

# Evaluation of road traffic accident-related deaths: An autopsy study

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## ABSTRACT

**BACKGROUND:** Road traffic accidents are a significant cause of death worldwide. This study aims to comprehensively examine the forensic medical characteristics of traffic accident-related deaths in Artvin province and to explore the relationships between mechanisms of death, autopsy findings, and demographic data.

**METHODS:** A total of 273 cases that underwent postmortem examination or autopsy at the Artvin Branch of the Council of Forensic Medicine between 2017 and 2024 were retrospectively reviewed. Among these, 50 cases determined to have died as a result of road traffic accidents were included. Data such as age, sex, the role of the deceased in the accident, location and timing of the accident, type of vehicle involved, place of death, severity of injury, and cause of death were analyzed.

**RESULTS:** The majority of traffic accident-related deaths occurred in males, particularly among drivers aged 61 years and older. Most accidents took place in rural areas, on weekdays, and between 12:01 PM and 6:00 PM. Automobiles were the most frequently involved vehicles (60%). Approximately half of the deaths occurred at the scene. In most cases, at least one bone fracture was observed, most commonly in the thoracic region (37%), followed by skull fractures (30%). Internal organ injuries were present in 98% of the cases, with the brain and intrathoracic organs being the most commonly affected. Spinal cord injuries were identified in approximately one-quarter (26%) of the cases. The most common cause of death was multiple body trauma (52%), followed by head trauma (20%).

**CONCLUSION:** To reduce deaths resulting from road traffic accidents, stricter speed control measures should be implemented on non-urban roads, road safety improvements should be prioritized, and regular health screenings should be encouraged for older drivers. Additionally, improvements in emergency response systems and the early use of advanced imaging techniques may help reduce morbidity and mortality rates.

**Keywords:** Road traffic accident; death; autopsy; forensic medicine.

## INTRODUCTION

An accident is defined as a sudden and unintended event occurring under unexpected and unforeseen circumstances. Road traffic consists of the movement and interaction of people, animals, and vehicles on roadways. A road traffic accident (RTA) is characterized as an incident involving one or more vehicles that results in injury, death, or property damage.<sup>[1]</sup>

RTAs are a major cause of death globally and result in millions

of injuries and permanent disabilities each year. These incidents are recognized worldwide as a significant public health problem, associated with high morbidity and mortality rates.<sup>[2]</sup> In 2021, it was reported that 1.19 million people died in traffic accidents globally, corresponding to approximately 15 deaths per 100,000 individuals.<sup>[3]</sup> RTAs are the leading cause of death among individuals aged 5 to 29 years and rank 12th among all age groups.<sup>[3]</sup>

According to the World Health Organization (WHO), ap-

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proximately 60% of the world's vehicles are located in low- and middle-income countries, where 92% of fatal traffic accidents also occur.<sup>[3]</sup> This issue is particularly concerning for developing countries such as Türkiye. According to data from the Turkish Statistical Institute, deaths due to traffic accidents in Türkiye increased by 85% between 2014 and 2023. Notably, the rate of increase was especially significant in the most recent year: in 2023 alone, there was a 25.2% rise compared to the previous year.<sup>[4]</sup>

This study aims to comprehensively investigate the medicolegal characteristics of RTA-related deaths that occurred in Artvin province, with a focus on identifying relationships among causes of death, autopsy findings, and demographic data. Additionally, the study seeks to offer recommendations based on the findings obtained.

## MATERIALS AND METHODS

In this study, cases involving death examinations or autopsies conducted by the Artvin Branch Office of the Council of Forensic Medicine between January 2017 and December 2024 were reviewed. Cases determined to have died due to RTAs were included in the analysis.

Scene investigation reports, death examination records, and autopsy reports were retrospectively examined. Variables such as age, gender, the role of the victim in the RTA, location of the accident, season, day and time of the accident, type of vehicle involved, place of death, severity of injuries, and cause of death were evaluated.

Approval for the study was obtained from the Artvin Çoruh University Scientific Research and Publication Ethics Committee on March 13, 2025 (Decision Number: E-18457941-050.99-171955), and from the Presidency of the Forensic Medicine Institute, Ministry of Justice, on March 18, 2025 (Decision Number: 21589509/2025/348). All stages of the research were conducted in accordance with the principles of the Declaration of Helsinki.

### Statistical Analysis

Statistical analyses were performed using IBM SPSS, version 26 (IBM SPSS Statistics for Windows, IBM Corp., Armonk, New York, USA). Data were presented as means, standard deviations, frequencies, and percentages. Differences between categorical variables were analyzed using the chi-square test. A p-value of <0.05 was considered statistically significant.

## RESULTS

In this study, 273 cases that underwent death examination or autopsy by the Artvin Branch Office of the Council of Forensic Medicine between 2017 and 2024 were reviewed. Of these, 50 cases determined to have died as a result of RTAs were included in the analysis.

RTA-related deaths were most frequently observed in the ≥61 age group (38%) and least commonly in the 0–10 age group (2%). The mean age of the victims was 51.54±20.55 years (range: 9–88 years). Of the cases, 84% (n=42) were male and 16% (n=8) were female, resulting in a male-to-female ratio of 5.25.

An autopsy was performed in 80% (n=40) of the cases, while only a death examination was conducted in 20% (n=10). Regarding the victims' roles in the accidents, 48% (n=24) were drivers, 32% (n=16) were passengers, and 20% (n=10) were pedestrians.

In terms of seasonal distribution, accidents occurred most frequently in summer (32%) and least frequently in winter (16%). Most accidents took place in rural areas (78%), on weekdays (86%), and between 12:01 PM and 6:00 PM.

The majority of cases involved automobile accidents (60%, n=30), followed by trucks (12%, n=6), construction machinery (8%, n=4), tractors (6%, n=3), and all-terrain vehicles (ATVs) (6%, n=3). Of the fatalities, 48% died at the scene, 48% during treatment in the hospital, and 4% while being transported to the hospital (Table 1).

Bone fractures were identified in 84% (n=42) of the cases. Among these, 21.4% had fractures in a single anatomical region, while 78.6% had fractures in multiple regions.

Skull fractures were observed in 30% (n=15) of the cases. Of these, 80% (n=12) involved multiple cranial bones, and 20% (n=3) were isolated skull fractures. Isolated fractures were most commonly found in the temporal bone (13.3%) and the base of the skull (6.7%). Facial bone fractures were identified in 28% (n=14) of the cases.

Thoracic fractures were present in 74% (n=37) of the cases. Among these, 62.2% (n=23) had multiple fractures involving different bones in the thoracic region, 32.4% (n=12) had isolated rib fractures, and 5.4% (n=2) had isolated sternal fractures. Upper limb fractures were identified in 18% (n=9) of the cases, while lower limb fractures were observed in 24% (n=12).

Vertebral fractures were found in 46% (n=23) of the cases. Of these, the majority (69.7%, n=16) involved the cervical vertebrae. Thoracic and lumbar fractures were each observed in 13% (n=3) of the cases. Only one case (4.3%) had fractures at multiple vertebral levels. Pelvic fractures were detected in 20% (n=10) of the cases (Table 2).

Internal organ injuries were observed in 98% (n=49) of the cases. Among these, 24.2% involved a single organ, while 75.8% involved multiple organs. Single organ injuries most commonly affected the brain (10.2%) and intrathoracic organs (12.2%). Isolated intra-abdominal organ injuries were observed in only one case (2%). The most common type of multiple organ injury involved simultaneous trauma to the brain, intrathoracic, and intra-abdominal organs (44.9%), followed by combined brain and intrathoracic injuries (18.4%)

**Table 1.** Demographic characteristics of road traffic accident victims and accident conditions

	n	%
Age group (years)		
0-10	1	2
11-20	1	2
21-30	8	16
31-40	7	14
41-50	6	12
51-60	8	16
≥61	19	38
Gender		
Male	42	84
Female	8	16
Victim status		
Driver	24	48
Passenger	16	32
Pedestrian	10	20
Accident time		
00:01-06:00	8	16
06:01-12:00	13	26
12:01-18:00	19	38
18:01-24:00	10	20
Day of accident		
Weekday	43	86
Weekend	7	14
Season of accident *		
Spring	14	28
Summer	16	32
Fall	12	24
Winter	8	16
Place of accident		
Urban	11	22
Rural	39	78
Place of death		
At the scene	24	48
During transfer	2	4
In hospital	24	48
Type of vehicle		
Automobile	30	60
Construction machinery	4	8
Tractor	3	6
Truck	6	12
All-terrain vehicle (ATV)	3	6
Motorcycle	2	4
Pickup	1	2
Minibus	1	2

\*Spring: March, April, May; Summer: June, July, August; Fall: September, October November; Winter: December, January, February.

**Table 2.** Types and distribution of fractures in road traffic accidents

	n	%
Fracture Type		
Single region (21.4%)	42	84
Multiple regions (78.1%)		
Skull fracture		
Yes	15	30
No	35	70
Skull fracture details (n=15)		
Single bone involvement		
Temporal bone	2	13.3
Base of skull	1	6.7
Multiple cranial bones	12	80
Facial bone fracture		
Yes	14	28
No	36	72
Thoracic region fracture	37	74
Thoracic fracture site (n=37)		
Sternum	2	5.4
Ribs	12	32.4
Multiple thoracic bones	23	62.2
Limb bone fractures		
Upper limb	9	18
Lower limb	12	24
Vertebral fracture		
Yes	23	46
No	27	54
Vertebral fracture site (n=23)		
Cervical spine	16	69.7
Thoracic spine	3	13
Lumbar spine	3	13
Multiple vertebral levels	1	4.3
Pelvic fracture		
Yes	10	20
No	40	80

and brain and intra-abdominal injuries (6.1%).

Major vascular injury was identified in 22% (n=11) of the cases, with the aorta being the most commonly affected vessel (45.4%). Spinal cord injury was detected in 26% (n=13) of the cases. Two cases involved upper extremity amputation, and in one case, complete transection of the body at the level of the second lumbar vertebra was observed (Fig. 1). Alcohol was detected in 18% (n=9) of the cases. The most common cause of death among RTA victims was multiple body trauma (52%), followed by head trauma (20%) (Table 3).

No statistically significant differences were found between the victims' roles in the accident and the presence of inter-

**Table 3.** Internal organ injuries, vascular injuries, and fatal factors in road traffic accidents

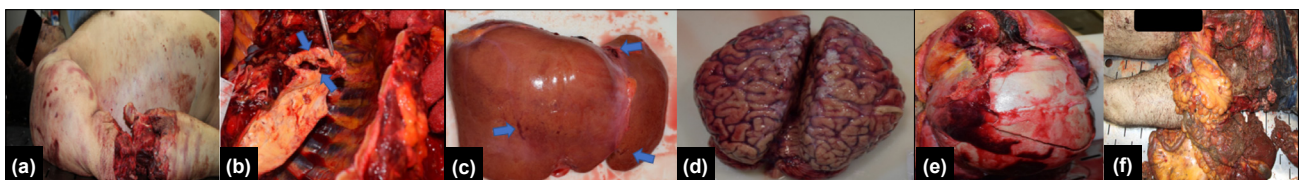
	n	%
Internal organ injury		
Yes	49	98
No	1	2
Injured internal organs (n=49)		
Single organ involvement (24.2%)		
Brain	5	10.2
Intrathoracic organs	6	12.2
Intra-abdominal organs	1	2
Multiple organ involvement (75.8%)		
Brain + intrathoracic	9	18.4
Brain + intra-abdominal	3	6.1
Brain + intrathoracic + intra-abdominal	22	44.9
Major vascular injuries		
Yes	11	22
No	39	78
Vascular injuries sites (n=11)		
Aorta	5	45.4
Aorta + inferior vena cava	1	9.1
External iliac artery	1	9.1
Radial artery	2	18.2
Pulmonary veins	1	9.1
Splenic vein	1	9.1
Spinal cord injury		
Yes	13	26
No	37	74
Amputations		
Yes	2	4
No	48	96
Presence of alcohol		
Yes	9	18
No	41	82
Cause of death		
Head trauma	10	20
Thoracic trauma	6	12
Abdominal trauma	3	6
Multiple body trauma	26	52
Drowning	5	10

nal organ injuries, major vascular injuries, spinal cord injuries, amputations, alcohol detection, or causes of death ( $p>0.05$ ) (Table 4).

## DISCUSSION

Road traffic accidents are a major global public health issue, particularly in developing countries, due to their high rates of morbidity and mortality.<sup>[5]</sup> It is estimated that over one million people die worldwide each year as a result of RTAs.<sup>[3]</sup> In Europe alone, approximately 50,000 deaths and 1.5 million injuries occur annually due to RTAs.<sup>[6]</sup> According to the Turkish Statistical Institute, the number of RTAs in Türkiye has increased in recent years. In 2023, a total of 1,314,136 RTAs were recorded in Türkiye, resulting in 6,548 deaths and 350,855 injuries.<sup>[4]</sup> Comprehensive epidemiological and forensic analyses based on autopsy findings in RTA-related deaths can help develop a detailed risk profile for such incidents and contribute to the creation of effective preventive strategies in the future.

In our study, 84% (n=42) of the RTA-related deaths were male and 16% (n=8) were female, resulting in a male-to-female ratio of 5.25. The literature similarly reports that RTA fatalities are more common among men.<sup>[7-9]</sup> According to WHO data, men are disproportionately affected by RTA-related deaths, with a male-to-female ratio of approximately 3:1. This disparity is thought to be linked to men's higher frequency of driving, greater tendency toward risky driving behavior, and overrepresentation in traffic-related occupations.<sup>[3]</sup> A meta-analysis also found that men are 1.66 times more likely than women to die in RTAs.<sup>[2]</sup> Additionally, our study found that the most affected age group was individuals aged 61 years and older. However, a study conducted in Türkiye reported that the majority of RTA-related deaths occurred in the 21–30 age group, a finding supported by other national studies.<sup>[7,10]</sup> Regional differences may significantly contribute to this variation. For instance, a study conducted in South Asia reported that 49.2% of traffic fatalities occurred in the 18–40 age group.<sup>[9]</sup> The WHO also states that most RTAs involve individuals under the age of 60, with 69% of deaths occurring within this age group.<sup>[3]</sup> The region where our study was conducted has a relatively higher proportion of elderly population compared to the national average,<sup>[11]</sup> and the increased anatomical and physiological vulnerability of older individuals may have contributed to the higher fatality rate in this demographic.



**Figure 1.** (a) Traumatic amputation. (b) Complete rupture of the aorta. (c) Lacerations in the liver. (d) Subarachnoid hemorrhage. (e) Multiple displaced skull fractures. (f) Evisceration of abdominal organs.

**Table 4.** Comparison of victim status with internal organ injuries, major vascular injuries, spinal cord injuries, amputations, alcohol presence, and cause of death

	<b>Driver (n=24) n (%)</b>	<b>Passenger (n=16) n (%)</b>	<b>Pedestrian (n=10) n (%)</b>	<b>2</b>	<b>p</b>
Internal organ injury					
Yes	23 (95.8%)	16 (100%)	10 (100%)	1.105	0.575
No	1 (4.2%)	-	-		
Major vascular injury					
Yes	7 (29.2%)	3 (18.8%)	1 (10%)	1.656	0.437
No	17 (70.8%)	13 (81.2%)	9 (90%)		
Spinal cord injury					
Yes	6 (25%)	3 (18.8%)	4 (40%)	1.468	0.480
No	18 (75%)	13 (81.2%)	6 (60%)		
Amputations					
Yes	1 (4.2%)	2 (12.5%)	-	1.980	0.372
No	23 (95.8%)	14 (87.5%)	10 (100%)		
Presence of alcohol					
Yes	5 (20.8%)	3 (18.8%)	1 (10%)	0.570	0.752
No	19 (79.2%)	13 (81.2%)	9 (90%)		
Cause of death					
Head trauma	7 (29.2%)	2 (12.5%)	1 (10%)	4.771	0.782
Thoracic trauma	2 (8.3%)	2 (12.5%)	2 (20%)		
Abdominal trauma	1 (4.2%)	1 (6.2%)	1 (10%)		
Multiple body trauma	11 (45.8%)	9 (56.3%)	6 (60%)		
Drowning	3 (12.5%)	2 (12.5%)	-		

2: Chi-square test.

Our study found that fatal RTAs most frequently occurred during the summer season, on weekdays, and between 12:01 PM and 6:00 PM. Similarly, the literature indicates that most accidents happen between 12:00 PM and 6:00 PM, and that weekday accidents are 2.78 times more common than those occurring on weekends.<sup>[8]</sup> Another study also reported a concentration of accidents during these specific hours. [9] The increased risk during peak traffic periods may be attributed to factors such as higher traffic volume, driver fatigue, and reduced attention. The elevated frequency of weekday accidents could be linked to increased urban and intercity traffic due to work, school, and daily routines. Moreover, the higher incidence of fatal RTAs in summer may be explained by the rise in long-distance travel, holiday-related journeys, and the adverse effects of hot weather on driver performance.

Most fatal RTAs in our study occurred outside urban areas. Similarly, the literature reports that 70.3% of fatal accidents take place in rural areas.<sup>[12]</sup> This may be related to the greater distance from healthcare facilities; in fact, 58.7% of fatal accidents have been reported to occur more than 10 kilometers

from a hospital.<sup>[12]</sup> Rural traffic fatalities are also commonly associated with speeding. A meta-analysis indicated that exceeding the speed limit increases the risk of death by up to 3.16 times.<sup>[2]</sup> These findings suggest that enforcing speed limits on intercity roads and improving access to emergency medical services may play a critical role in reducing traffic-related fatalities.

In our study, automobiles were the most common type of vehicle involved in fatal accidents. The literature similarly reports that automobiles are the most frequently involved vehicle type in fatal RTAs, likely due to their high prevalence in traffic.<sup>[10,13]</sup> Although automobiles offer relatively more protection compared to other motor vehicles, they can still lead to fatal outcomes, especially at high speeds or when seat belts are not used. Our findings also showed that nearly half of the victims were drivers. However, this differs from some other studies. For example, a study from West Africa reported that passengers were the most frequently deceased group in RTAs.<sup>[12]</sup> Similarly, a Turkish study found that 47.7% of traffic-related deaths were passengers.<sup>[7]</sup> Moreover, a me-



ta-analysis reported that pedestrians have a 2.07 times higher risk of death in RTAs compared to drivers and passengers.<sup>[2]</sup> These differences may be attributed to the geographic and demographic characteristics, as well as traffic patterns, of the Eastern Black Sea region where the study was conducted. Artvin province, in particular, is characterized by mountainous and rugged terrain, with narrow, winding roads and limited visibility. These factors increase driving risks and may explain the higher proportion of driver fatalities.

In our study, nearly half (48%) of the deaths occurred at the scene of the accident. A South Asian study reported that 90.3% of traffic fatalities occurred within minutes of the accident.<sup>[9]</sup> However, this may depend on the severity of the trauma. In cases of severe injury, death can occur within minutes, whereas timely and appropriate medical intervention may improve survival in less critical cases. One study found that only 20.4% of traffic-related deaths occurred at the scene and reported a statistically significant correlation ( $p < 0.001$ ) between survival time and distance to healthcare services.<sup>[12]</sup> The findings of our study may reflect that the injuries sustained in these accidents were severe enough to result in death before medical treatment could be administered.

In our study, at least one bone fracture was found in 84% of the fatal cases. Traumatic incidents transfer kinetic energy to the body, and the severity of the impact is directly related to the extent of tissue damage. RTAs are classified as high-energy trauma and are typically associated with severe bone fractures, which can significantly contribute to morbidity and mortality by causing damage beyond the skeletal system.<sup>[14]</sup> Our findings are consistent with the literature, which reports high rates of bone fractures in traffic fatalities.<sup>[12,15]</sup> The most frequently fractured bones in our study were in the thoracic region (37%), followed by skull fractures (30%). Blunt chest trauma is observed in 60–80% of RTA victims and is reported as the primary cause of death in approximately 25% of cases, and as a contributing factor in another 25%.<sup>[16,17]</sup> The frequent involvement of the chest region in accidents explains the high rate of fractures in this area. The literature indicates that rib fractures are among the most common blunt chest injuries, and an increased number of fractured ribs is associated with a higher risk of complications and mortality.<sup>[18–21]</sup> This effect is particularly pronounced in the elderly, and the critical role of chest trauma in determining prognosis is well documented.<sup>[21]</sup> In many RTAs, chest injuries are accompanied by skull injuries.<sup>[5]</sup> One study found that skull fractures were the most common in fatal accidents, followed by rib and sternal fractures.<sup>[9]</sup> Our findings are consistent with this, showing that thoracic and cranial fractures were frequently observed. However, it is also possible that some rib fractures in our cases may have resulted from cardiopulmonary resuscitation (CPR) performed by emergency services, potentially leading to an overestimation of thoracic fractures.

In our study, nearly all fatal cases (98%) involved at least one internal organ injury, with the most frequently affected organs

being the brain and intrathoracic organs. While the literature agrees that internal organ injuries are common in traffic fatalities, the most frequently affected organs vary across studies. One study reported spleen injuries as the most common, while another found that the brain, liver, and lungs were the most frequently injured.<sup>[12,15]</sup> The effect of trauma on internal organs is influenced by both anatomical positioning and physiological characteristics. In high-speed accidents, the head is exposed to sudden deceleration forces, resulting in cerebral contusions, diffuse axonal injuries, and intracranial hemorrhages. Additionally, blunt chest trauma, particularly in high-speed collisions, can cause a sudden increase in pressure on the sternum and ribs, leading to serious complications such as pulmonary contusions, hemothorax, and pneumothorax.

In our study, spinal cord injuries were observed in approximately one-quarter (26%) of the cases. RTAs are high-energy traumatic events with the potential to cause bone fractures and multiple organ injuries. Vertebral fractures resulting from such incidents are often accompanied by spinal cord injuries, which can lead to serious neurological damage. Notably, spinal cord injuries above the T6 level can result in death due to neurogenic shock, decreased cardiac preload, and parasympathetic discharge.<sup>[22]</sup> One study evaluating autopsies of RTA-related deaths reported spinal cord injuries in 6% of cases.<sup>[15]</sup> Another study found that 22% of cases had spinal cord injuries associated with vertebral fractures.<sup>[23]</sup> Spinal cord injury is one of the most critical determinants of post-traumatic quality of life. Cervical spinal cord injuries, in particular, are associated with respiratory failure and high mortality rates,<sup>[23]</sup> while thoracic and lumbar injuries may lead to severe functional impairments such as paraplegia or quadriplegia. Therefore, in the emergency setting, it is essential to systematically assess patients with RTA-related trauma who are at high risk for spinal injury. Early cervical immobilization should be performed, and in suspected cases of spinal trauma, advanced imaging modalities such as computed tomography and magnetic resonance imaging should be utilized.

In our study, the most common cause of death in RTAs was multiple body trauma (52%), followed by head trauma (20%). In contrast, the literature more commonly identifies head trauma as the leading cause of death in RTAs.<sup>[9,15,24]</sup> Several factors may have influenced our findings. The Eastern Black Sea region, where this study was conducted, is characterized by rugged terrain; most intercity roads are narrow, single-lane, sloped, and subject to frequent rainfall. These geographic and climatic conditions may increase the severity of RTAs and contribute to a higher incidence of fatal injuries involving multiple body regions.

### Limitations

This study has several limitations due to its retrospective design and single-center nature. The small sample size limits the generalizability of the findings. Additionally, the unique geographical characteristics of the study area—such as mountainous terrain and winding roads—make it difficult to ex-

trapolate the results to other regions. Although these factors may have influenced the outcomes, the study still provides valuable data regarding regional traffic safety.

## CONCLUSION

This study, which evaluated RTA-related deaths in Artvin province, revealed higher mortality rates particularly among males and elderly drivers. Most accidents occurred outside urban areas, on weekdays, and during midday hours, with automobile crashes being the most common. Approximately half of the deaths occurred at the scene, and the vast majority of cases involved at least one bone fracture. These fractures were most frequently located in the chest and skull, and nearly all cases exhibited internal organ injuries. Brain and lung injuries were the most common findings, with the majority of deaths resulting from multiple trauma.

To reduce traffic-related fatalities, it is necessary to strengthen speed monitoring and enhance road safety measures, especially on intercity roads. Increasing inspections during high-risk hours and in summer months may also have a preventive effect. Given the increased vulnerability of older individuals, regular health screenings, including assessments of reflexes, vision, and hearing, should be encouraged in this age group. Improving emergency response systems and implementing advanced imaging techniques during the early stages of trauma care are crucial steps toward reducing morbidity and mortality. Furthermore, fostering traffic awareness from an early age by integrating relevant topics into school curricula is recommended. Community-wide awareness campaigns, supported by local governments and public service announcements—such as billboard messages warning against risky behaviors like driving while drowsy—are also encouraged.

**Ethics Committee Approval:** This study was approved by the Artvin Çoruh University Ethics Committee (Date: 13.03.2025, Decision No: E-18457941-050.99-171955).

**Peer-review:** Externally peer-reviewed.

**Authorship Contributions:** Concept: B.K.; Design: B.K., H.B., A.S.; Supervision: B.K., H.B.; Resource: B.K., H.B., A.S.; Materials: B.K., H.B.; Data collection and/or processing: B.K., A.S.; Analysis and/or interpretation: B.K., A.S.; Literature review: B.K., H.B., A.S.; Writing: B.K., H.B., A.S.; Critical review: B.K., H.B., A.S.

**Conflict of Interest:** None declared.

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## ORİJİNAL ÇALIŞMA - ÖZ

### Trafik kazasına bağlı ölümlerin değerlendirilmesi: Otopsi çalışması

**AMAÇ:** Trafik kazaları, dünya genelinde önemli bir ölüm nedenidir. Bu çalışma, Artvin’de gerçekleşen trafik kazalarına bağlı ölümlerin adli tıbbi özelliklerini kapsamlı bir şekilde inceleyerek, ölüm mekanizmaları, otopsi bulguları ve demografik veriler arasındaki ilişkileri ortaya koymayı amaçlamaktadır.

**GEREÇ VE YÖNTEM:** Artvin Adli Tıp Şube Müdürlüğü tarafından 2017-2024 yılları arasında ölü muayenesi veya otopsi yapılan 273 olgu retrospektif incelenerek trafik kazasına bağlı öldüğü tespit edilen 50 olgu çalışmaya dahil edildi. Olgularda; yaş, cinsiyet, ölenin trafik kazasındaki konumu, kaza yeri, kaza mevsimi, günü ve saati, kazaya karışan araç türü, mağdurların ölüm yeri bilgileri ile trafik kazasında oluşan yaralanmanın ağırlığı ve ölüm sebebi gibi veriler değerlendirildi.

**BULGULAR:** Trafik kazalarına bağlı ölümlerin büyük çoğunluğunun erkeklerde ve ileri yaş grubundaki ( $\geq 61$  yaş) sürücülerde meydana geldiği saptanmıştır. Kazaların çoğunlukla şehir dışında, hafta içi günlerinde ve 12: 01–18: 00 saatleri arasında gerçekleştiği belirlenmiştir. Kazaya karışan araçlar arasında en sık otomobillerin (%60) yer aldığı tespit edilmiştir. Ölümlerin yaklaşık yarısının olay yerinde meydana geldiği gözlenmiştir. Olguların büyük çoğunluğunda en az bir kemik kırığı bulunmakta olup, kırıkların en sık göğüs bölgesinde (%37) ve ardından kafatasında (%30) lokalize olduğu belirlenmiştir. Olguların %98’inde en az bir iç organ yaralanması mevcut olup, en sık etkilenen organlar beyin ve intratorasik organlardır. Ayrıca olguların yaklaşık dörtte birinde (%26) medulla spinalis yaralanması saptanmıştır. Trafik kazalarına bağlı ölümlerde en yaygın ölüm nedeni çoklu beden travması (%52) olup, bunu kafa travmaları (%20) izlemektedir.

**SONUÇ:** Trafik kazalarına bağlı ölümleri azaltmak için şehir dışı yollarda hız denetimleri artırılmalı, yol güvenliği önlemleri iyileştirilmeli ve ileri yaş sürücüler için düzenli sağlık kontrolleri teşvik edilmelidir. Ayrıca, acil müdahale süreçlerinin geliştirilmesi ve ileri görüntüleme tekniklerinin erken kullanımı, morbidite ve mortalitenin azaltılmasına katkı sağlayabilir.

**Anahtar sözcükler:** Adli tıp; otopsi; ölüm; trafik kazası.

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