ORIGINAL ARTICLE

Comparison of pre-PICU and per-PICU interventions, clinical features and neurologic outcomes of motor vehicle collision trauma and other mechanisms of trauma in children

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ABSTRACT

BACKGROUND: Motor vehicle collisions (MVCs) are the number one cause of death in the pediatric age group. The aim of this study was to determine the differences between MVCs and other trauma mechanisms (OTMs) in patients who were followed up at a pediatric intensive care unit (PICU).

METHODS: Data were retrospectively collected for pediatric trauma patients hospitalized at a third level PICU between 2014 and 2018. Patients have been divided into two groups as MVC and OTM. Demographic data, pre-PICU interventions (cardiopulmonary resuscitation, intubation, injury severity scores, time period before intensive care), intensive care interventions (invasive mechanical ventilation, non-invasive mechanical ventilation, need for surgery, type of surgery, need for transfusion, and inotrope therapy) were compared between two groups. Outcomes were evaluated by survival, discharge from hospital, Pediatric Cerebral Performance Category (PCPC) at discharge, tracheotomy presence, and amputation performed.

RESULTS: During the 5-year study period, 135 patients were hospitalized for trauma. The injured body regions were the head and neck (61.5%), abdomen and lumbar spine (39.4%), and extremities and pelvis (36.3%). Multiple trauma was mostly seen in the MVC trauma group (p=0.001). The need for invasive mechanical ventilation and inotrope therapy was greater in the MVC group (p=0.002, 0.001 respectively). One hundred and twenty-three patients (91.1%) survived. The mortality rate was higher in the MVC group (p=0.026). The PCPC results were better in the OTM group (p=0.017).

CONCLUSION: MVCs lead to more multiple trauma cases than OTMs. Invasive mechanical ventilation, inotropes, and other intensive care interventions were necessary much more often in MVC victims than in OTM patients.

Keywords: Children; intensive care; motor vehicle; trauma.

INTRODUCTION

Pediatric trauma is the leading cause of death among children and adolescents. Injury due to trauma and homicide causes more deaths in children and adolescents than all other causes.[1] In European countries, the mortality rates of pediatric

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trauma patients range from 0.5% to 30%.[2] Motor vehicle collisions (MVCs) are the principal cause of death in the pediatric age group.[3] Many survivors of trauma suffer from temporary or permanent functional limitations. Trauma is frequently classified according to the number of significantly injured body parts (≥1), the severity of the injury (mild, moderate, or severe), and the mechanism of injury (blunt or penetrating).[4]

The management of pediatric trauma requires a multidisciplinary approach. Trauma management begins with pre-hospital care and continues throughout the rehabilitation process. Hence, pediatric trauma patients need special considerations. Pediatric trauma patients are referred to general emergency units defined as trauma centers and then followed up in surgical or general intensive care units. With the rise in pediatric critical care teams in Turkey in recent years, trauma patients are usually followed in pediatric intensive care units (PICUs) with a trauma surgery team after the necessary interventions have been made in the trauma center. The purpose of this study was to determine the differences between MVC and other trauma mechanism (OTM) in pediatric trauma patients who were admitted to a PICU.

MATERIALS AND METHODS

This study was a retrospective examination of the records of patients who were admitted or transferred to our PICU with a diagnosis of trauma between January 1, 2014 and December 31, 2018. We collected each patient's demographic data, which included age in months, gender, body weight in kilograms, and presence of co morbidity. The period during transfer to the PICU was recorded in hours. Interventions (venous access, intubation, respiratory support, central venous catheterization, intraosseous access, need for surgery, chest tube drainage, cardiopulmonary resuscitation, and extracorporeal treatments) before PICU admission were recorded. The trauma mechanism was categorized as either MVC or OTM. OTM included falls, crash to an object, burns, electrical injuries, firearm injuries, and drowning. The Pediatric Trauma Score (PTS), Revised Trauma Score (RTS), Injury Severity Score (ISS), trauma mechanism, body part(s) affected by the trauma, intensive care interventions (invasive mechanical ventilation, non-invasive mechanical ventilation, need for surgery, type of surgery, need for transfusion, and inotrope therapy), hospital-acquired infection, extracorporeal treatments(total plasma exchange, continuous renal replacement therapy, and extracorporeal membrane oxygenation), days in PICU, and days in hospital were obtained from the medical records. Outcomes were evaluated by survival, discharge from hospital, Pediatric Cerebral Performance Category (PCPC) at discharge, tracheotomy presence, and amputation performed.

Traumatic brain injury (TBI) was classified according to the Glasgow Coma Scale (GCS). A GCS score of 3–8 points was defined as severe TBI, a GCS score of 9–12 points was defined as moderate TBI, and a GCS score of 13–15 points was defined as mild or no TBI.

Multiple trauma was defined as more than one body region affected by trauma. Severe trauma was defined as an ISS (sum of the squares of the abbreviated injury score of the three most severely injured body regions) ≥15. The ISS was classified as follows: minor injury (1–9), moderate injury (10–15), severe injury (16–24), and critical injury (ISS ≥25).[5]

The patients were categorized into two groups as either MVC or OTM. All the collected variables were compared between the two groups. We also divided MVCs into two groups as either motor vehicle passenger or non-passenger motor vehicle trauma patients. The demographics, severity of injury, and outcomes of motor vehicle passenger and non-passenger motor vehicle trauma patients were compared separately. Approval for the study was obtained from the local ethics committee of Ankara University School of Medicine.

Statistical Analysis

Descriptive analysis of the results was conducted using the Statistical Package for the Social Sciences version 17.0 for Windows (IBM Company, New York, NY). Categorical data were expressed as proportions (%). Median and interquartile ranges were used for quantitative data. Differences were evaluated with the Chi-square test in cases of categorical variables. A non-parametric test (Mann Whitney U test) was used for continuous variables. Data were considered statistically significant at a $p<0.05$.

RESULTS

During the 5-year study period, 135 patients were hospitalized for trauma in our PICU. Demographic data, trauma characteristics, and pre-PICU interventions are detailed in Table 1.

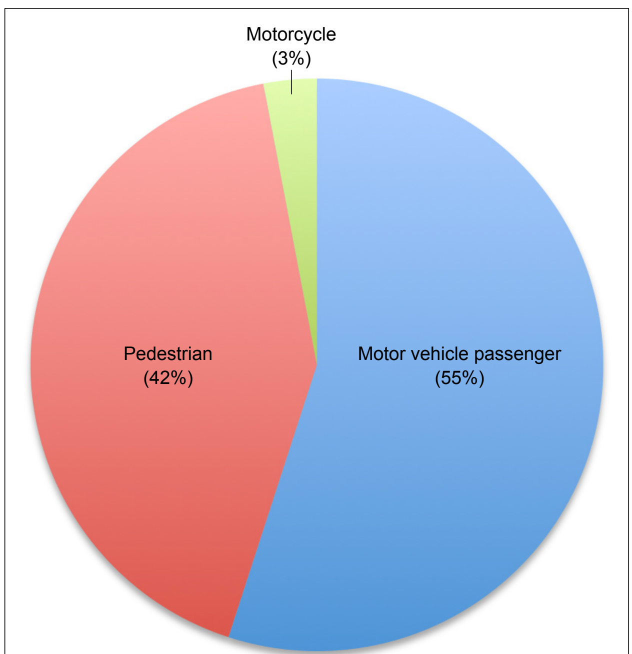

Figure 1. Profile of motor vehicle accidents.

Patients who were older than 12 years of age (18.5%) were mostly affected by MVCs. Fall from height was the predominant trauma etiology in infants and preschool age children (22.9%). MVC was the most commonly seen trauma mechanism (44.4%). The second most frequent mechanism was falling (31.8%), and the third was crash to an object (5.9%). The other OTMs in order of frequency were burns, electrical injuries, firearm injuries, and drowning. Profile of motor vehicle accidents is shown in Figure 1. The injured body regions in order of frequency were head and neck (61.5%), abdomen and lumbar spine (39.4%), and extremities and pelvis (36.3%). If we examined thoracic injuries, 29 patients had pulmonary contusion, 17 patients had pneumothorax, nine patients had costal fracture, three patients had hemothorax, and two patients had pneumomediastinum. When we evaluated abdominal injuries, splenic injury was seen in 19 patients. Sixteen patients had hepatic laceration. Renal injury was seen in five patients. Adrenal hematoma was seen in two patients. Multiple trauma was mostly seen in the MVC trauma group (p=0.001). Thoracic, abdominal, and pelvic/extremity injuries were seen significantly more often in MVC injuries (p=0.001, 0.003, and 0.001, respectively). Intubation, cardiopulmonary resuscitation, and need for pre-PICU surgery were more common in the MVC group (p=0.002, 0.001, and 0.05, respectively).

Pediatric intensive care assessments and interventions are presented in Table 2. The GCS scores were significantly lower in the MVC group (p=0.021). All trauma scores at admission (PTS, RTS, and ISS) were significantly worse in the MVC group. Every patient who died had an ISS score >25. Invasive

Table 1. Demographic data and pre-intensive care interventions of pediatric trauma patients

	Overall (n=135)	MVC (n=60)	OTM (n=75)	P
Age (month), median (IQR)	66 (24–132)	96 (51–144)	42 (18–90)	0.001
Age groups, n (%)				
0–2 years	37 (27.4)	7 (11.6)	30 (40)	0.001
3–6 years	37 (27.4)	11 (18.3)	21 (28)	
7–11 years	18 (13.3)	12 (20)	6 (8)	
12–18 years	43 (31.8)	25 (41.6)	18 (24)	
Gender, n (%)				
Male	91 (67.4)	41 (68.3)	50 (66.6)	0.837
Female	44 (32.5)	19 (31.6)	25 (33.3)	
Weight (kg) median (IQR)	20 (12.5–35)	26.5 (17–44.75)	15 (12–25)	0.001
Co morbidity, n (%)	15 (11.1)	8 (13.3)	7 (9.3)	0.462
Injured body region, n (%)				
Head and neck	83 (61.5)	40 (66.6)	43 (57.3)	0.268
Face	24 (17.8)	12 (20)	12 (20)	0.546
Thorax, thoracic spine	41 (30.4)	29 (48.3)	12 (20)	0.001
Abdomen, lumbar spine	53 (39.4)	32 (53.3)	21 (28)	0.003
Extremity and pelvis	49 (36.3)	32 (53.3)	17 (22.6)	0.001
Skin, subcutaneous, burns	15 (11.1)	0 (0)	15 (20)	0.001
Multiple trauma	81 (60)	49 (81.6)	32 (42.6)	0.001
Interventions before PICU, n (%)				
Venous access	126 (93.3)	57 (95)	69 (92)	0.487
Intubation	34 (25.1)	25 (41.6)	11 (14.6)	0.002
CPR	12 (8,8)	10 (16.6)	2 (2.6)	0.001
Surgical operation	3 (2.2)	3 (5)	0 (0)	0.05
Central venous catheter	3 (2.2)	2 (3.3)	1 (1.3)	0.433
Chest tube	2 (1.4)	2 (3.3)	0 (0)	0.111
Intra osseous access	1 (0.7)	1 (1.6)	0 (0)	0.262
Extracorporeal treatment	1 (0.7)	1 (1.6)	0 (0)	0.262
Time before admission in hours, median (range)	6 (3–15)	6.5 (3.25–21.5)	6 (2.5–12.5)	0.099

CPR: Cardiopulmonary resuscitation; IQR: Interquartile range; MVC: Motor vehicle collisions; OTM: Other trauma mechanisms; PICU: Pediatric intensive care unit.

Table 2. Pediatric intensive care follow-up and interventions of pediatric trauma patients

	Overall (n=135)	MVC (n=60)	OTM (n=75)	P
GCS at admission, median (IQR)	15 (10–15)	15 (6–15)	15 (13–15)	0.037
GCS grade at admission, n (%)				0.021
Severe TBI (GCS, 3–8)	32 (23.7)	21 (35)	11 (14.6)	
Moderate TBI (GCS, 9–12)	9 (6.6)	3 (5)	6 (8)	
Minor/No TBI (GCS, 13–15)	94 (69.6)	36 (60)	58 (77.3)	
PTS at admission, median (IQR)	9 (7–11)	8 (6–10)	9 (7–11)	0.011
RTS at admission, median (IQR)	12 (10–12)	11 (8–12)	12 (11–12)	0.003
ISS at admission, median (IQR)	16 (4–26)	23.5 (10.75–34)	9 (4–16)	0.001
ISS grade, n (%)				0.001
Minor injury (ISS, 0–9)	55 (40.7)	13 (21.6)	42 (56)	
Moderate injury (ISS, 10–15)	13 (9.6)	6 (10)	7 (9.3)	
Severe injury (ISS, 16–24)	25 (18.5)	11 (18.3)	14 (18.6)	
Critical injury (ISS, 25≤)	42 (31.1)	32 (53.3)	12 (16)	
Invasive mechanical ventilation applied	36 (26.6)	21 (35)	15 (20)	0.031
Hospital acquired infection	18 (13.3)	10 (16.6)	8 (10.69	0.308
RBC transfusion requirement	38 (28.1)	19 (31.6)	19 (25.3)	0.416
Inotroph requirement	21 (15.5)	16 (26.6)	5 (6.6)	0.001
Surgical operation requirement	51 (37.7)	24 (40)	27 (36)	0.634
Surgery type, n (%)				
Orthopedic	26 (19.2)	16 (26.6)	9 (12)	
Abdominal surgery	10 (7.4)	4 (6.6)	4 (5.3)	
Neurosurgery	9 (6.6)	3 (5)	6 (8)	
Wound care	7 (5.1)	2 (3.3)	2 (2.6)	
Burn care	6 (4.4)	0 (0)	8 (10.6)	
Vascular surgery	1 (0.7)	1 (1.6)	1 (1.3)	
Facial surgery	1 (0.7)	1 (1.6)	1 (1.3)	

ISS: Injury severity score; IQR: Inter quartile range; GCS: Glasgow coma scale; MVC: Motor vehicle collisions; OTM: Other trauma mechanisms; PTS: Pediatric trauma score; RBC: Red blood cell; RTS: Revised trauma score; TBI: Traumatic brain injury.

mechanical ventilation and inotrope requirements were more common in the MVC group. Non-invasive ventilation was applied as bi-level positive airway pressure to three patients in the MVC group. The rates of surgery and RBC transfusion were the same between the groups. Patients who needed surgery during follow-up mostly needed orthopedic surgery (19.2%). Laparotomy was performed for 10 patients (7.4%), and neurosurgery was required for nine patients (6.7%). Abdominal reconstruction surgery was applied to four patients. Two patients had intestinal reconstruction, one patient had hepatosplenic reconstruction, and one patient had urethral reconstruction. Splenectomy was performed on one patient. Hepatic left lobe segmentectomy was performed on one patient. There was no significant difference in hospital-acquired infections between the two groups (p=0.308).

Pediatric trauma outcomes are presented in Table 3. Hospitalization days and PICU days were not statistically different between the two groups. Tracheotomy was required for seven patients before discharge from the PICU. Six patients in the MVC group were discharged with tracheotomy. One patient in the MVC group had to undergo a right leg amputation. One hundred and twenty-three patients (91.1%) survived. The mortality rate was higher in the MVC group (p=0.026). PCPC results were better in the OTM group (p=0.017). Most of the patients discharged from hospital were in Category 1 (82.0%).

Demographics, trauma severity, and outcomes of motor vehicle passenger compared to non-passenger motor vehicle trauma patients are detailed in Table 4. There were no differences between the motor vehicle passenger and non-passenger motor vehicle trauma patient groups in terms of characteristics, trauma severity, and outcomes.

When the 15 non-survivors were evaluated, it was found that four died within 6 h. Ten patients died within 4 days. One

Table 3. Outcomes of pediatric trauma patients

	Overall (n=135)	MVC (n=60)	OTM (n=75)	P
Days in PICU, median (IQR)	3 (2–6)	3 (2–8.75)	2 (2–4)	0.127
Days in hospital, median (IQR)	5 (3–13)	8 (2.25–17)	5 (3–10)	0.072
Mortality rate, n (%)	12 (8.8)	9 (15)	3 (4)	0.026
Discharge from hospital, n (%)	123 (91.1)	51 (85)	72 (96)	0.013
Amputation, (n=123), n (%)	1 (0.8)	1 (1.6)	0 (0)	0.262
Tracheotomy, (n=123), n (%)	7 (5.6)	6 (10.0)	1 (1.3)	0.024
PSPC*, (n=123), n (%)				
Category 1	104 (82)	37 (72.5)	67 (93)	0.017
Category 2	5 (4)	4 (7.8)	1 (1.3)	
Category 3	2 (1.6)	1 (1.9)	1 (1.3)	
Category 4	11 (8.9)	8 (15.6)	3 (3.9)	
Category 5	1 (0.8)	1 (1.9)	0 (0)	
Category 6	0 (0)	0 (0)	0 (0)	

IQR: Inter quartile range; MVC: Motor vehicle collisions; OTM: Other trauma mechanisms; PCPC: Pediatric cerebral performance category; PICU: Pediatric intensive care unit; *n=51, for motor vehicle collision group, n=72, for other trauma mechanism group.

patient died after 27 days. All patients were intubated at the scene of the accident or in the resuscitation room. Cardiopulmonary resuscitation was performed on twelve patients (8.8%). MVC was the main type of trauma in non-survivors (75.0%). The median PRISM-III score of the non-survivors was 40 (interquartile range, 32–45). In the non-survivor group, the median ISS score was 49 (IQR, 34–66), the median RTS was 4 (IQR, 0–7), and the median PTS was 4 (IQR, 2–5). All the deceased patients had a GCS score of 3.

DISCUSSION

Trauma is the leading cause of mortality in children and adolescents throughout the world.[6] Motor vehicle crashes were found to be the most common reason for fatal injuries in children.[7] Another study indicated that road traffic accidents are the major cause of death in children in Europe.[8] According to a report from the World Health Organization, the mortality rate in road traffic injuries in children per 100,000 population was 10.7 in the world.[9] We wanted to define the differences between MVCs and OTMs of pediatric patients who were admitted to the PICU with the aim of improving trauma care in pediatric intensive care.

MVCs were found to be more common in the adolescent age group, which is consistent with other reports.[10,11] Male gender frequency did not differ between MVCs and OTMs, but male predominance was seen overall in both types of trauma.[6,12]

As a result of children having a relatively large head compared to their body, head injuries were found to be the most common form of injury in children.[13] In our study, head trauma was observed in most of the patients, but it did not vary between the MVC and OTM groups. These findings are similar to other studies in the literature. Furthermore, another study found that the most common fatal organ injury was head trauma.[14] All the non-survivors in our study group had severe head trauma, and each had a GCS score of 3.

Multiple trauma was seen in most of the MVC victims. Abdomen/extremity/thorax/pelvic injuries were more common in the MVC group. As a result, there were greater requirements for inotrope therapy, mechanical ventilation support, and surgery in the MVC group. Furthermore, mortality was higher in the MVC group. Multiple structural damage in the body causes a systemic response that can lead to life-threatening organ dysfunction.[13]

The timing of mortality in pediatric trauma patients was found to be early compared to adults.[15] In children, the time from arrival at the PICU until death was 1.2 days.[15] Four patients were lost in our study within six hours. In the non-survivor group, nearly half of the patients died within 24 h of reaching the PICU in our cohort. Therefore, pediatric intensivists should be particularly cautious and attentive during the 1st h of arrival of a pediatric trauma patient to the PICU.

There are several scoring systems to define trauma severity in adults. The PTS was the most common trauma score in children, but the ISS is the best predicting scoring system in pediatric trauma patients.[16] The MVC group had a worse PTS, ISS, RTS than the OTM group. This is likely the result of there being more cases of multiple trauma in the MVC group. All the deceased patients in this study had ISS scores >25.

Table 4. Demographics, severity and outcomes of motor vehicle passengers and non-passenger motor vehicle trauma patients

	MVP (n=33)	Non-MVP (n=27)	p
Age groups, n (%)			
0–2 years	6 (18.1)	1 (3.7)	0.296
3–6 years	8 (24.2)	8 (29.6)	
7–11 years	5 (15.1)	7 (25.9)	
12–18 years	14 (42.4)	11 (40.7)	
Gender, n (%)			
Male	21 (63.6)	20 (74)	0.387
Female	12 (36.3)	7 (25.9)	
Injured body region, n (%)			
Head and neck	22 (66.6)	18 (66.6)	1.000
Face	6 (18.1)	6 (22.2)	0.697
Thorax, thoracic spine	16 (48.4)	16 (59.2)	0.127
Abdomen, lumbar spine	17 (51.5)	15 (55.5)	0.755
Extremity and pelvis	16 (48.4)	16 (59.2)	0.405
Multiple trauma	25 (75.7)	24 (88.8)	0.191
GCS grade at admission, n (%)			
Severe TBI (GCS,3–8)	9 (27.2)	12 (44.4)	0.375
Moderate TBI (GCS,9–12)	2 (6)	1 (3.7)	
Minor/No TBI (GCS,13–15)	22 (66.6)	14 (51.8)	
ISS score, median (IQR)	18 (8.5–18.5)	26 (19–34)	0.162
ISS grade, n (%)			
Minor injury (ISS, 0–9)	9 (27.2)	4 (14.8)	0.183
Moderate injury (ISS, 10–15)	5 (15.1)	1 (3.7)	
Severe injury (ISS, 16–24)	4 (12.1)	7 (25.9)	
Critical injury (ISS, 25≤)	15 (45.4)	15 (55.5)	
Days in PICU, median (IQR)	3 (1.5–7.5)	3 (2–14)	0.503
Days in hospital, median (IQR)	8 (2.5–15.5)	9 (2–29)	0.404
Mortality rate, n (%)	5 (15.1)	4 (14.8)	0.971
PSPC*, n (%)			
Category 1	23 (82.1)	15 (65.2)	0.374
Category 2	0 (0)	2 (8.2)	
Category 3	0 (0)	1 (4.1)	
Category 4	4 (14.2)	5 (21.7)	
Category 5	1 (3.5)	0 (0)	
Category 6	0 (0)	0 (0)	

GCS: Glasgow Coma Scale; IQR: Inter quartile range; ISS: Injury severity score; MVP: Motor vehicle passenger; Non-MVP: Non-passenger motor vehicle trauma patients; PCPC: Pediatric cerebral performance category; PICU: Pediatric intensive care unit; TBI: Traumatic brain injury; *n=28, for MVP group, n=23, for Non-MVP group.

The RTS was more commonly used in adult trauma patients, and RTS <12 defined fatal injuries in 97.2% of patients.[17] The RTS values in the non-survivors in this study were below 8. However, these results could not be generalized to all pediatric trauma patients. More research is required to further evaluate pediatric trauma scoring systems.

The mortality rate for pediatric trauma patients varies among countries. Svantner et al.[2] conducted a 6-year study in a referral hospital in Switzerland and found 5.5% mortality rate. A single-center study in Germany reported a mortality rate of 13.4%, despite all trauma patients being severely injured. Our mortality rate was 8.8% in both cohorts. The MVC group had a higher mortality rate than the OTM group (15.0%, 4.0% respectively). The need for tracheotomy was higher in the MVC group. In addition, the PCPC value at discharge was worse in the MVC group than for the OTM group. Higher mortality in MVC in our cohort may be result of not to ensure safe transport of our children by not applying enough security equipment or by disobeying traffic rules. Of course, this result does not reflect our country's actual results, because there in not any study from Turkey for the prevention of motor vehicle injuries in children. We should do more research for injury prevention in MVC in Turkish children.

There are several limitations to this study. The patients' data were obtained and analyzed retrospectively, and the study was performed in a single center. Furthermore, our PICU is not affiliated with a trauma referral hospital. Another limitation is that we did not have enough data on field and emergency room interventions, and we did not know the means of transportation from the trauma site to the hospital. The use of restraints, helmets, seatbelts, and other safety equipment was not registered in medical records, so we could not define preventable injuries, especially in the MVC group.

Conclusion

MVCs were much more likely to cause multiple trauma than OTMs. As a result, MVC patients needed cardiopulmonary resuscitation and intubation more often at the site where the trauma occurred. MVC victims required more intensive care follow-up and intensive care interventions, such as invasive mechanical ventilator support and inotrope therapy than OTM patients. MVC patients' injuries should be followed up at experienced PICUs because MVCs have a higher mortality rate than OTMs. Early and appropriate interventions, especially during the 1st h and 1st day of hospitalization, could be life-saving. Larger and multi-centered studies will help us provide more information about pediatric trauma patients in the future.

Ethics Committee Approval: This study was approved by the Ankara University Faculty of Medicine Ethics Committee (Date: 21.05.2021, Decision No: 14-279-21).

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ORİJİNAL ÇALIŞMA - *ÖZ*

Çocuklarda motorlu araç çarpışma travması ve diğer travma mekanizmalarının çocuk yoğun bakım öncesi ve çocuk yoğun bakım kabulünde uygulanan müdahaleler, klinik özellikler ve nörolojik sonuçların karşılaştırılması

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AMAÇ: Motorlu araç kazaları (MAK), pediatrik yaş grubunda bir numaralı ölüm nedenidir. Bu çalışmanın amacı, çocuk yoğun bakım ünitesinde (ÇYBÜ) takip edilen hastalarda MAK ile diğer travma mekanizmaları (DTM) arasındaki farklılıkları belirlemektir.

GEREÇ VE YÖNTEM: 2014–2018 yılları arasında üçüncü düzey ÇYBÜ'de yatan pediatrik travma hastalarının veriler geriye dönük olarak kayıt edildi. Hastalar MAK ve DTM olarak iki gruba ayrıldı. Demografik veriler, yoğun bakım öncesi yapılan müdahaleler (kardiyopulmoner resüsitasyon, entübasyon, yaralanma şiddeti skorları, yoğun bakıma ulaşana kadar geçen süre), yoğun bakım müdahaleleri (invaziv mekanik ventilasyon, non-invaziv mekanik ventilasyon, ameliyat ihtiyacı, ameliyat türü, transfüzyon ihtiyacı ve inotrop tedavisi) iki grup arasında karşılaştırıldı. Sonuçlar sağkalım, hastaneden taburcu olma, taburculukta Pediatrik Serebral Performans Kategorisi (PSPK) ile değerlendirildi.

BULGULAR: Beş yıllık çalışma süresi boyunca, 135 hasta travma nedeniyle hastaneye kaldırıldı. Yaralanan vücut bölgeleri baş ve boyun (%61.5), karın ve bel omurgası (%39.4) ve ekstremiteler ve pelvis (%36.3) idi. Çoklu travma en çok MAK travma grubunda görüldü (p=0.001). Motorlu araç kazaları grubunda invaziv mekanik ventilasyon ve inotrop tedavi ihtiyacı daha fazlaydı (sırasıyla, p=0,002, 0,001). Yüz yirmi üç hasta (%91.1) hayatta kaldı. Mortalite oranı MAK grubunda daha yüksekti (p=0.026). Pediatrik Serebral Performans Kategorisi sonuçları DTM grubunda daha iyiydi (p=0.017).

TARTIŞMA: Motorlu araç kazaları, DTM'lerden daha fazla çoklu travma olgusuna yol açar. İnvaziv mekanik ventilasyon, inotroplar ve diğer yoğun bakım müdahaleleri, MAK hastalarında DTM hastalarına göre çok daha sık gerekliydi.

Anahtar sözcükler: Çocuk; motorlu araç kazası; travma; yoğun bakım.

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