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Original Article

Overview of the Role of Hemogram Parameters in Determining the Severity of Abdominal Pain

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Keywords: Acute abdomen; hemogram; involuntary guarding; medical treatment; rebound tenderness; surgical treatment.

ABSTRACT

Objective: Acute abdomen is a dangerous condition that necessitates attentive care. The etiology of acute abdomen is quite complex and alternative diagnostic methods are very valuable as it may indicate life-threatening conditions. The purpose of this study was to examine the role of physical examination and laboratory indicators in relation to surgical and medical treatment options in the emergency department (ED).

Methods: This single-center retrospective study was conducted on 735 patients aged between 18 and 90 years admitted to the ED of our hospital between January 01, 2019, and January 01, 2020. Patients' demographics (age and gender), hospitalization data, presence of rebound and involuntary guarding, differential diagnosis, treatment approach (medical or surgical treatment), and laboratory parameters were analyzed.

Results: The mean age of all patients was 45.5±18.6 years and male patients were dominant (51.1%). The most common diagnoses were acute appendicitis, acute gastroenteritis, and acute cholecystitis, respectively. Patients who had surgical treatment were significantly younger than those who received medical treatment ($p<0.001$). Rebound tenderness and involuntary guarding were more pronounced in the patients who received medical treatment. Inflammatory laboratory parameters were higher in patients who received surgical treatment. The presence of rebound tenderness, decreased age, elevated leukocyte, and neutrophil levels, as well as decreased red cell distribution width showed significant associations in favor of surgical treatment.

Conclusion: Results suggest that the presence of rebound tenderness, elevated neutrophil, and decreased age may be predictive for the treatment modality in patients with acute abdomen.

INTRODUCTION

Acute abdomen is a condition characterized by the sudden onset of abdominal pain. Although its causes can range from benign and self-limiting conditions to emergency surgeries, it is typically a symptom of an intraabdominal disease, such as acute appendicitis, acute pancreatitis, acute cholecystitis (AC), ovarian torsion, ischemic bowel disease, and peptic ulcer disease.[1-6] Acute abdominal pain (AAP) is one of the most frequently encountered complaints (7–10%) among emergency department patients (EDs).[7,8] As the AAP has a complex etiology and may be indicative of life-threatening conditions, it is necessary to employ a broad differential diagnostic approach.

Although diagnostic approaches for AAP have been improved significantly, there are a number of issues with the

diagnosis of the underlying cause that can lead to misdiagnoses.[9-11] Difficulties in the differential diagnosis of AAP derive from the involvement of multiple organ systems in the abdominal region, the possibility of various pathologies ranging from benign to fatal, and the variations in patient presentation due to sex and age.[12]

AC is the acute inflammation of the gallbladder, caused in 95% of cases by a calculus or cystic duct obstructing the gallbladder neck.[13] AC is one of the leading causes of AAP and the second leading cause of abdominal surgery after acute appendicitis.[14-16] Acute appendicitis may be difficult to accurately diagnose due to the presentation of atypical symptoms.[17] In addition, brief right upper abdominal pain and Murphy's sign are reported to be less accurate in the examination of AC in the elderly.[18] On the other hand, spontaneous presentation of AC and acute appendicitis, although uncommon, has been reported in the literature.[19-21]

Despite advancements in diagnosis and treatment, the diagnosis and severity of acute abdomen remain difficult to determine. Furthermore, differential diagnosis is essential to reduce the number of unnecessary procedures and time to intervention. Therefore, the purpose of this study was to investigate the role of physical examination and laboratory parameters, as well as their association with a therapeutic approach, in patients with acute abdomen who were referred to the ED.

MATERIALS AND METHODS

Study Design and Population

This single-center retrospective study focused on 735 patients admitted to the emergency medicine department between January 1, 2019, and January 1, 2020, with abdominal pain with rebound and/or guarding. The research

Table 1. Demographical and clinical characteristics of the patients

	Minimum	Maximum	Mean±SD
Age (years)	16	97	45.5±18.6
Length of hospital stay (days)	0	40	3.2±3.9
		n (%)	
Gender			
Female		359 (48.9)	
Male		376 (51.1)	
Involuntary guarding			
–		23 (3.1)	
+		712 (96.9)	
Rebound			
–		384 (52.2)	
+		351 (47.8)	
Involuntary guarding			
Medical		447 (60.8)	
Surgical		288 (39.2)	
Rebound			
Medical		538 (73.2)	
Surgical		197 (26.8)	
Acute appendicitis		192 (26.1)	
Acute gastroenteritis		185 (25.2)	
Acute cholecystitis		140 (19.0)	
Others		218 (29.7)	
USG		323 (43.9)	
CT		215 (29.2)	
CT + USG		508 (69.1)	
CT + USG			
Medical		226 (55.5)	
Surgical		282 (44.5)	
Treatment			
Medical		447 (60.81)	
Surgical		288 (39.19)	

USG: Ultransopnography; CT: Computed tomography, SD: Standard deviation.

was approved by the University of Health Sciences Gaziosmanpasa Training and Research Hospital ethics committee on November 10, 2021, and was assigned the number 358. The study was carried out in accordance with the Helsinki Declaration on Human Research and the ICMJE Criteria, as well as all applicable laws. Due to the retrospective nature of the study, patients' informed consent for the publication of their medical data was not obtained. All patients' personal information was rigorously protected. Patients' demographics (age and gender), length of hospital stay, presence of rebound and involuntary guarding, differential diagnosis, treatment approach (medical or surgical treatment) and laboratory parameters (white blood cell [WBC], hemoglobin [Hgb], red cell distribution width [RDW], mean cell volume, platelet [PLT], platelet distribution width, mean platelet volume [MPV], procalcitonin and C-reactive protein [CRP] levels, lymphocyte ratio, neutrophil ratio, neutrophil-to-lymphocyte ratio (NLR) and platelet-to-lymphocyte ratio [PLR]) were analyzed. Cases with incomplete physical examination, laboratory and examination records, cases under the age of 18 and over the age of 90 years, and cases with diagnoses that would cause chronic abdominal pain were excluded from the study.

Upon admission to the ED, the patient's hemogram and biochemistry levels were measured and recorded. For hemogram examinations, a Beckman Coulter Automated CBC Analyzer (Beckman Coulter, Inc., Fullerton, CA, USA) was utilized. The Cobas 6000 was utilized to analyze sample biochemistry data (C6000-Core, Cobas c-501 series, Hitachi, Roche, USA).

Statistical Analysis

For the analysis, SPSS v. 25.0 (IBM, USA) statistical software was utilized. Data descriptors included mean, standard deviation (SD), minimum, maximum, frequency, and ratio values. Using the Kolmogorov–Smirnov test, the distribution of variables was examined. The Mann–Whitney U test was developed to analyze quantitative independent data for independent samples. In the examination of qualitative independent data, the Chi-square test was utilized, and the Fisher's test was utilized when the Chi-square test requirements were not met. Using univariate and multivariate logistic regression, the magnitude of the parameters' effects was analyzed. $p<0.05$ indicated statistical significance.

RESULTS

The number of male patients was more than female patients among 735 patients, and the mean age of all patients was 45.5±18.6 years. The frequency of patients treated with medical treatment was higher in patients presenting involuntary guarding and/or rebound compared to the patients that were not presenting involuntary guarding and/or rebound. Ultrasonography (USG) or computed tomography (CT) scans were performed on 538 patients for diagnostic purposes. Thirty of them had both CT and USG scans. Sequentially, acute appendicitis, acute gastroenteritis, and AC were the most frequently encountered diagnoses. Of all patients, 288 were treated surgically (Table 1).

Patients diagnosed with involuntary guarding and rebound during the physical examination were divided into two groups according to the treatment method they received. The mean age, lymphocyte, and RDW levels in patients with rebound who received surgical treatment were significantly lower than those who received medical treat-

Table 2. Analysis of variables according to rebound and involuntary guarding findings and treatment modality

	Rebound			Involuntary guarding		
	Surgical	Medical	p	Surgical	Medical	p
Age (years)	39.5±16.9	47.6±18.7	<0.001	39.69±17.1	49.24±18.66	<0.001
Length of hospital stay (days)	4.07±3.5	2.91±4.1	<0.001	4.50±4.63	2.40±3.40	<0.001
CRP (mg/L)	83.70±9.4	39.5±70.1	<0.001	62.54±85.77	44.12±74.33	<0.001
WBC ($\times10^9$/L)	13.72±5.1	10.9±4.43	<0.001	13.32±5.21	10.67±4.16	<0.001
Hgb (g/dL)	13.34±2.1	13.1±2.02	0.530	13.32±2.05	13.00±2.01	0.021
MCV (fL)	86.1±5.88	85.7±6.8	0.730	86.10±5.91	85.66±6.92	0.510
RDW (%)	13.54±1.26	14.05±1.72	<0.001	13.66±1.47	14.07±1.70	<0.001
PLT (10^3/μL)	264.90±89.1	273.1±88.5	0.130	268.2±88.12	272.6±89.15	0.460
Pct (μg/L)	0.29±0.3	0.27±0.08	0.910	0.29±0.34	0.27±0.08	0.680
MPV (fL)	10.2±1.3	10.1±1.28	0.256	10.15±1.26	10.10±1.29	0.430
PDW (fL)	16.14±0.75	16.18±0.48	0.837	16.16±0.68	16.18±0.48	0.940
Neutrophil (%)	78.02±9.54	72.9±12.35	<0.001	77.43±10.35	72.19±12.35	<0.001
Lymphocyte (%)	15.65±8.52	19.43±10.55	<0.001	16.15±9.04	19.87±10.60	<0.001
NLR (%)	7.55±6.58	6.51±7.53	<0.001	7.55±7.09	6.30±7.39	<0.001
PLR (%)	24.44±23.8	22.07±24.94	<0.001	24.64±23.55	21.47±25.26	<0.001

CRP: C-reactive protein; Hgb: Hemoglobin; MCV: Mean cell volume; MPV: Mean platelet volume; NLR: Neutrophil-to-lymphocyte ratio; Pct: Procalcitonin; PDW: Platelet distribution width; PLR: Platelet-to-lymphocyte ratio; PLT: Platelet; RDW: Red cell distribution width; WBC: White blood cell.

Table 3. Analysis of demographic, hematological and imaging variables according to treatment method

	Surgical	Medical	p
Age (years)	39.6±17.07	49.2±18.70	<0.001
Length of hospital stay (days)	4.5±4.46	2.40±3.40	<0.001
CRP (mg/L)	62.5±85.70	44.1±74.30	<0.001
WBC (×10^9/L)	13.32±5.21	10.7±4.16	<0.001
Hgb (g/dL)	13.32±2.10	13.0±2.01	0.021
MCV (fL)	86.1±5.91	85.7±6.90	0.512
RDW (%)	13.66±1.47	14.07±1.70	<0.001
PLT (10^3/µL)	268.1±88.10	272.6±89.2	0.459
Pct (µg/L)	0.29±0.30	0.27±0.09	0.68
MPV (fL)	10.2±1.30	10.1±1.29	0.43
PDW (fL)	16.16±0.68	16.18±0.48	0.944
Neutrophil (%)	77.43±10.35	72.2±12.35	<0.001
Lymphocyte (%)	16.15±9.04	19.87±10.60	<0.001
NLR (%)	7.55±7.09	6.30±7.39	<0.001
PLR (%)	24.64±23.55	21.47±25.26	<0.001
CT + USG, n (%)	282 (55.5)	226 (44.5)	<0.001

CRP: C-reactive protein; Hgb: Hemoglobin; MCV: Mean cell volume; MPV: Mean platelet volume; NLR: Neutrophil-to-lymphocyte ratio; Pct: Procalcitonin; PDW: Platelet distribution width; PLR: Platelet-to-lymphocyte ratio; PLT: Platelet; RDW: Red cell distribution width; WBC: white blood cell; USG: Ultransopnography; CT: Computed tomography.

ment. In contrast, patients with rebound who had surgical treatment had significantly longer hospital stays and higher levels of CRP, WBC, neutrophil, NLR, and PLR than those who received medical treatment. The mean age, lymphocyte, and RDW levels in patients with involuntary guarding who received surgical treatment were significantly lower than those who received medical treatment. In addition, patients with involuntary guarding who received surgical treatment, the length of hospital stay was longer and CRP, WBC, Hgb, neutrophil, NLR and PLR levels were significantly higher than the group receiving medical treatment (Table 2).

When the patients were divided into two groups according to treatment method after diagnosis, it was found that the mean age, lymphocyte, and RDW levels were significantly lower in the patients who received surgical treatment, while the length of hospital stay was significantly longer and CRP, WBC and neutrophil levels, as well as NLR and PLR, were significantly higher in the surgical treatment group. According to the physical examination findings, the number of surgical treatments in patients diagnosed with CT or USG was significantly higher than the group of patients who received medical treatment (Table 3).

Rebound, age, WBC, Hgb, RDW, neutrophil, lymphocyte, and NLR variables showed significant association in the univariate regression analysis of independent variables in favor of surgical treatment. In the multiple regression analysis of these variables, rebound, age, WBC, RDW, and neutrophil parameters showed significant associations in favor of surgical treatment (Table 4).

DISCUSSION

AAP is one of the most frequently encountered complaints of the patients admitted to ED and as it can be a presentation of a serious medical intraabdominal condition, urgent attention and intervention are required. In our study, we investigated the association between the treatment approach (medical or surgical), laboratory parameters, and demographical characteristics.

AC and acute appendicitis are among the two major conditions causing acute abdomen.[15,16] Rebound and involuntary guarding are two reliable clinical presentation of acute appendicitis,[22] while AC is mostly characterized by persistent right upper quadrant pain and Murphy's sign.[15] Acute gastroenteritis, on the other hand, is a common infection worldwide causing around 1.3 million deaths yearly.[23] In our study, the most common diagnoses were acute appendicitis, acute gastroenteritis, and AC, respectively, similar to other studies.[24-27]

It was observed that younger age was associated with a preference for surgical treatment. Acute abdomen is most common in young adults (20–29 years old), is more prevalent in men, and requires surgical intervention in 36.4% of cases.[28] In addition, 51.1% of the patients admitted to the ED in our study were male. In the univariate analysis of our investigation, WBC, Hgb, RDW, neutrophil, lymphocyte, and NLR were found to be significantly associated with the surgical treatment preference of patients with acute abdomen. In contrast, WBC, RDW, and neutrophil levels were found to be substantially associated with the preference for surgical treatment. Previously, a study involving

Table 4. Relationship between variables and treatment method

	Univariate model		p	Multivariate model		p
	OR	95% CI (minimum–maximum)		OR	95% CI (minimum–maximum)	
Involuntary guarding	0.421	0.154–1.147	0.091	0.279	0.095–0.815	0.080
Rebound	0.243	0.177–0.332	<0.001	0.234	0.158–0.347	<0.001
Age	0.030	0.961–0.979	<0.001	−0.031	0.960–0.980	<0.001
CRP	0.003	1.000–1.004	0.003			
WBC	0.000	0.997–1.002	<0.001	0.081	1.035–1.136	<0.001
Hgb	0.079	1.004–1.164	0.038			
MCV	0.011	0.987–1.033	0.368			
RDW	0.174	0.756–0.932	0.001	−0.137	0.763–0.995	0.043
PLT	0.001	0.997–1.001	0.515			
Pct	0.491	0.601–4.436	0.336			
MPV	0.030	0.918–1.157	0.606			
PDW	0.049	0.733–1.235	0.712			
Neutrophil (%)	0.040	1.026–1.054	<0.001	0.077	1.035–1.128	<0.001
Lymphocyte (%)	0.038	0.948–0.977	<0.001			
NLR	0.023	1.003–1.044	0.026			
PLR	0.005	0.999–1.011	0.095			
Constant					−1.984	0.602

CRP: C-reactive protein; Hgb: Hemoglobin, MCV: Mean cell volume; MPV: Mean platelet volume; NLR: Neutrophil-to-lymphocyte ratio; Pct: Procalcitonin; PDW: Platelet distribution width; PLR: Platelet-to-lymphocyte ratio; PLT: Platelet; RDW: Red cell distribution width; WBC: White blood cell; OR: Odds ratio; CI: Confidence interval.

cases of acute appendicitis demonstrated that WBC, NLR, MPV, and neutrophil counts are substantially elevated in patients with complicated and uncomplicated acute appendicitis compared to patients with normal acute appendicitis.[29] In addition, it is known that the WBC value is an important marker in the classification of clinical severity in acute pancreatitis.[30] Consequently, the study found that WBC was considerably higher in surgically treated patients compared to those receiving medical treatment.

Neutrophilia and lymphocytopenia are reflecting the systemic inflammation and elevated difference between two parameters indicate more severe inflammation.[31] Therefore, NLR has been widely used as a marker in a variety of pathological conditions.[32] Within the study, patients who received surgical treatment had a significantly higher NLR than those who received medical treatment. Previously NLR was suggested as a useful marker in the diagnosis of acute appendicitis and differentiation between complicated and uncomplicated appendicitis, as well as other acute abdomen conditions.[33,34] Moreover, the presence of rebound tenderness and guarding may indicate the peritonitis, a serious inflammatory condition.[35] In this investigation, the prevalence of rebound, but not involuntary guarding, was found to be significantly associated with the need for surgical treatment. This indicates that recurrence tenderness may be associated with a worsened clinical presentation in patients with acute abdomen.

Study Limitaitons

Major limitation of the study was that it was retrospective and single-centered, and included physician-dependent results due to the fact that the data included physical examination findings.

Conclusion

The results indicate that the presence of rebound tenderness, elevated neutrophil levels, and younger age may be predictive of the treatment modality for patients with acute abdomen. Markers for the diagnosis and selection of treatment in cases of the acute abdomen will be better understood as a result of research involving larger populations with a greater variety of acute abdominal conditions.

Ethics Committee Approval

The study was conducted in accordance with the last Declaration of Helsinki (2013), and the protocol was approved by the University of Health Sciences Gaziosmanpasa Training and Research Hospital Clinical Research Ethics Committee (Date: 10.11.2021, Decision No: 358).

Informed Consent

Retrospective study.

Peer-review

Externally peer-reviewed.

Authorship Contributions

Concept: D.Ö., M.Ç., B.D., E.A., A.C., E.A.; Design: D.Ö.,

M.Ç., B.D., E.A., A.C., E.A.; Supervision: D.Ö., M.Ç., B.D., E.A., A.C., E.A.; Fundings: D.Ö., M.Ç., B.D., E.A., A.C., E.A.; Materials: D.Ö., M.Ç., B.D., E.A., A.C., E.A.; Data: D.Ö., M.Ç., B.D., E.A., A.C., E.A.; Analysis: D.Ö., M.Ç., B.D., E.A., A.C., E.A.; Literature search: D.Ö., M.Ç., B.D., E.A., A.C., E.A.; Writing: D.Ö., M.Ç., B.D., E.A., A.C., E.A.; Critical revision: D.Ö., M.Ç., B.D., E.A., A.C., E.A.

Conflict of Interest

None declared.

REFERENCES

1. Cartwright SL, Knudson MP. Evaluation of acute abdominal pain in adults. Am Fam Physician 2008;77:971–8.
2. Ak R, Doğanay F, Unal Akoğlu E, Akoğlu H, Uçar BA, Kurt E, et al. Predictive value of scoring systems for the diagnosis of acute appendicitis in emergency department patients: Is there an accurate one? Hong Kong Journal of Emergency Medicine 2020;27:262–9.
3. Faikhongngoen S, Chenthanakij B, Wittayachamnankul B, Phinyo P, Wongtanasarasin W. Developing a simple score for diagnosis of acute cholecystitis at the emergency department. Diagnostics (Basel) 2022;12:2246. [CrossRef]
4. Elhardello OA, MacFie J. Digital rectal examination in patients with acute abdominal pain. Emerg Med J 2018;35:579–80. [CrossRef]
5. Maleki Verki M, Motamed H. Rectus muscle hematoma as a rare differential diagnosis of acute abdomen; a case report. Emerg (Tehran) 2018;6:e28.
6. Kaushal-Deep SM, Anees A, Khan S, Khan MA, Lodhi M. Primary cecal pathologies presenting as acute abdomen and critical appraisal of their current management strategies in emergency settings with review of literature. Int J Crit Illn Inj Sci 2018;8:90–9. [CrossRef]
7. Powers RD, Guertler AT. Abdominal pain in the ED: stability and change over 20 years. Am J Emerg Med 1995;13:301–3. [CrossRef]
8. Hastings RS, Powers RD. Abdominal pain in the ED: a 35 year retrospective. Am J Emerg Med 2011;29:711–6. [CrossRef]
9. Patterson BW, Venkatesh AK, AlKhawam L, Pang PS. Abdominal computed tomography utilization and 30-day revisitation in emergency department patients presenting with abdominal pain. Acad Emerg Med 2015;22:803–10. [CrossRef]
10. Flum DR, Morris A, Koepsell T, Dellinger EP. Has misdiagnosis of appendicitis decreased over time? A population-based analysis. JAMA 2001;286:1748–53. [CrossRef]
11. Medford-Davis L, Park E, Shlamovitz G, Suliburk J, Meyer AN, Singh H. Diagnostic errors related to acute abdominal pain in the emergency department. Emerg Med J 2016;33:253–9.
12. Brown HF, Kelso L. Abdominal pain: an approach to a challenging diagnosis. AACN Adv Crit Care 2014;25:266–78.
13. Kimura Y, Takada T, Kawarada Y, Nimura Y, Hirata K, Sekimoto M, et al. Definitions, pathophysiology, and epidemiology of acute cholangitis and cholecystitis: Tokyo Guidelines. J Hepatobiliary Pancreat Surg 2007;14:15–26. [CrossRef]
14. Eskelinen M, Meklin J, SyrjÄnen K, Eskelinen M. Performance of a diagnostic score in confirming acute cholecystitis among patients with acute abdominal pain. Anticancer Res 2020;40:6947–56. [CrossRef]
15. Tekyol D, Ak R, Hökenek NM, Kılıç M, Tekyol KK, Erdoğan D. A comparative study of the RIPASA and Alvarado scores in geriatric patients diagnosed with acute appendicitis. Rev Assoc Med Bras 2022;68:1308–12. [CrossRef]
16. Gurusamy KS, Davidson BR. Gallstones. BMJ 2014;348:g2669.
17. Shirah BH, Shirah HA, Alhaidari WA. Perforated appendix-delay in presentation rather than delay in the surgical intervention: retrospective database analysis of 2573 Saudi Arabian patients in 10 years. Int J Sci Study 2016;4:32–6.
18. Gandhi J, Tan J. Concurrent presentation of appendicitis and acute cholecystitis: diagnosis of rare occurrence. BMJ Case Rep 2015:bcr2014208916. [CrossRef]
19. Sedik AM, Makhdoomi M, El Dakak A, El Houshy S. Simultaneous acute acalculous cholecystitis and acute appendicitis: a case report and literature review. Saudi Surgical Journal 2018;6:22–4.
20. Buhamed F, Edward M, Shuaib A. Synchronous acute appendicitis and acute cholecystitis, is it a myth or reality? A literature review. Open Access Emerg Med 2019;11:201–3. [CrossRef]
21. Demuro JP. Simultaneous acute cholecystitis and acute appendicitis treated by a single laparoscopic operation. Case Rep Surg 2012;2012:575930. [CrossRef]
22. Andersson RE. Meta-analysis of the clinical and laboratory diagnosis of appendicitis. Br J Surg 2004;91:28–37. [CrossRef]
23. GBD Diarrhoeal Diseases Collaborators. Estimates of global, regional, and national morbidity, mortality, and aetiologies of diarrhoeal diseases: a systematic analysis for the Global Burden of Disease Study 2015. Lancet Infect Dis 2017;17:909–48. [CrossRef]
24. Melkie A., Alemayehu T, Tarekegn E. Pattern of acute abdomen in Dil Chora Referral Hospital, Eastern Ethiopia. International Journal of Collaborative Research on Internal Medicine And Public Health 2016;8:607–15.
25. Kumar MS, Bharath B, Balasubramanya KS, Thinagaran K. The non traumatic acute abdomen and its clinical spectrum. Int Surg J 2019;6:1710–5. [CrossRef]
26. Ravindra C, Shivakumar C, Clinical profile of acute abdomen cases at a tertiary care hospital. Int Surg J 2016;3:105–107.
27. Malviya A, Hussain A, Bulchandani HP, Bhardwaj G, Kataria S. A comprehensive study on acute non-traumatic abdominal emergencies. Int Surg J 2017;4:2297–302. [CrossRef]
28. Gebre S. Causes and outcome of surgically treated non-traumatic surgical acute abdomen in Suhul general hospital, Shire, northwest Tigray, Ethiopia, a retrospective study. ASRJETS 2016;16:74–89.
29. Peksöz R, Bayar B. The role of complete blood count parameters in diagnosing acute appendicitis and measuring the severity of inflammation. Ulus Travma Acil Cerrahi Derg 2021;27:654–61. [CrossRef]
30. Erdogan MO, Hokenek NM. How to score acute pancreatitis in the emergency setting: five systems against ED-SAS. Signa Vitae 2021;17:122–9.
31. Yan X, Li F, Wang X, Yan J, Zhu F, Tang S, et al. Neutrophil to lymphocyte ratio as prognostic and predictive factor in patients with coronavirus disease 2019: A retrospective cross-sectional study. J Med Virol 2020;92:2573–81. [CrossRef]
32. Grivennikov SI, Greten FR, Karin M. Immunity, inflammation, and cancer. Cell 2010;140:883–99.
33. Kahramanca S, Ozgehan G, Seker D, Gökce EI, Seker G, Tunç G, et al. Neutrophil-to-lymphocyte ratio as a predictor of acute appendicitis. Ulus Travma Acil Cerrahi Derg 2014;20:19–22.
34. Akgün FS, O. Sinanoğlu O. The utility of the neutrophil-to-lymphocyte ratio in predicting urolithiasis in acute abdominal pain accompanied by flank pain. Eur Res J 2019;5:369–74. [CrossRef]
35. Patterson JW, Kashyap S, Dominique E. Acute abdomen. 2022 Jul 11. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2022 Jan–.

Karın Ağrısının Şiddetini Belirlemede Hemogram Parametrelerinin Rolü

Amaç: Akut karın, dikkatli değerlendirme gerektiren ciddi bir durumdur. Akut karın etiyolojisi oldukça karmaşıktır ve alternatif tanı yöntemleri yaşamı tehdit eden durumlara işaret edebildiği için çok değerlidir. Bu çalışmanın amacı, acil serviste cerrahi ve medikal tedavi seçenekleri ile ilişkili olarak fizik muayene ve laboratuvar göstergelerinin rolünü incelemektir.

Gereç ve Yöntem: Bu tek merkezli retrospektif çalışma, 01 Ocak 2019-01 Ocak 2020 tarihleri arasında hastanemiz acil servisine başvuran 18-90 yaş arası 735 hasta ile yapıldı. Hastaların demografik özellikleri (yaş ve cinsiyet), hastaneye yatış verileri, rebound varlığı ve istemsiz defans, ayırıcı tanı, tedavi yaklaşımı (medikal veya cerrahi tedavi) ve laboratuvar parametreleri analiz edildi.

Bulgular: Tüm hastaların yaş ortalaması 45.5±18.6 yıl idi ve erkek hastalar fazlaydı (%51.1). En sık tanılar sırasıyla akut apandisit, akut gastroenterit ve akut kolesistit idi. Cerrahi tedavi uygulanan hastalar medikal tedavi uygulananlara göre anlamlı olarak daha gençti ($p<0.001$). Rebound ve istemsiz defans medikal tedavi alan hastalarda daha belirgindi. Cerrahi tedavi uygulanan hastalarda inflamatuvar laboratuvar parametreleri daha yüksekti. Rebound, düşük yaş, yüksek lökosit ve nötrofil düzeylerinin yanı sıra düşük RDW varlığı, cerrahi tedavi lehine anlamlı ilişkiler gösterdi.

Sonuç: Bulgularımız, akut karınlı hastalarda rebound varlığı, yüksek nötrofil ve düşük yaşın tedavi modalitesi için belirleyici olabileceğini düşündürmektedir.

Anahtar Sözcükler: Akut karın; cerrahi tedavi; hemogram; istemsiz defans; medikal tedavi; rebound.