

The Causes of Prolonged ED Stays for Female Patients with Acute Abdominal Pain

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Abstract

Objective: Female emergency department (ED) patients with abdominal pain require consultation and investigation for accurate diagnosis, thus prolonging their stay.

Materials and Methods: This study employed a retrospective design and focused on female patients who sought medical attention at an ED between April and September 2015. The study included patients who were referred to general surgery and/or obstetrics and gynecology clinics for consultation. Other variables included the length of stay (LOS), duration of consultations, recommendations provided in the consultation notes, and laboratory and imaging results.

Results: The data of 1,146 patients were analyzed over a 6-month period. Upon analysis of their hospitalization and discharge status, it was concluded that there was no statistically significant disparity in terms of LOS in the ED ($p=0.611$). Patients who underwent computed tomography scans, had negative beta human chorionic gonadotropin results, or sought general surgeon consultation had longer stays in the ED.

Conclusion: The sequential administration of examinations and consultations prolonged the ED stays of female abdominal pain patients. Thus, a standardized protocol for female abdominal pain patients is widely believed to be necessary.

Keywords: Emergency department, length of stay, abdominal pain, female patient, consultation, overcrowding

Introduction

Abdominal pain constitutes approximately 5 to 8% of the total number of visits to emergency departments (EDs) [1,2]. It is considered to be among the top three prevailing factors contributing to the prolonged stay in the ED [3]. The primary reasons for individuals seeking medical attention at EDs due to abdominal pain were nonspecific abdominal pain (NSAP), gastrointestinal disorders, acute appendicitis, acute diverticulitis, and bowel obstruction. The prevailing diagnosis among patients experiencing abdominal pain is typically a mild ailment, with only a minority (approximately 20-25%)

requiring hospitalization [1]. Diagnosing abdominal pain in female patients presents greater challenges than in male patients, primarily due to the presence of additional pelvic organs [1]. Utilization of history, physical examination, and laboratory testing can contribute to the process of diagnosis [4]. However, it is crucial to employ imaging techniques, such as ultrasonography and computed tomography (CT) scans, to thoroughly investigate abdominal discomfort [5,6]. Conversely, it should be noted that the administration of any diagnostic tests necessitates a certain amount of time, thereby increasing the duration of a patient's stay within the ED. Numerous



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studies have demonstrated that the inclusion of laboratory and radiological examinations, along with consultations, is associated with an increase in the length of stay (LOS) in the ED [7].

Between 20% and 40% of patients who seek medical attention in the ED require consultation. Of these consultations, approximately 5% are directed toward the general surgery (GS) clinic [7,8]. As per the established guidelines, consultations within the ED are recommended to have a duration of 30-45 min [8]. Prolonged consultation response times have been found to be associated with an increase in ED LOS and ED overcrowding [8,9]. There is a lack of existing research on obstetric and gynecological consultations, although female patients make up 57% of all visits [4,10]. There is a scarcity of research examining the impact of consultations on the LOS in the ED, specifically among female patients experiencing abdominal pain.

The main objective of this study was to examine the factors that influence the LOS in the ED for female patients seeking medical attention for abdominal pain.

Materials and Methods

The present study was conducted retrospectively at the ED of a tertiary hospital following approval from the University of Health Sciences Türkiye, İstanbul Bakırköy Dr. Sadi Konuk Training and Research Hospital Clinical Research Ethics Committee (approval number: 2016/03/32, date: 11.04.2016). The hospital in question offers medical services to an estimated range of 200,000 to 220,000 emergency visits annually. Data of female patients who sought medical attention at the ED during the period from April 01, 2015 to September 30, 2015, specifically for addressing complaints related to abdominal pain, were collected.

Study Protocol

The inclusion criteria for female patients were as follows: presenting to the ED with complaints of abdominal pain and subsequently being referred to the GS and/or obstetrics and gynecology (OB-GYN) clinics. The criteria for exclusion were established as follows: individuals who were not consulted at either of the two clinics, individuals under the age of 18, individuals with trauma, and individuals exhibiting signs of upper or lower. Informed consent was not obtained from patients due to the retrospective nature of the study.

The occurrence of gastrointestinal bleeding and the act of leaving the hospital without undergoing formal discharge procedures before departure (Figure 1).

The age and abdominal examination data of the participants were analyzed. The results include white blood cell count, alanine aminotransferase (ALT), aspartate aminotransferase (AST) levels, amylase-lipase values, and beta-human chorionic hormone (B-hcg) values.

The findings of abdominal ultrasound (USG), as well as the results obtained from the administration of intravenous (IV) and oral contrast during computed abdominal tomography, along with the outcomes of consultations and the respective response durations, warrant further consideration for reconsideration. Outcomes and response durations, ED LOS, ultimate diagnosis, hospital admission, and discharge status were examined. The duration of patients' stay in the ED was determined by measuring the time interval between their initial entry into the examination room and their subsequent hospitalization or discharge. Consultation times were determined by measuring the duration between the initiation of a consultation request through the hospital automation system and the provision of a formal response. Based on the consultations, the patients were divided into three distinct groups, denoted as group 1. Individuals who were referred to both the GS and OB-GYN clinics for consultation are hereafter referred to as group 2. The participants were divided into three groups: group 1, consisting of individuals referred solely to the OB-GYN clinic; group 2, consisting of individuals referred to both the OB-GYN clinic and another specialty clinic; and group 3, consisting of individuals referred to a different specialty clinic.

A total of 49,933 female patients, accounting for 49% of the total, sought medical attention. A total of 4,176 patients who presented with abdominal pain were included in the study. A total of 2,498 patients were excluded because of certain criteria. The individuals in question were not provided with a referral to either the GS department or the OB-GYN department. Similarly, 532 individuals who were below the age of 18 years, exhibited a prior record of trauma, presented gastrointestinal bleeding indications, and/or were not formally

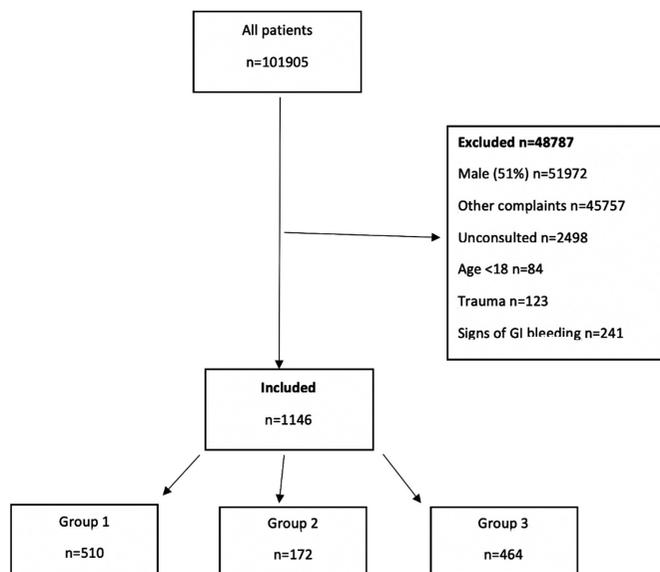


Figure 1. Flow diagram of the study

GI: Gastrointestinal

discharged from the hospital were excluded. The dataset of 1,146 individuals was stored in a database file created using Microsoft® Excel 2007. Figure 1 illustrates the flow.

Statistical Analysis

In statistical analysis, numerical variables are commonly represented by various descriptive measures, including the mean, standard deviation, median, minimum, and maximum. Quantitative variables are represented in the form of numerical values and proportions. The distributions of the data were determined using the Shapiro-Wilks test and the Kolmogorov-Smirnov test. The Mann-Whitney U or Kruskal-Wallis tests were employed to analyze the disparity between the variables. This study examines the use of independent groups in analyzing numerical variables. Similarly, the chi-square test was used to assess the disparity among the groups in nominal variables. The Spearman and Pearson correlation coefficients are both widely used statistical measures for assessing the strength and direction of the relationship between two variables. Correlation analysis was employed to examine the relationship between the variables. Statistical analysis was conducted using SPSS® for Windows (version 22.0). The level of significance was rejected at a significance level of $p < 0.05$.

Results

The study comprised a cohort of 1,146 female patients. The median age of the population was 40. Table 1 presents the distribution of the groups with respect to age, laboratory

results, and imaging findings. The study results and the LOS in the ED were examined. A notable disparity was observed among the three groups concerning the LOS in the ED. In our research, the statistical analysis yielded a p value of less than 0.001. Group 1, indicating a notable difference in the duration of their stay. Statistical analysis revealed significant differences among the various groups ($p < 0.001$). According to the findings of the current study, 459 of 974 patients in groups 1 and 3 underwent CT scans. An assessment of the decisions made regarding CT scan requests indicated that 299 patients (65.1%) were recommended to undergo IV and oral contrast CT scans after their initial GS consultation, whereas 34 patients (7.4%) were not. After their second gastrointestinal surgery consultation, 6 patients (1.3%) experienced complications. Similarly, 6 patients (1.3%) experienced complications after their third gastrointestinal surgery consultation. A total of 339 patients, accounting for 34.8% of the sample, were referred for abdominal CT scan on the basis of their medical condition. Regarding the consultation results on GS. Out of the total sample size of 172 patients in group 2, only 8 individuals (4.6%) underwent CT scans. It is important to note that the subject matter at hand holds significant importance and warrants careful consideration. The scanning procedure required an average time of 2-3 hours for completion after its request in our ED.

In group 1, 422 patients, accounting for 82.7% of the sample, were referred for multiple consultations with a general surgeon. In addition, 110 patients, representing 21.5% of the sample,

Table 1. Distribution of the groups according to age, laboratory, imaging and length of stay

	Group 1 Median (min-max)	Group 2 Median (min-max)	Group 3 Median (min-max)	Total Median (min-max)	p
Age	33 (18-85)	30 (18-55)	57 (18-115)	40 (18-115)	$p < 0.001$
WBC	11.95 (2-39)	9.6 (4-21)	10.8 (2-70)	11 (2-70)	$p < 0.001$
LOS in the ED (min)	634 (117-2220)	252.2 (64-1640)	510 (41-2460)	540 (41-2460)	$p < 0.001$
	n (%)	n (%)	n (%)	n (%)	
B-hcg positive	31 (6.1)	32 (18.6)	8 (1.7)	71 (6.2)	
Standard abdominal X-ray	52 (10.1)	29 (16.8)	95 (20.4)	166 (14.4)	
Pathological findings in standard abdominal X-ray	7 (13.4)	0	51 (53.6)	61 (36.7)	
Abdominal USG	465 (91.1)	58 (33.7)	357 (76.9)	880 (76.7)	
Pathological findings in abdominal USG	276 (59.3)	27 (46.5)	285 (79.8)	588 (66.8)	
Gynecological USG	497 (97.4)	167 (97.1)	0	664 (57.9)	
Pathological findings in gynecological USG	246 (49.4)	100 (59.8)	0	346 (52.1)	
IV/oral contrast CT	303 (59.4)	8 (4.6)	148 (31.8)	459 (40.0)	
Pathological findings in IV/oral contrast CT	176 (58.8)	6 (75)	111 (75)	293 (63.8)	

B-hcg: Beta human chorionic gonadotropin, CT: Computed abdominal tomography, IV: Intravenous, min: Minute, USG: Ultrasonography, WBC: White blood cell, LOS: Length of stay, ED: Emergency department, min-max: Minimum-maximum

were referred for multiple consultations with an obstetrician-gynecologist. In addition, 11 patients (6.4%) from group 2 sought multiple consultations with obstetrician-gynecologists, whereas 272 patients (58.6%) from group 3 sought multiple consultations with general surgeons. The study showed that patients who had multiple consultation requests had a significantly longer LOS in the ED than those who were referred for only one consultation ($p < 0.05$).

The value is less than 0.001. According to the consultation notes from GS, 150 patients, accounting for 29.4% of the total, were referred for an OB-GYN consultation by the same clinic. Similarly, the consultation notes from the OB-GYN appointments. A total of 85 individuals, accounting for 16.6% of the sample, were referred for consultation with a general surgeon.

Considering the relationship between the quantity of consultations and the LOS in the ED, it is important to examine the number of initial, subsequent, and tertiary consultations with GS as well as the frequency of initial consultations.

A notable correlation was observed between consultations with obstetrician-gynecologists and the LOS in the ED.

The correlation coefficient between consultation and LOS in the ED was found to be $r = 0.374$, indicating a significant positive relationship ($p < 0.001$). Table 2 presents its distribution.

This study examines the relationship between consultation times by different groups and their correlation with the LOS in the ED.

Upon examination of the final diagnoses of the patients, 214 (18.7%) were diagnosed with NSAP and 158 (13.8%) with acute appendicitis.

Out of the total cases of acute abdomen, 5 individuals (0.4%) presented with peptic ulcer perforation, 23 individuals (2%) had incarcerated hernia, 52 individuals (4.5%) experienced

ileus, and 258 individuals (22.5%) were diagnosed with liver-biliary and pancreatic disorders.

Of the total sample size, 54 individuals (4.7%) experienced gastrointestinal disorders such as gastritis, inflammatory bowel diseases, and colitis. Additionally, 25 individuals (2.2%) were affected by gallstones, acute cholecystitis, cholangitis, hydropic sac, or pancreatitis.

Among the total number of tumors observed, 170 cases (14.8%) were identified as having gynecological pathologies. These pathologies included ovarian cysts, mittelschmerz, dysmenorrhea, myoma, polycystic ovarian syndrome, endometrioma, and pelvic conditions.

Of the total sample size, 37 cases (3.2%) were classified as gynecological emergencies, specifically involving ovarian cyst rupture, which can lead to inflammatory disease. Of the total cases examined, 78 instances (6.8%) were identified as having urinary conditions, such as ovarian torsion, tubo-ovarian abscess, and ruptured ectopic pregnancy.

Among the observed pathologies, the majority consisted of systemic pathologies such as cystitis and renal colic, accounting for 89% of the cases. The remaining 11 cases (1%) were classified as other pathologies. A retrospective analysis was conducted on the medical records of patients who were admitted and subsequently monitored for acute abdomen. Among the cohort, 31 patients underwent diagnostic procedures. During the laparoscopy procedure conducted by GS, 20 patients were diagnosed with acute appendicitis, 2 patients were diagnosed with pelvic inflammatory disease, and 4 patients were diagnosed with ovarian cyst rupture. A total of five patients did not.

The remaining 30 patients were promptly discharged following medical follow-up. The relationship between the LOS in the ED and the final diagnosis is depicted in Table 3.

Table 2. Distribution of consultation times by groups and correlation with the duration of LOS in the ED

	Group 1			Group 2			Group 3		
	Consultation time	LOS in the ED		Consultation time	LOS in the ED		Consultation time	LOS in the ED	
	Median (min-max)	r*	p	Median (min-max)	r*	p	Median (min-max)	r*	p
First general surgery consultation response time (min)	100 (20-746) (n=510)	0.156	0.000				104 (20-664) (n=464)	0.213	0.000
2 nd general surgery consultation response time (min)	101 (10-728) (n=332)	0.374	0.000				110 (10-720) (n=239)	0.210	0.001
3 rd general surgery consultation response time (min)	116 (10-450) (n=90)	0.295	0.006				96.5 (15-390) (n=33)	0.287	0.081
First obstetrics and gynecology consultation response time (min)	32 (20-450) (n=510)	0.129	0.003	30 (20-300) (n=172)	0.257	0.001			
2 nd obstetrics and gynecology consultation response time (min)	30.5 (20-360) (n=110)	0.106	0.272	45 (20-450) (n=11)	0.891	0.000			

*Spearman correlation coefficient, min: Minute, ED: Emergency department, LOS: Length of stay, min-max: Minimum-maximum

Table 3. Relationship between the last diagnosis among the groups and LOS in the ED

Last diagnosis	LOS in the ED (min)			
	Group 1	Group 2	Group 3	p
NSAP (mean ± SD)	714.8±329.1	267.08±132.29	575.3±308.01	p<0.001
Acute appendicitis (mean ± SD)	596.1±280		501.2±321.8	p=0.189
Acute abdomen (mean ± SD)	755.04±378.8		641.6±342.5	p=0.317
Perforated ulcer	720		369.5±213.8	p=0.157
Incarcerated hernia	185		393±336.6	p=0.291
Ileus (mean ± SD)	732±378.1		592.7±390	p=0.313
Hepatobiliary pathologies (mean ± SD)	380±226.2		586.5±348.8	p=0.366
Diseases of the GIT (mean ± SD)	760±277.5	895±1053	626.5±391	p=0.86
Mass/malignancy (mean ± SD)	917.8±518.4	395.6±318	728.6±357	p=0.162
Gynecological pathologies (mean ± SD)	798.7±362.6	315±193.2		p<0.001
Gynecological emergencies (mean ± SD)	734.2±274.8	433.2±268.3		p=0.03
Urinary system pathologies (mean ± SD)	673.3±313.1	296.4±139.6	781.4±418.8	p<0.001

ED: Emergency department, GIT: Gastrointestinal tract, LOS: Length of stay, min: Minute, NSAP: Non-specific abdominal pain, SD: Standard deviation

Upon analysis of the hospitalization and discharge data, it was determined that out of the total 1,146 patients, 632 individuals (55.1%) were discharged, 47 patients (4.1%) were admitted to the OB-GYN clinic, and 38 patients (3.3%) underwent surgical procedures at the same clinic. Similarly, 449 patients, accounting for 39.2% of the patient population, were admitted to the GS clinic. Among these individuals, 360 patients, constituting 31.4% of the total, underwent surgical procedures performed at the GS clinic. Thirteen patients, accounting for 1.1% of the total, were admitted to alternative healthcare facilities.

The study found that 48.3% of patients (n=217) were admitted to the hospital during their initial consultation at the GS clinic, whereas 41.4% of patients (n=186) were admitted during their subsequent consultation. A total of 15 hospitalizations, accounting for 31.9% of cases, were determined by the OB-GYN clinic.

Of the total sample size, 47 individuals (42.6%) reached a decision regarding their first OB-GYN consultation, whereas the remaining 27 individuals (57.4%) arrived at a decision following their second consultation.

Upon analyzing the hospitalization and discharge status of patients during their follow-up, it was observed that there was no statistically significant distinction between inpatients and discharged patients in relation to the LOS in the ED (p=0.611). Nevertheless, the LOS in the ED for patients.

The incidence of patients who underwent a CT scan was significantly higher than that of the remaining patient population (p<0.001). The B-hcg values of the patients indicated that pregnant individuals had a considerably shorter LOS in the ED than those who were not pregnant (p<0.001). There was no statistically significant evidence. There was no statistically

Table 4. Analysis of LOS in the ED according to hospitalization status, pregnancy status, and radiological images

n	LOS in the ED min (mean ± SD)	p
Not hospitalized (632)	608.9±367.7	p=0.611
Hospitalized (514)	586.2±329.9	
B-hcg positive (72)	474.5±338.1	p<0.001
B-hcg negative (666)	609.3±348.9	
Pathological findings in USG (588)	625.4±361.4	p=0.075
No pathological findings in USG (292)	649.1±332.9	
No pathological finding in abdominal CT (166)	748.07±333.9	p=0.173
Pathological findings in abdominal CT (293)	793.1±356.3	
Had no abdominal CT (687)	479.7±298.9	p<0.001
Had abdominal CT (459)	776.8±348.7	

B-hcg: Beta human chorionic gonadotropin, CT: Computed tomography, ED: Emergency department, LOS: Length of stay, min: Minute, USG: Ultrasonography, SD: Standard deviation

significant relationship between the elevation of AST, ALT, amylase, and lipase levels and the LOS in the ED (p>0.05).

Table 4 presents a comprehensive examination of ED LOS in relation to hospitalization status, pregnancy status, and radiological imaging outcomes of patients.

The LOS of patients in the ED was categorized into two distinct groups: (1) those with an LOS of less than 4 h and (2) those with an LOS exceeding 4 h. A total of 143 patients, constituting 12.5% of the sample, received follow-up care in the ED.

Among the sample of 1003 patients, constituting 87.5% of the total, the duration of follow-up exceeded 4 h within a time

frame of less than 4 h (Table 5). Furthermore, there was no statistically significant disparity observed in the patients' condition regarding their eligibility for surgery and discharge by the general surgeon, as well as their LOS in the ED for a duration shorter or longer than 4 h ($p=0.813$). In a similar vein, there was no statistically significant disparity observed between the patients' condition in terms of being operated on and discharged by OB-GYN and their LOS in the ED for durations shorter or longer than 4 h ($p=0.654$).

Discussion

Our research revealed that the consultation process and the clinics that were consulted had a significant impact. The condition had an impact on the LOS in the ED. Furthermore, the implementation of diagnostic interventions resulted in an extended LOS in the ED.

In the study group, the execution of all consultation procedures was facilitated through the utilization of notification emails generated by the information system implemented by our hospital. Patients who are referred to the GS clinic for consultation must wait in the ED until a consulting physician arrives to assess their condition. Nevertheless, this principle does not hold true in the context of OB-GYN consultations. Utilization of the hospital information system remains consistent. However, consultations with obstetrician-gynecologists require patients to physically visit the doctor's office for appointments.

The purpose of seeking a gynecological consultation is to undergo a transvaginal examination and transvaginal USG. Hence, the duration of the consultation is comparatively

shorter than that of GS consultations. In addition, most OB-GYN consultations are typically concluded during the initial appointment. Because of these aforementioned factors, the LOS in the ED for patients who received consultations exclusively for OB-GYN purposes exhibited a statistically significant reduction.

In their study, Dadeh and Phunyanantakorn [11] investigated the LOS of patients who sought medical attention at the ED. Because of reported instances of chest and abdominal discomfort, it was observed that out of the 304 patients experiencing abdominal pain, 28 individuals (9.2%) were directed to seek consultation at the GS clinic. These patients were subsequently allocated a certain amount of time for their consultation.

A mean duration of 352.3 minutes was observed in the ED, as reported previously [11]. In addition, it was observed that the consultation resulted in a 50% increase in the patients' LOS. Furthermore, requests for USG and CT scans resulted in an extended stay in the ED.

This study demonstrates that the GS clinic decided to administer IV and oral contrast abdominal CT scans to 449 patients. This process necessitated further consultation and analysis of the imaging findings.

Consequently, this leads to the patient requiring multiple consultations. In the current investigation, a statistically significant disparity was observed among individuals who underwent abdominal surgery. In their review study, Gans et al. [4] suggested that it is advisable to conduct OB-GYN consultations for female patients experiencing acute abdominal pain when the etiology of the pain is uncertain.

This phenomenon cannot be explained by alternative explanations. Considering these circumstances, it is imperative to promptly seek an obstetrician-gynecologist consultation in the event of an urgent gynecological pathology.

Nevertheless, in the absence of emergency gynecological pathology, it is advisable to assess the patient in the outpatient clinic [4]. In this study, upon evaluating the initial group, it was observed.

Consultation with an obstetrician-gynecologist was requested for 270 patients, which accounted for 53% of the total.

The etiology of abdominal pain was elucidated in contexts distinct from the study conducted by Gans et al. [4]. Additionally, 31 cases (6%) were attributed to alternative causes.

The existence of pathological conditions necessitated the use of both clinics. In contrast, the final diagnosis of 682 patients who sought consultation with an obstetrician-gynecologist revealed that 77 individuals (11.3%) had a specific condition.

Table 5. Relationship between the last diagnosis and LOS in the ED

	<4 hours n (%)	>4 hours n (%)
NSAP	29 (13.6)	185 (86.4)
Acute appendicitis	13 (8.2)	145 (91.8)
Acute abdomen	5 (8.2)	56 (91.8)
Perforated ulcer	2 (40)	3 (60)
Incarcerated hernia	10 (43.5)	13 (56.5)
Ileus	7 (13.5)	45 (86.5)
Hepatobiliary pathologies	24 (9.3)	234 (90.7)
Diseases of the GIT	2 (3.7)	52 (96.3)
Mass/malignancy	1 (4)	24 (96)
Gynecological pathologies	32 (18.8)	138 (81.2)
Gynecological emergencies	4 (10.8)	33 (89.2)
Urinary system pathologies	13 (9.1)	65 (83.3)
Total	143 (12.5)	1003 (87.5)

ED: Emergency department, GIT: Gastrointestinal tract, LOS: Length of stay, NSAP: Nonspecific abdominal pain

Of the total number of patients, a portion were diagnosed with a gynecological emergency, whereas a smaller percentage required outpatient follow-up for gynecological pathology. The remaining patients did not exhibit any gynecological symptoms or conditions.

The field of study focuses on the nature, causes, and effects of diseases. It can be argued that the decisions made during consultations can impact the number of consultations conducted. Furthermore, the GS and OB-GYN clinics have expressed the need for additional consultations between them. The inclusion of these additional consultation requests can augment the LOS in the ED.

In line with our investigation, a previous study concluded that the involvement of multiple specialists and the use of CT scans were associated with a prolonged LOS in the ED. Consequently, it is imperative for all medical practitioners, including emergency physicians, to exercise caution when making requests for emergency consultations. However, within the context of the given situation, it can be observed that based on the current study, it is inconclusive whether patients who were not experiencing a gynecological emergency derived any benefits from seeking consultation. Nevertheless, this particular circumstance resulted in an extended LOS in the ED. In their research, van der Veen et al. [7] discovered an extended LOS in the ED lasting four hours or more. Consistent with our research, their study revealed that 48% of the individuals seeking medical attention in the ED were female. A total of 5% of individuals were directed to the GS clinic for consultation. Furthermore, it was discovered that 80% of the aforementioned patients had an ED stay of less than 4 h, while 19% of them were directed for consultation. According to a study, 53% of the patients who experienced a LOS exceeding 4 h were consulted [7]. In the conducted study, it was observed that 87.5% of the patients had a duration of stay exceeding 4 h. In addition, all patients included in the study sought consultation from either one or both of the clinics. The duration of our consultation process exceeds that of van der Veen et al.'s [7]. Furthermore, our ED caters to a significantly larger number of patients, approximately ten times more, than the clinic studied by van der Veen et al. [7]. This scenario can induce an extended LOS in the ED.

Moreover, the findings of this study indicated that there was no statistically significant disparity in the LOS between patients who were clinically hospitalized and those who were not, as well as between individuals with or without pathological findings on abdominal CT and USG. In their study, Hwabejire et al. [12] found no significant correlation between hospital LOS and other factors. The severity of the disease, as observed in our study, is comparable.

Study Limitations

This study is subject to certain limitations. The waiting time in the ED waiting room could not be obtained. The study did not include patients with pathologies relevant to both clinical settings and those who required intraoperative consultations. This study did not investigate the LOS in the ED for female patients who were not consulted and presented with abdominal pain complaints. While our study did not specifically examine the hourly analysis of consultation requests, it can serve as a research for future research exploring the potential impact of the number of consultations made at various times of the day and days of the week on ED LOS (ED LOS).

Conclusion

The LOS in the ED for female patients with abdominal pain was extended because of the number of consultation counts and imaging studies. Emergency physicians should try to increase accuracy in their practice. Hence, the establishment of a standardized protocol is necessary for consultations with female patients experiencing abdominal pain and in need of medical consultations.

Ethics

Ethics Committee Approval: The present study was conducted retrospectively at the ED of a tertiary hospital following approval from the University of Health Sciences Türkiye, İstanbul Bakırköy Dr. Sadi Konuk Training and Research Hospital Clinical Research Ethics Committee (approval number: 2016/03/32, date: 11.04.2016).

Informed Consent: Informed consent was not obtained from patients due to the retrospective nature of the study.

Authorship Contributions

Concept: E.A.Ş., C.A., H.Y., D.N.Ö., Design: E.A.Ş., N.H., D.N.Ö., Data Collection or Processing: C.A., H.Y., U.Ö., Analysis or Interpretation: E.A.Ş., N.H., U.Ö., Literature Search: N.H., H.Y., U.Ö., D.N.Ö., Writing: E.A.Ş., C.A., D.N.Ö.

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