ORIGINAL ARTICLE

Anesthetic management and early outcomes in patients with earthquake-induced crush and compartment syndrome: A single-center retrospective analysis

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ABSTRACT

BACKGROUND: This retrospective study aimed to evaluate anesthesia management, intraoperative support strategies, and 60-day clinical outcomes in patients requiring surgical intervention, including fasciotomy and/or amputation, due to crush and compartment syndrome following the February 6, 2023, Kahramanmaraş earthquakes. The study also sought to identify predictors of mortality and contribute to the field of disaster medicine.

METHODS: This single-center study reviewed the data of 64 patients who underwent emergency surgery between February 6 and April 6, 2023. Retrospectively collected and analyzed data included patient demographics, ASA (American Society of Anesthesiologists) physical status classification, anesthesia techniques used, intraoperative support provided, and 60-day follow-up clinical outcomes, including mortality, renal function, and muscle necrosis markers.

RESULTS: Most patients (93.8%) underwent surgery under general anesthesia due to systemic instability. This finding highlights the critical role of the systemic effects of traumatic injuries and crush syndrome in the choice of anesthesia. The 60-day mortality rate was 11.1%. Significant decreases in muscle necrosis markers, such as CK, AST, and ALT, were observed after fasciotomy. This finding suggests that even delayed fasciotomy may be effective in reducing the systemic toxic load. A key finding was that the preoperative albumin/lactate ratio was identified as a strong and independent predictor of mortality. This ratio may serve as a practical biomarker for patient risk stratification and prognosis.

CONCLUSION: In cases of crush and compartment syndrome following an earthquake, general anesthesia was widely preferred over regional techniques because of patients' severe systemic instability. The data show that surgical interventions, such as fasciotomy, can successfully reduce the systemic toxic load and improve patient outcomes. Furthermore, a simple biomarker, such as the preoperative albumin/lactate ratio, could be a critical tool for predicting patient risk and mortality, especially in resource-limited settings following a disaster. This study provides important information for planning anesthesia and surgical management strategies in similar disaster situations.

Keywords: Anesthesia; crush syndrome; earthquakes; fasciotomy; mortality.

INTRODUCTION

On February 6, 2023, two major earthquakes struck Türkiye, with epicenters in Pazarcık (Kahramanmaraş) (Mw 7.7) and Elbistan (Kahramanmaraş) (Mw 7.6).[1] These catastrophic events affected a wide geographic region encompassing 11 provinces, impacting approximately 14 million people and resulting in more than 50,000 deaths according to official reports.

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The most frequently encountered injuries in the post-earthquake period were extremity trauma and crush syndrome.[2] In cases when compartment syndrome develops, early fasciotomy is the gold standard of treatment. However, under disaster conditions, surgical intervention may be delayed. While some patients can be managed conservatively, others may require delayed fasciotomy or even amputation.[3,4] Furthermore, metabolites released following crush injuries can lead to acute kidney injury, which may be life-threatening.[5]

Our hospital, located approximately 595 km from the earthquake-affected region, did not experience shortages of anesthesia equipment or personnel for general anesthesia. On the first day following the disaster, most surgical patients received general anesthesia. This approach was influenced by the high incidence of crush syndrome, the unstable clinical condition of many patients, and the psychological stress associated with the disaster. Due to the overwhelming patient volume, it was not feasible to provide peripheral nerve blocks for all patients. Consequently, pain management during the initial phase relied on a multimodal approach combining systemic nonsteroidal anti-inflammatory drugs (NSAIDs) and opioids.

Following the 2023 Kahramanmaraş earthquakes, many injured individuals were transferred to city hospitals outside the disaster zone to receive surgical and intensive care. This study aims to evaluate anesthesia management strategies, including the techniques used and intraoperative supportive interventions, in patients who underwent surgery after the earthquake. Additionally, we analyzed clinical outcomes within the first 60 days post-disaster, identified risk factors associated with mortality, and assessed changes in laboratory parameters, with the goal of presenting the experience gained during this disaster response.

The two devastating earthquakes centered in Kahramanmaraş on February 6, 2023, resulted in widespread casualties and a high incidence of extremity injuries among survivors. In the setting of disaster surgery, crush and compartment syndromes are common; however, data on the anesthetic management of earthquake victims are limited. Therefore, this study aimed to describe anesthesia practices, intraoperative support strategies, and 60-day outcomes in earthquake victims requiring surgery, as well as to evaluate biomarkers associated with mortality.

MATERIALS AND METHODS

Study Design

This single center, descriptive retrospective study evaluates anesthesia management, intraoperative support strategies, and early outcomes in adult patients with earthquake induced crush and/or compartment syndrome who required emergency surgery following the February 6, 2023 Kahramanmaraş earthquakes.

Study Population and Sample

The study population consisted of earthquake victims who underwent emergency trauma surgery in the Neurology–Orthopedics operating room between February 6, 2023 and April 6, 2023. A total of 64 patients who underwent emergency fasciotomy and/or amputation during this period were included in the analysis.

Data Collection

Data were obtained from anesthesia records and the hospital information management system. Collected variables included demographic characteristics (age, sex, and body weight), types of trauma, number of affected extremities, and clinical parameters such as duration of intubation and length of hospital stay. Perioperative data included American Society of Anesthesiologists (ASA) physical status classification, type of anesthesia, surgical procedures performed, blood transfusion requirements, and use of intraoperative inotropic support. Laboratory parameters measured before and after anesthesia, such as urea, creatinine, albumin, aspartate aminotransferase (AST), alanine aminotransferase (ALT), creatine kinase (CK), and lactate, were also recorded. Outcome data, including mortality, were collected comprehensively.

Data Analysis

Data were analyzed using descriptive statistical methods and presented as line graphs, funnel plots, box plots, and tables. The Wilcoxon signed-rank test and paired t-test were used to compare laboratory values before and after fasciotomy. Correlation analysis and logistic regression were performed to assess the association between mortality and selected biomarkers.

Ethics

Ethical approval was obtained from the Scientific and Ethical Review Board for Medical Research (TABED) of Ankara Bilkent City Hospital (January 15, 2025; TABED 1-25-903). The study was conducted in accordance with the Declaration of Helsinki.

RESULTS

Demographic and Baseline Clinical Characteristics

A total of 64 patients (n=64) were included in the study. The mean age was 31.76±14.31 years, with a median of 28 years (range: 6–75). Females comprised 54.7% (n=35) of the cohort, while males accounted for 45.3% (n=29).

Regarding ASA physical status, 38.1% (n=24) of patients were classified as ASA IIE, 44.4% (n=28) as ASA IIIE, 14.3% (n=9) as ASA IVE, and 3.2% (n=2) as ASA VE (percentages calculated based on 63 patients with available ASA data). The most frequently performed procedure was fasciotomy (64.1%, n=41), followed by amputation (31.3%, n=20) and debridement (6.3%, n=4). General anesthesia (GA) was administered in 93.8% (n=60) of cases. At admission, 82.8% (n=53) of patients were breathing spontaneously, 7.8% (n=5) required oxygen support, and 9.4% (n=6) were intubated.

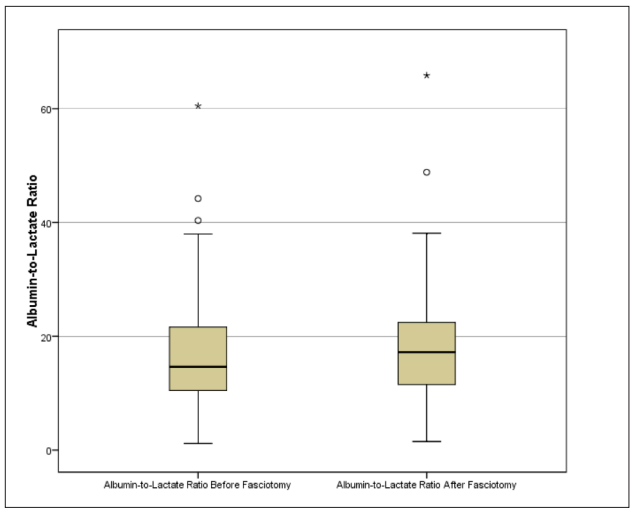

Figure 1. Boxplot of the albumin-to-lactate ratio before and after fasciotomy.

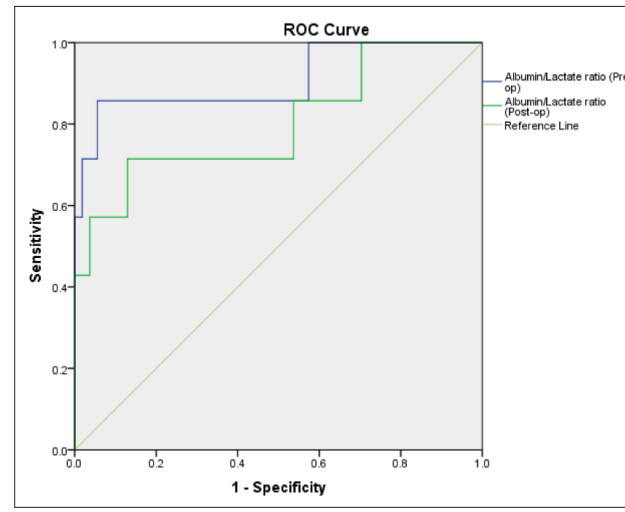

Figure 2. Receiver operating characteristic (ROC) curve of the albumin-to-lactate ratio before and after fasciotomy.

Perioperative Management and Clinical Outcomes

Sodium chloride solution (0.9% NaCl) was used intraoperatively in 93.8% of cases. Among patients requiring inotropic support, noradrenaline was the most commonly used agent (15.6%, n=10). Postoperative analgesia most frequently included tramadol (48.4%) and paracetamol (28.1%).

The mean operative time was 107.58±48.28 minutes. The mean intensive care unit (ICU) stay was 22.85±26.80 days, and the mean total hospital stay was 69.25±55.27 days. Hemodialysis was required in 45.9% (n=28) of patients, while continuous renal replacement therapy (CRRT) was used in 3.3% (n=2). The overall mortality rate was 11.1% (n=7).

Effect of Fasciotomy on Laboratory Parameters

Following fasciotomy, significant decreases were observed in CK, AST, ALT, and lactate levels (all p≤0.009). Hemoglobin and albumin levels also decreased significantly (p=0.010 and p=0.001, respectively).

Biomarkers Predicting Mortality

Correlation analysis showed that pre-fasciotomy base excess was inversely correlated with mortality (r=−0.413, p=0.001). The neutrophil-to-lymphocyte ratio (NLR) demonstrated a positive correlation with mortality both before and after fasciotomy (r=0.289, p=0.012; r=0.221, p=0.043, respectively). Platelet-to-lymphocyte ratio (PLR) was negatively correlated with mortality in both the pre- and post-fasciotomy periods (r=−0.246, p=0.028; r=−0.259, p=0.022). The albumin-to-lactate ratio (ALR) showed a negative correlation with mortality both preoperatively and postoperatively (Spearman's ρ=−0.450, p<0.001; ρ=−0.330, p=0.009).

Multivariable logistic regression analysis, including preoperative platelet-to-lymphocyte ratio (PLR), NLR, ALR, and C-reactive protein-to-lactate ratio (CRP-to-lactate ratio), identified preoperative ALR as an independent predictor of mortality (B=−0.364; Wald=8.579; p=0.003; odds ratio [OR]=0.695).

Graphical analyses further supported the prognostic value of ALR. The box plot illustrating ALR distribution before and after fasciotomy (Fig. 1) demonstrated a notable change in postoperative values. Receiver operating characteristic (ROC) analysis showed that both preoperative and postoperative ALR had strong predictive performance for mortality (Fig. 2). The area under the curve (AUC) for preoperative ALR was 0.907, indicating that it predicted mortality with 85.7% sensitivity and 85.2% specificity. The postoperative AUC for ALR was 0.799 (Table 7). These findings support the use of ALR as an early, noninvasive, and practical biomarker for predicting mortality.

DISCUSSION

Our cohort was characterized by a young median age (28 years), a high burden of systemic injury (61.9% classified as ASA IIIE or higher; 39 of 63 patients with available ASA data), crush syndrome secondary to prolonged entrapment, and a high rate of acute kidney injury (dialysis requirement: 45.9%). Key findings included the predominant use of GA (93.8%), a high rate of fasciotomy (64.1%), and an in-hospital mortality rate of 11.1%.[1,6] The most notable and original finding of this study is that preoperative ALR independently predicted mortality (OR: 0.695; p=0.003), indicating its potential as a clinically useful tool for early risk stratification.[6] Graphical analyses further supported the prognostic value of ALR. The postoperative increase in ALR observed in Figure 1 is consistent with clinical improvement and a reduction in metabolic burden. Additionally, ROC analysis (Fig. 2) and the corresponding area under the curve values (Table 7) demonstrated that preoperative ALR predicts mortality with high accuracy. From a clinical perspective, mortality risk was significantly higher in patients with ALR values below the cutoff of 9.05.

Table 1. Demographic and baseline clinical characteristics of the patients

Age (years)	
Median (interquartile range)	28 (23-41)
n (%)	
Sex	
Male	29 (45.3%)
Female	35 (54.7%)
ASA Score	
ASA IIE	24 (38.1%)
ASA IIIE	28 (44.4%)
ASA IVE	9 (14.3%)
ASA VE	2 (3.2%)
Type of surgery	
Fasciotomy	41 (64.1%)
Amputation	20 (31.3%)
Debridement	4 (6.3%)
Other	2 (3.1%)
Type of anesthesia	
General anesthesia	60 (93.8%)
Spinal anesthesia	3 (4.7%)
Epidural anesthesia	1 (1.6%)
Respiratory status on admission	
Spontaneous breathing	53 (82.8%)
Oxygen support	5 (7.8%)
Intubated	6 (9.4%)

ASA classification was unavailable for one patient; percentages are calculated based on 63 patients with available data.

These findings suggest that ALR may be integrated into disaster surgery settings for early triage and prioritization of intensive care, alongside existing scoring systems.

The high rate of general anesthesia in our cohort is consistent with reports from other centers following the same disaster. Kılınçarslan et al.[1] reported a GA rate of 93.9% in 375 cases, while Erkilic et al.[6] reported its use in 577 of 650 procedures. Although regional anesthesia (RA) is theoretically recommended in mass casualty settings due to its potential for resource conservation and reduced opioid requirements,[7] the pathophysiological features of severe crush injury, such as hemodynamic instability, metabolic acidosis, and possible coagulopathy, often limit its applicability. In particular, neuraxial techniques may carry a risk of collapse due to sympathectomy, while altered consciousness and psychological trauma can further impair patient cooperation.[8-11] Nevertheless, when feasible, RA can provide effective anesthesia and analgesia, reduce opioid-related adverse effects, and potentially decrease intensive care utilization.[10,12-14]

Most fasciotomies in our cohort were performed "late" relative to the traditionally recommended 6–12-hour window.[15-19] Therefore, indications for fasciotomy should be individualized, taking into account factors such as sustained pressure >30 mmHg for more than 8 hours, as well as overall patient condition.[16,20,21] The significant postoperative reductions in CK, AST, ALT, and lactate suggest effective source control and attenuation of systemic toxicity. These findings support the notion that even delayed fasciotomy may be beneficial in selected patients with adequately resuscitated and viable limbs. The concurrent increase in CRP reflects a subsequent systemic inflammatory response, underscoring the need for

Table 2. Perioperative management and clinical outcomes

Continuous variables	**Mean±SD/Median (interquartile range)**
Duration of surgery (min)	107.58±48.28/90 (75-128)
Duration of intubation (days)	3.80±11.69/0 (0-0)
ICU length of stay (days)	22.85±26.80/10 (4-36)
Hospital length of stay (days)	69.25±55.27/59 (32-102)
Glasgow Coma Scale (GCS)	13.95±2.63/15 (15-15)
Categorical variables, n (%)	
Intraoperative fluid management	
0.9% NaCl	60 (93.8%)
Balanced crystalloid solution	6 (9.4%)
Colloid (Voluven)	4 (6.3%)
Other (buffered, dextrose, polydex)	16 (25.0%)
Inotropic support	
Noradrenaline	10 (15.6%)
Dopamine	2 (3.1%)
Adrenaline	1 (1.6%)
Blood product usage	
Red blood cell suspension	18 (28.1%)
Fresh frozen plasma	8 (12.5%)
Platelet suspension	2 (3.1%)
Fibrinogen	1 (1.6%)
Dialysis requirement	
Hemodialysis	28 (45.9%)
CRRT	2 (3.3%)
Mortality	
Yes	7 (11.1%)
No	56 (88.9%)

SD: Standard deviation; ICU: Intensive care unit; CRRT: Continuous renal replacement therapy. Some patients received more than one type of fluid or analgesic; therefore, percentages may exceed 100%. 60-day outcome data were unavailable for one patient; percentages are calculated based on 63 patients with available data. Dialysis status data were unavailable for three patients; percentages are calculated based on 61 patients with available data.

Table 3. Comparison of selected laboratory parameters before and after fasciotomy

	Before fasciotomy (Mean±SD)	Before Fasciotomy Median (Min–Max)	After fasciotomy (Mean±SD)	After fasciotomy Median (Min–Max)	p-value
Lactate (mmol/L)	2.36±2.42	1.81 (0.50-14.36)	1.82±1.70	1.32 (0.41-11.51)	0.009*
Albumin (g/L)	24.48±7.29	24.00 (8.03-49.00)	22.79±6.08	21.00 (11.00-49.00)	0.001*
Uric acid (mg/dL)	5.12±3.12	4.75 (0.90-14.10)	4.58±2.82	4.05 (0.90-11.40)	0.001*
GFR (mL/min/1.73 m²)	88.78±58.67	102.50 (0.00-206.00)	94.02±62.44	106.00 (0.00-243.00)	0.110*
AST (U/L)	852.36±1352.53	274.00 (22.00-6345.00)	741.74±1313.86	225.00 (19.00-7626.00)	<0.001*
ALT (U/L)	355.05±627.52	136.00 (23.00-3412.00)	346.67±735.12	129.00 (23.00-5036.00)	0.001*
Hemoglobin (g/dL)	9.42±1.80	9.10 (5.70-14.60)	8.85±1.72	8.50 (5.40-14.70)	0.010†
CRP (mg/L)	123.30±77.15	108.00 (0.49-344.40)	133.72±80.67	116.20 (4.00-346.50)	0.027*
Creatine kinase (U/L)	30605.20±53098.47	8478.00 (125.00-257067.00)	24271.62±41329.81	6093.00 (64.00-193733.00)	<0.001*
Potassium (mmol/L)	4.38±1.15	4.10 (2.50-7.80)	4.27±1.05	4.10 (2.60-7.20)	0.120†
Chloride (mmol/L)	105.23±5.79	105.00 (89.00-117.00)	105.89±5.12	106.00 (95.00-118.00)	0.238†
Base excess (BE) (mmol/L)	−2.88±6.66	-2.10 (-22.20-13.40)	−1.90±5.53	-2.15 (-19.30-14.20)	0.457*
Neutrophil-to-lymphocyte ratio (NLR)	11.81±8.03	9.49 (1.27-40.96)	12.33±7.63	10.72 (2.47-42.37)	0.395*
Platelet-to-lymphocyte ratio (PLR)	253.61±178.42	194.08 (41.18-724.32)	272.25±201.89	217.27 (41.82-1012.50)	0.391*
Albumin-to-lactate ratio	17.7±11.03	14.63 (1.18-60.49)	18.39±11.06	17.21 (1.52-65.85)	0.680*

*SD: Standard deviation; Min: Minimum; Max: Maximum; GFR: Glomerular filtration rate; AST: Aspartate aminotransferase; ALT: Alanine aminotransferase; CRP: C-reactive protein; PLT: Platelet; LYM: Lymphocyte. Wilcoxon signed-rank test; †Paired t-test.

Table 4. Correlation analysis between mortality and biomarker ratios

	Correlation coefficient (r/ρ)	p-value
Pre-fasciotomy base excess (BE) (mmol/L)	-0.413*	0.001
Post-fasciotomy base excess (mmol/L)	-0.182*	0.085
Pre-fasciotomy neutrophil-to-lymphocyte ratio (NLR)	0.289*	0.012
Post-fasciotomy neutrophil-to-lymphocyte ratio (NLR)	0.221*	0.043
Pre-fasciotomy platelet-to-lymphocyte ratio (PLR)	-0.246*	0.028
Post-fasciotomy platelet-to-lymphocyte ratio (PLR)	-0.259*	0.022
Pre-fasciotomy albumin-to-lactate ratio (ALR)	-0.450†	<0.001
Post-fasciotomy albumin-to-lactate ratio (ALR)	-0.330†	0.009

*PLT: Platelet; LYM: Lymphocyte. Point-biserial correlation; †Spearman correlation.

Table 5. Logistic regression analysis results for mortality

Variable	B	SE	Wald	p value	OR (95% CI)
Preoperative albumin-to-lactate ratio (ALR)	-0.364	0.124	8.579	0.003	0.695 (0.545-0.886)

B: Regression coefficient; SE: Standard error; OR: Odds ratio; CI: Confidence interval.

aggressive ICU management to prevent complications such as late sepsis and acute respiratory distress syndrome (ARDS).[22]

The prognostic value of the ALR observed in this study is consistent with findings reported in sepsis, septic shock, polytrauma, traumatic brain injury (TBI), and other critical illnesses.[23-26] However, some studies have reported higher lactate-to-albumin ratios in non-survivors without demonstrating independent predictive value in multivariable analy-

Table 6. Key prognostic biomarkers for mortality

Biomarker/Ratio (preoperative)	Correlation with mortality (ρ/r)	p-value	Logistic regression result (OR)
Albumin-to-lactate ratio (ALR)	ρ=-0.450	<0.001	**0.695 (p=0.003)**
Base deficit	r=-0.413	0.001	Not independently pre-dictive
Neutrophil-to-lymphocyte ratio (NLR)	r=0.289	0.012	Not independently pre-dictive
Platelet-to-leukocyte ratio (PLR)	r=-0.246	0.028	Not independently pre-dictive

Table 7. Analysis of preoperative and postoperative albumin-to-lactate ratios

Parameter	AUC	Std. Error	p-value	95% CI (Lower–Upper)	Cut-off	Sensitivity (%)	Specificity (%)
Albumin-to-lactate ratio (preoperative)	0.907	0.076	<0.001	0.758–1.000	9.05	85.7	85.2
Albumin-to-lactate ratio (postoperative)	0.799	0.106	0.011	0.591–1.000	13.4	71.4	72.2

ses, or without superiority over established scoring systems.[27,28] Mechanistically, ALR reflects the interplay between perfusion and metabolic stress (lactate) and the patient's inflammatory and nutritional status (albumin),[29,30] thereby serving as a marker of "physiologic exhaustion." In the context of disaster medicine, ALR may offer a practical tool for early triage and resource allocation.

Previous earthquake series have documented a high incidence of crush injuries and compartment syndrome.[16,31-34] Similarly, our cohort demonstrated a high burden of severe extremity trauma, with fasciotomy performed in 64.1% of patients and amputation in 31.3%. Fluid resuscitation predominantly involved isotonic saline. While early aggressive fluid therapy is critical for preventing renal injury, further studies are needed to clarify the impact of fluid type and volume on clinical outcomes.

This study has several limitations, including its retrospective, single-center design and relatively small sample size (n=64). Prospective, multicenter studies are needed to validate the prognostic utility of ALR in disaster settings. Further research should also address optimal decision-making in late-presenting compartment syndrome (fasciotomy versus amputation), potentially incorporating advanced imaging modalities and novel biomarkers. Additionally, long-term outcomes, including functional status, psychological impact, and quality of life, should be further investigated.

CONCLUSION

In this cohort of 64 surgically managed earthquake victims, GA predominated due to instability and limited patient cooperation. Significant postoperative reductions in CK, AST, ALT, and lactate levels indicate effective attenuation of systemic toxic burden, even in cases of delayed surgical intervention, whereas persistent inflammatory responses highlight the ongoing need for intensive care. Preoperative ALR independently predicted mortality, suggesting its potential as a practical tool for early triage in mass disaster settings.[6,23-26,29,30] Future studies should prospectively validate the prognostic value of ALR, refine evidence-based management strategies for late-presenting compartment syndrome, and assess long-term outcomes.

Ethics Committee Approval: Ethical approval was obtained from the Scientific and Ethical Review Board for Medical Research (TABED) of Ankara Bilkent City Hospital (Date: 15.01.2025, Decision No: TABED 1-25-903).

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Informed Consent: Informed consent was not required due to the retrospective design of the study; this was approved by the Ethics Committee.

Authorship Contributions: Concept: T.N.T.; Design: T.N.T., G.E.; Supervision: T.N.T., M.N.K.; Resource: S.T.; Materials: T.N.T.; Data collection and/or processing: G.E., S.T.; Analysis and/or interpretation: M.N.K., G.E.; Literature review: G.E.; Writing: T.N.T.; Critical review: S.T., M.N.K.

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ORİJİNAL ÇALIŞMA - *ÖZ*

Deprem kaynaklı crush/kompartman sendromu hastalarında anestezi yönetimi ve erken dönem sonuçlar: Tek merkezli retrospektif analiz

AMAÇ: Bu retrospektif çalışma, 6 Şubat 2023 Kahramanmaraş depremleri sonrası crush ve kompartman sendromu nedeniyle cerrahi müdahale (fasyotomi ve/veya ampütasyon) gerektiren hastalarda anestezi yönetimini, intraoperatif destek stratejilerini ve 60 günlük klinik sonuçları değerlendirmeyi amaçlamıştır. Çalışma, mortaliteyi öngören belirteçleri belirleyerek afet tıbbı alanına katkı sağlamayı hedeflemektedir.

GEREÇ VE YÖNTEM: Tek merkezli olarak yürütülen bu çalışma kapsamında, 6 Şubat–6 Nisan 2023 tarihleri arasında acil cerrahi uygulanan 64 hastanın verileri incelenmiştir. Demografik bilgiler, hastaların ASA (Amerikan Anesteziyoloji Derneği) fiziksel durum sınıflandırması, uygulanan anestezi teknikleri, operasyon sırasında verilen destek tedavileri ve 60 günlük takip süresince elde edilen klinik sonuçlar (mortalite, böbrek fonksiyonları, kas nekrozu belirteçleri) retrospektif olarak toplanmış ve analiz edilmiştir.

BULGULAR: Hastaların büyük çoğunluğu (%93.8) sistemik instabilite nedeniyle genel anestezi altında ameliyat edilmiştir. Bu durum, travmatik yaralanmaların ve crush sendromunun sistemik etkilerinin anestezi seçimindeki belirleyici rolünü göstermektedir. 60 günlük takip sürecinde mortalite oranı %11.1 olarak belirlenmiştir. Fasyotomi sonrası kas nekrozu belirteçleri olan CK, AST ve ALT seviyelerinde anlamlı düşüşler gözlenmiştir. Bu bulgu, geç uygulanan fasyotominin dahi sistemik toksik yükü azaltmada etkili olabileceğini ortaya koymaktadır. En önemli bulgulardan biri, preoperatif albümin/laktat oranının mortalite için güçlü ve bağımsız bir öngörücü olarak saptanmasıdır. Bu oran, hastaların risk sınıflandırması ve prognoz tahmini için pratik bir biyobelirteç olarak öne çıkmaktadır.

SONUÇ: Deprem sonrası crush ve kompartman sendromu gibi durumlarda hastaların şiddetli sistemik instabilitesi nedeniyle genel anestezi, bölgesel tekniklere kıyasla daha yaygın olarak tercih edilmiştir. Elde edilen veriler, fasyotomi gibi cerrahi müdahalelerin sistemik toksik yükü başarılı bir şekilde düşürdüğünü ve hasta sonuçlarını iyileştirebileceğini göstermektedir. Ayrıca, preoperatif albümin/laktat oranı gibi basit bir biyobelirtecin, özellikle kısıtlı kaynakların olduğu afet bölgelerinde, hasta riskini ve mortaliteyi öngörmede kritik bir araç olabileceği sonucuna varılmıştır. Bu çalışma, benzer afet durumlarında anestezi ve cerrahi yönetim stratejilerinin planlanması için önemli bilgiler sunmaktadır.

Anahtar sözcükler: Anestezi; deprem; crush sendromu; fasyotomi; mortalite.

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