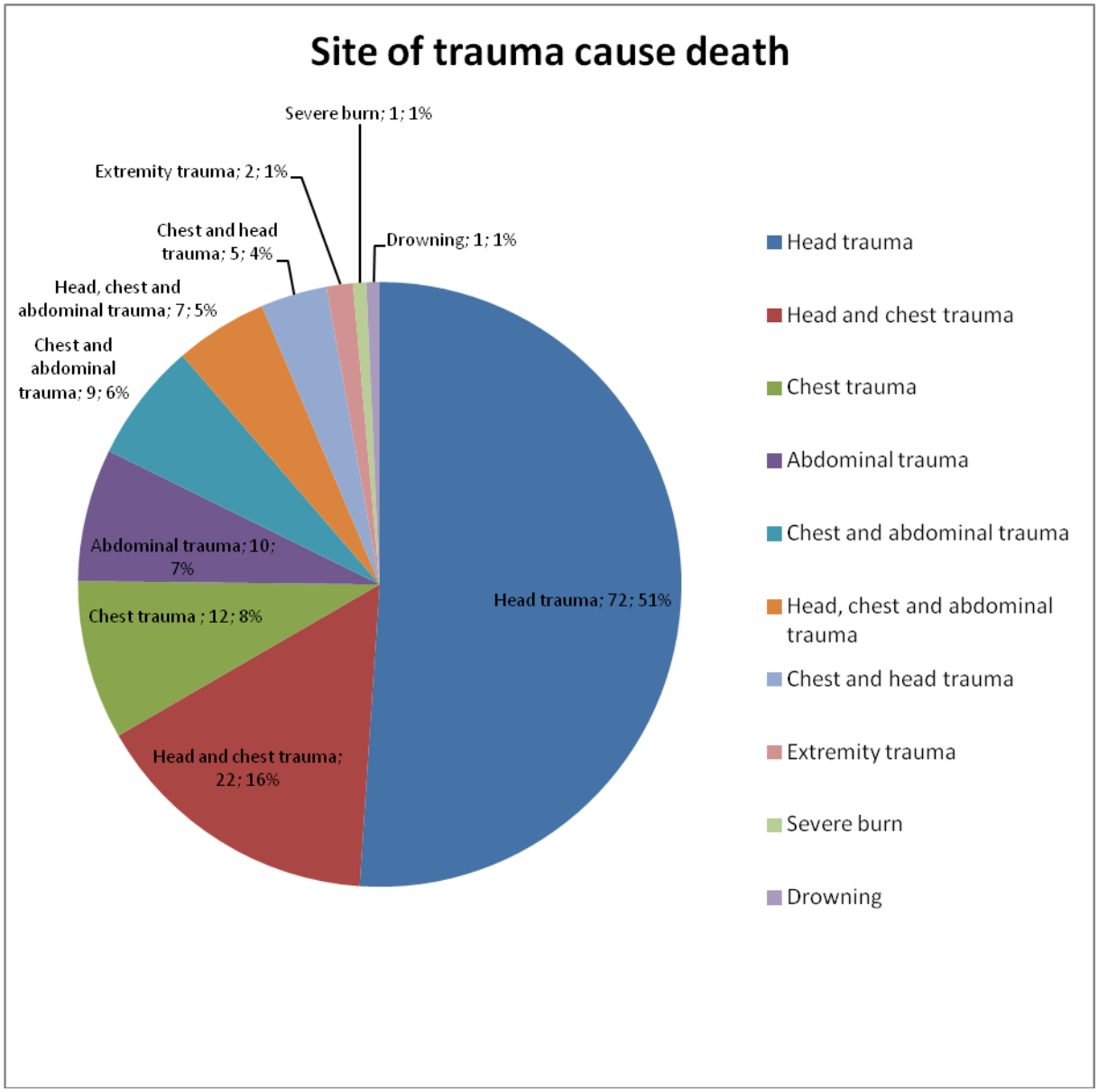
Results

Between 01.01.2005 and 31.12.2009, 98 (69.5%) of identified 141 cases were male and 43 (30.5%) were female, age of patients ranged between 7 months and 81 years and the average age was found to be 34.4. Male / female ratio was 2.3.

The largest group was pedestrians deaths 59 (41.8%), 36 (25.5%) cases were passengers in the vehicle, and 29 (20.6%) cases were the drivers. 11 (7.8%) of cases were motorcycle riders, 5 (3.6%) of cases were bike users and 1 (0.7%) case was a horse car rider.

32 deaths related to traffic accidents were between the ages of 21-30, 29 cases were between ages of 0-10. 96 (68.1%) of the cases died in the hospital, 32 (22.7%) of the cases died at the crime scene, the remaining 13 (9.2%) cases died on the road during transport. When the cases examined according to cause of death, it was found that the largest group constituted of 72 (%51.1) cases due to head trauma. It was followed by 22 (15.6%) cases with head and chest trauma together. 12 (8.5%) cases had only chest trauma, 9 (6.3%) of the cases had chest and abdominal trauma together. 10 (7.1%) of the cases had only abdominal trauma, 7 (5%) of the cases were head, chest and abdominal trauma, 5 (3.5%) of the cases were chest and head trauma, 2 (1.4%) of the cases had only extremity trauma. One case died due to severe burns

therefore traumatic findings could not be determined exactly, and one case was due to drowning (Graphic 1).



Discussion

Traffic accidents are important causes of death in developed countries and stated as preventable deaths [2,11]. They are the main causes of death in forensic medicine, the most common phenomena in our daily practice. In two different similar studies conducted by Aktas et al they gave the age range of deaths caused by traffic accidents as 31-40 (21.3%) and 21-30 years (23.14%) [12,13]. Aksoy et al stated that the age range was 31-40 years (25.6%) [14],

and; Gur gave the age range as 29-39 years (27.8%) [15]. In our study, we had 32 (22.7%) cases aged between 21-30 years of range, and 29 cases (20.5%) aged between 0-10 years.

In our country, scientific studies investigating the effects of road traffic accidents in the pediatric age group are limited. In a study of primary school children, an important part of trauma reported was due to the traffic accidents (38.3%) [16]. In a study investigating childhood deaths due to head trauma, they found that traffic accidents were the most common cause. Of these out of vehicle accidents were most frequent [17].

In our country, rate of death due to traffic accidents of children aged 0-14 years was reported as 14.7%. Considering the fact that, this rate is 4.09% in Germany, 5.86% in U.K, 6.59% in the U.S.A and 2.89% in Greece; In our study, we had 29 cases (20.5%) aged between 0-10 years, we think that in our country something is missing or incorrectly done about children's traffic education and traffic safety [18].

The proportion of men and women in accidents, percentage of male patients, in two different study conducted by Aktas et al [12,13] are given as 71.6% and 65.26%, while in the study of Akkay [19] was 77.0%. In our study, men constituted 98 (69.5%) of the cases. In our study there were more deaths due to traffic accidents in summer. Traffic accident related autopsies, were highest in August 28 (19.8%) and lowest in March 5 (3.5%).

In the studies conducted by Toro et al and Colak et al they reported that traffic accident deaths were mostly due to head trauma. We found smilar results with 72 (51.1%) due to head trauma, and 22 (15.6%) due to head and chest trauma together.

In traffic accidents blunt abdominal injuries are frequent. An important part of these injuries occur due to the use of seat belts. This condition is known as seat belt syndrome [21-23]. In our study, in 9 (6.3%) cases, chest and abdomen, in 10 (7.1%) cases only abdominal trauma were diagnosed and separation of the seat belt injury because of blunt trauma characteristics are not distinguished. Deaths due to traffic accidents in childhood, is seen in children while playing in the street (pedestrian or cyclist). This often occurs as a result of not abserving the children who need to be supervision of their parents

Traffic accidents that occurred in our country in 2008, 721 563 vehicles are involved in the accidents, 30 543 (4.2%) of these were motorcycles and mopeds, 2868 (0.4%) of these were

bicycles [24]. In a study conducted in Izmir, the cases admitted to the emergency department due to traffic accidents, were evaluated. The percentage of injuries due to motorcycle, motor bike and bicycle accidents were reported as 21.8% [25], but these authors didnt give the percentage of fatal injuries. In our study, 11 (7.8%) cases died from motorbike accidents, 5 (3.6%) cases died from bike accidents.We found that all these cases were not using protective helmets.

As a result of our study, for the prevention from traffic accidents which is a major public health problem as well as in the world and in our country. We should educate the pedestrians and drivers, and ensure the compliance of the roads and vehicles for traffic and get full implementation of safety measures. Studies about the percentage of different lesions in different body parts will help to create the strategies for the prevention from fatal traffic accidents will play a role in determining the type of accident, so function correctly for the judicial mechanisms.

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