J Surg Med 2017;1(2):24-27.
DOI: 10.28982/josam.342160

Research article
Araştırma makalesi

Journal of Surgery and Medicine

Retrospective evaluation of patients presenting with acute abdominal pain in the green area of emergency clinic: A cohort study.

Acil servis yeşil alana akut karın ağrısı ile başvuran hastaların retrospektif değerlendirilmesi: Kohort çalışma

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Abstract

Aim: In emergency services applications, patients are stable as a general condition and have simple health problems that may be provided outpatient treatment, are defined as green area patients. Abdominal pain is a common cause of referral to the emergency clinic. In our study, patients admitted to our hospital with acute abdominal pain in the emergency room green areas were evaluated in all respects.

Methods: A retrospective observational study was designed to evaluate patients presenting with acute abdominal pain in green areas. The sample group consisted of 342 patients. Diagnosed / pre-diagnosed patients were identified as specific diagnosis. Diagnosis unclear patients were identified as non-specific diagnosis. Results are evaluated in two categories: 1. Inpatient treatment (surgical or medical treatment), 2. Outpatient (medical treatment).

Results: The values of hematologic parameters such as BASO%, HCT, PDW, RBC and RDW were statistically significant different between the groups of specific and nonspecific diagnosis. (p in order 0.049, 0.003, 0.015, <0.001 and 0.005). Also a statistically significant difference was found in LY%, MO#, NEU#, NEU%, WBC values between discharged from inpatient and outpatient clinic control groups (p <0.0001, 0.0002, <0.0001, <0.0001 and <0.0001, respectively).

Conclusion: Although non-specific acute abdominal pain is the most common cause of referral to the emergency services green area, careful history, physical examinations and inspections for detection of acute abdominal pain in our patients are guiding us.

Keywords: Emergency services, Green area, Acute abdominal pain

Öz

Amaç: Acil servis başvuruları içinde genel durumu itibariyle stabil olan ve ayaktan tedavisi sağlanabilecek basit sağlık sorunları bulunan hastalar, yeşil alan hastaları şeklinde tanımlanmıştır. Karın ağrısı acil kliniklere sık başvuru nedenlerindendir. Çalışmamızda hastanemiz acil servis yeşil alana akut karın ağrısı ile başvuran hastalar tanısal açıdan çok yönlü değerlendirildi.

Materyal ve Metod: Yeşil alana akut karın ağrısı ile başvuran hastaları değerlendirmek üzere retrospektif gözlemsel çalışma planlandı. Örneklem grubu 342 hastadan oluştu. Tanı / ön tanı konulan hastalar spesifik tanı olarak belirlendi. Tanısı belirli olmayan hastalar nonspesifik tanı olarak değerlendirildi. Hastaların sonuçlanması iki kategoride değerlendirildi; 1. Yatarak (ameliyat veya medikal tedavi), 2. Ayaktan (Medikal tedavi).

Bulgular: Karın ağrısı nedeniyle spesifik ve nonspesifik tanı alan grupların hematolojik parametrelerden BASO%, HCT, PDW, RBC ve RDW değerleri arasında istatistiksel anlamlı farklılık saptandı (p sırasıyla 0,049, 0,003, 0,015, <0,001 ve 0,005). Ayrıca karın ağrısı nedeniyle tanısı konulan ve yatarak veya ayaktan poliklinik kontrolü ile taburcu edilen grupların LY%, MO, NEU, NEU%, WBC değerleri arasında da istatistiksel anlamlı farklılık saptandı (p sırasıyla <0,0001, 0,0002, <0,0001, <0,0001 ve <0,0001).

Sonuç: Acil servis yeşil alana akut karın ağrısı ile en sık başvuru nedeni nonspesifik karın ağrısı olmakla birlikte dikkatli öykü, fizik muayene ve tetkikler, spesifik akut karın ağrılı hastaları saptamamızda bize yol gösterici olmaktadır.

Anahtar kelimeler: Acil servis, Yeşil alan, Akut karın ağrısı

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Ethics Committee Approval: Ethics committee approval was received from local ethic committee.
Etik Kurul Onayı: Çalışma için lokal etik kuruldan etik kurul onayı alınmıştır.

Informed Consent: Informed consent was not received because the study design was retrospective.
Hasta Onamı: Çalışmanın retrospektif olması nedeniyle hasta onamı alınmamıştır.

Conflict of Interest: No conflict of interest was declared by the authors.
Çıkar Çatışması: Yazarlar çıkar çatışması bildirmemişlerdir.

Financial Disclosure: The authors declared that this study has received no financial support.
Finansal Destek: Yazarlar bu çalışma için finansal destek almadıklarını beyan etmişlerdir.

Received / Geliş Tarihi: 02.08.2017
Accepted / Kabul Tarihi: 18.08.2017
Published / Yayın Tarihi: 25.08.2017

How to cite / Atıf için : Kayışoğulları U, Başak F, Uçak S. Retrospective evaluation of patients presenting with acute abdominal pain in the green area of emergency clinic: A cohort study. J Surg Med. 2017;1(1):24-27.

Introduction

Hospital emergency services in the world and Turkey provide uninterrupted 24 hours and fast health service, and this leads to high patient densities in developing countries due to patients who are out of scope of emergency. The number of patients admitted to emergency services due to acute abdominal pain is higher than average [1-4]. The definition of pain before the definition of acute abdominal pain; According to the recognition conducted by the International Association for the Study of pain; it is defined as "an anti-sensory and emotional experience" and "pain prevention mechanism" that accompanies or can be identified by damage to existing or possible tissue damage. According to this definition, pain is always subjective because it is a sensation and not a pleasing structure. Therefore, it is necessary to consider both physical and non-physical components when evaluating the pain experience. Pain is actually a concept, and it differs greatly from one person to another, because many factors (gender, religion, language, race, socio-cultural environment) determine the pain threshold, hence the reaction to painful stimuli. In this regard, the pain should be treated as real, even if no indication of an objective is detected immediately psychologically. "Acute abdominal pain" is defined as abdominal pain that starts in the last week [1, 2].

For any reason, approximately half of the patients admitted to the emergency service also complain about abdominal pain. Approximately 5-10% of all patients admitted to the emergency room have abdominal pain. Approximately 20 to 25% of patients suffering from abdominal pain are patients requiring emergency hospitalization in the hospital, while the 35-40% of the examinations were not found, no pathology, no known abdominal pain forms and often passed spontaneously nonspecific abdomen creates painful patients [2, 3].

Green area application in emergency program revealed some other challenges [4]. In this study, we aimed to evaluate patients with acute abdominal to reveal laboratory difference to overcome challenging situations in emergency.

Material and methods

Retrospective observational study was planned to assess patients presenting with acute abdominal pain in emergency service of Umraniye Education and Research Hospital. Sample size was chosen as 262 persons to predict the determination of the difference between 10-15% and 90% of the 12,264 abdominal painful patients who admitted to the green area in 2015. In statistical assessments, 80 people were added to reduce the margin of error and the final sample size was determined as 342. Patients who have lack of information or examinations were excluded from the study.

Patients were compared according to the hematologic parameters (BASO: Basophil, EOS: Eosinophil, HCT: Hematocrit, HGB: Hemoglobin, LY: Lymphocytes, MCH: Average hemoglobin quantity, MCHC: Average erythrocyte hemoglobin concentration, MCV: Average erythrocyte volume, MO: monocytes, MPV: Average platelet volume, NEU: Neutrophil, PTC: Platelet hematocrit, PDW: Platelet dispersion width, PLT: Platelet count, RBC: Red blood cell, RDW:erythrocyte Dispersion width, WBC: leukocytes). Advanced imaging techniques, gender, age, accompanying nausea, vomiting and anorexia, and the final diagnosis were recorded. As a result of the diagnosis and the patient's bed and outpatient clinic control and hospital records were evaluated.

Final diagnosed or pre-diagnosed patients were identified as “specific diagnose”. Patients who were not diagnosed were evaluated as “nonspecific diagnose”. Specific diagnoses were; appendicitis, gastroenteritis, hepato-pancreatico-biliary diseases (pancreatitis, acute cholecystitis, biliary colic, acute cholangitis), gynecological diseases, renal system diseases (renal colic, ureterolithiasis, epididymitis, cystitis), dyspepsia. The outcome of the patients were evaluated in two categories; 1. Inpatient (patients who received surgery and medical treatment inpatient), 2. Outpatient (patients who discharged with medical treatment or no treatment required).

Descriptive statistics were used to define continuous variables (mean, standard deviation, minimum, median, maximum). The difference between the two independent groups that conform to the normal distribution is examined by the Student T-test. The difference between the two independent groups that do not conform to the Normal distribution is examined by Mann Whitney U test. The relationship between categorical variables was tested using the Ki-squared or Fisher exact test. Statistical significance level is determined as 0.05. The analyses were conducted using the MEDICALC statistical software version 12.7.7 (MedCalc Software bvba, Ostend, Belgium; http://www.medcalc.org; 2013) program.

Results

Three-hundred-and-forty-two patients with acute abdominal pain are evaluated. The mean age of the patients was 34.4 ± 15.6, and the male/female ratio was 106/236 years. The patients were diagnosed with a specific diagnosis of 187 (54.7%) and 155 (45.3%) were evaluated as nonspecific diagnoses. 187 cases with specific diagnoses; 95 cases of renal system diseases, 24 cases of acute gastroenteritis, 23 cases gynecological disease, 20 cases of dyspeptic disorders, 10 cases of acute appendicitis, 8 cases of hepatopancreaticobiliary disease and 7 cases had other diagnoses.

BASO#, BASO%, EOS#, EOS%, HCT, HGB, LY#, LY%, MCH, MCHC, MCV, MO#, MO%, MPV, NEU#, NEU%, PCT, PDW, PLT, RBC, RDW and WBC distributions are graphically illustrated (Figure 1).

The gender distribution was as follows; the specific (n = 187; 60 (38.7%) males, 95 (61.3%) females) and nonspecific (n = 155; 46 (24.6%) males, 141 (% 75.4) females) group. There was a statistically significant difference between groups in terms of gender distribution, and this difference was seen due to the female patient surplus in the specific diagnosis group ($p<0.05$).. There was no statistical difference between the groups and the age of patients ($p>0.05$).

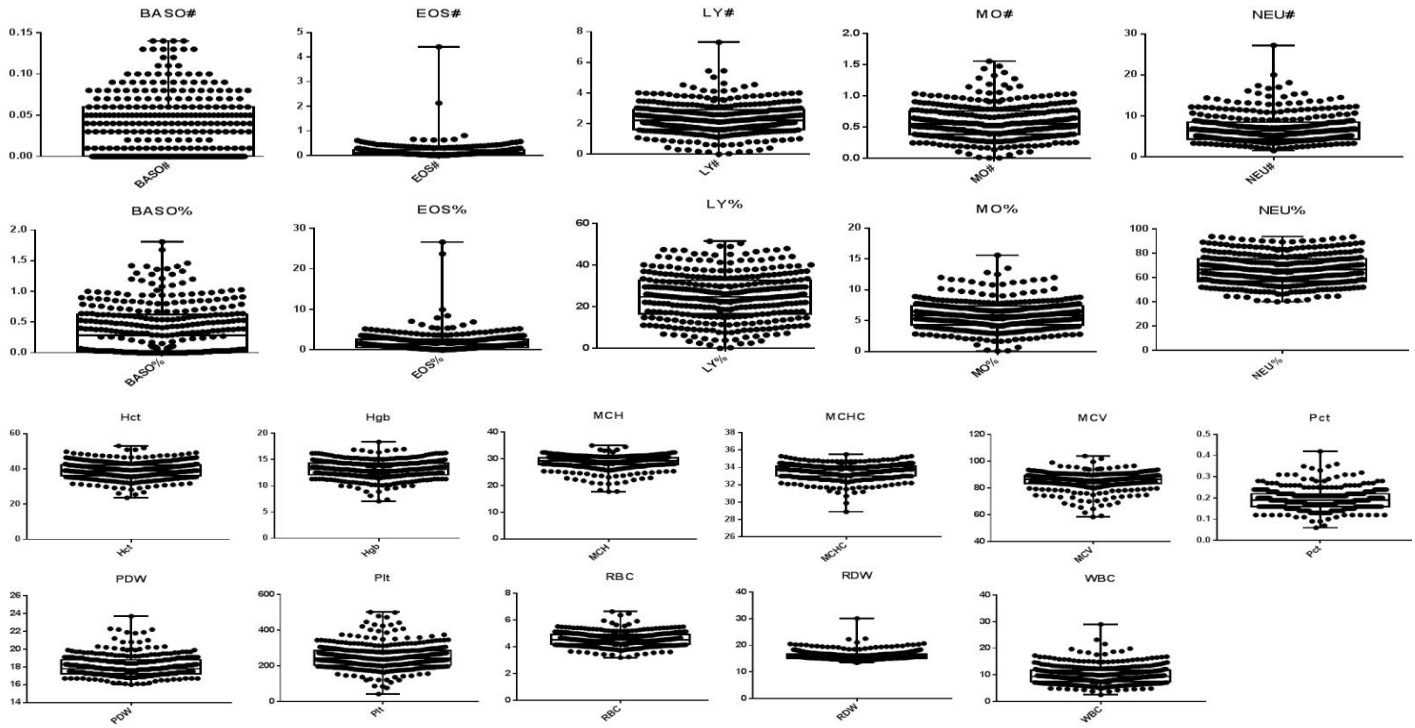

Figure 1: Distributions of the parameters

The BASO%, HCT, PDW, RBC, and RDW values differ significantly between groups (p=0.049, 0.003, 0.015, <0.001 and 0.005, respectively)(Table 1). There were no differences between the groups and remaining parameters (BASO, EOS, EOS%, HGB, LY, LY%, MCH, MCHC, MCV, MO#, MO%, MPV, NEU#, NEU%, PCT, PLT, WBC (all p>0.05).

Table 1: Significant statistics of parameters

	BASO%	HCT	PDW	RBC	RDW
Non-specific group					
N	155	155	155	155	155
Mean	0.4232	40.0697	18.2291	4.6803	16.2890
Med.	0.3600	39.6000	17.9000	4.6300	15.9000
St.Dev.	0.42580	4.89953	1.16953	0.55753	1.60197
Min.	0.00	26.10	16.50	3.43	13.50
Max.	1.81	51.90	22.20	6.50	21.10
Specific group					
N	187	187	187	187	187
Mean	0.3186	38.5102	17.9481	4.4898	15.9118
Med.	0.1200	38.4000	17.7000	4.4300	15.4000
St.Dev.	0.36054	4.60980	1.19632	0.49144	1.82060
Min.	0.00	23.60	16.00	3.21	13.50
Max.	1.68	53.10	23.70	6.65	30.10
p	0.049[1]	0.003[2]	0.015[1]	<0.001[1]	0.005[1]

[1] Mann-Whitney U test, [2] Student t test.

Discussion

In our study, We found that there might be foresight of the sub-parameters of hematologic tests (BASO%, HCT, PDW, RBC, RDW) to discriminate specific and nonspecific diagnoses in the emergency laboratory of patients presenting with acute abdominal pain to the green area in the emergency, except for anamnesis and physical examination. In addition, some parameters (LY%, MO, NEU#, NEU%, WBC) have been determined to be different in patients who need to be in bed or outpatient treatment.

Abdominal pain creates 5 to 10% of the causes of application to emergency outpatient clinics [5]. The disease distribution caused by abdominal pain, age, gender, factors such as underlying diseases, the symptoms and findings that are important in diagnosis are very guiding to reveal the disease that causes abdominal pain.

In spite of all the examinations of 30-40% of patients with abdominal pain in the emergency outpatient clinics, nonspecific abdominal painful patients are unable to detect any pathology and spontaneously decline complaints during observation. Nonspecific abdominal pain occurs more frequently in young adults [6-8]. In our study, the proportion of nonspecific abdominal painful patients was 45%, and 35.2% of men were determined in 40.2% of women. The mean age of the nonspecific group was 32.3, and no difference was detected between the specific group (33.4).

Hepatopancreaticobilier system diseases such as urinary tract infections, acute and chronic cholecystitis, choledocolitiasis and Bilier pancreatitis are seen in higher proportion in women [9-11]. In our study, 80% of renal system diseases, hepato-pancreatico-biliary diseases were observed in 62%.

The most frequent complaints accompanying abdominal pain in patients with abdominal pain are nausea, vomiting and anorexia [6, 12]. In our study, patients who were diagnosed with specific and nonspecific abdominal pain with acute abdominal pain were compared to complaints of nausea, vomiting, and lack

of appetite during the application and a statistically significant difference between the two groups It wasn't detected.

Laboratory tests and imaging methods; It is necessary to verify the diagnosis and differential diagnosis according to the findings of the physical examination. Although laboratory tests and imaging methods are very useful, they cannot replace the anamnesis and physical examination despite technological developments. Imaging audits such as the USG, CT should not replace the clinical evaluation that should be used to investigate a specific disease [7]. In our study, a statistically significant difference was observed in terms of advanced examinations (USG, CT) to achieve diagnosis from specific and nonspecific diagnosis patients.

Leukocytosis is regarded as an important diagnostic criterion accompanying the findings of the story and physical examination in the diagnosis of abdominal pain [13]. Acute appendicitis is the most common emergency surgical disorder. The appendix has leukocytosis at 80-90%, but the leukocytes are not on 18000 unless the perforation value [14]. In a study, the sensitivity of leukocyte value in the diagnosis of appendicitis was 85% and the specificity was 31.9% [15]. In another study, there was no significant difference between non-complicated appendicitis (acute inflammatory appendicitis) and the leukocytes (perforation and/or abscess) of the complicated appendix [16].

In acute appendicitis, the left shift in neutrophilia and hemogram is often associated with lymphopenia and may be presented with monoocytosis, the characteristic manifestation of acute infection [17, 18]. There are several studies that indicate that the number of neutrophilic decreases by increasing the number of lymphocytes in acute appendicitis, and hence the increased neutrophil/lymphocyte ratio (NLO) has high sensitivity to the diagnosis [19, 20]. Markar et al. reported that NLO had a statistically higher diagnostic sensitivity compared to the leukocytes and CRP values of the 1117 patients with appendectomy applied [21]. As the level of inflammation of the appendix becomes heavier, the decrease in the number of lymphocytes in addition to Neutrophil has been reported to increase significantly [22].

In our study, the groups were diagnosed and discharged due to abdominal pain, or were released with outpatient policlinic control and were compared with each other in terms of hematologic parameters. LY%, MO, NEU#, NEU%, WBC values were statistically significant differences between groups. WBC, NEU%, NEU#, MO# and LY% of patients who were undergoing surgery or medical treatment were determined to have high values. In addition, the specific and nonspecific diagnostic groups were compared with each other in terms of hematologic parameters due to abdominal pain. The values of BASO%, HCT, PDW, RBC, and RDW were statistically significant differences between the groups. In the specific diagnostic group, BASO%, HCT, PDW, RBC and RDW were determined to be low.

In conclusion, the most frequent application due to acute abdominal pain is nonspecific abdominal pain. But careful history, physical examination and laboratory examinations may lead us to determine the specific diagnosis in patients with acute abdominal pain.

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