

Original Article

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The Causes of Prolonged ED Stays For Female Patients With Acute Abdominal Pain

Şahin et al. Female Patients With Abdominal Pain

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Abstract

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

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

Results: The data of 1,146 patients were analyzed over a period of 6 months. Upon analysis of their hospitalization and discharge status, it was concluded that there was no statistically significant disparity in terms of length of stay (LOS) in the emergency department ($p=0.611$). Patients who underwent CT scans, had negative β -hcg results, or sought general surgeon consultation had longer stays in the emergency department.

Conclusion: The sequential administration of examinations and consultations prolonged female abdominal pain patients' ED stays. 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 [1, 2]. It is considered to be among the top three prevailing factors contributing to the prolonged stay of emergency department [3]. The primary reasons for individuals seeking medical attention at emergency departments due to abdominal pain were nonspecific abdominal pain, 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 compared to male patients, primarily due to the presence of additional pelvic organs [1]. The 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 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 emergency department (ED). Numerous 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 emergency department (ED) [7].

Between twenty and forty percent of patients who seek medical attention in the emergency department (ED) require consultation. Of these consultations, approximately five percent are directed toward the general surgery (GS) clinic [8, 9]. As per the established guidelines, consultations within the emergency department are recommended to have a duration of 30 to 45 minutes [8]. Prolonged consultation response times have been found to be associated with an increase in emergency department (ED) length of stay (LOS) and ED overcrowding [8, 10]. There is a lack of existing research on obstetric and gynecological (OB-GYN) consultations, although female patients make up 57% of all visits [11, 12]. There is a scarcity of research examining the impact of consultations on the length of stay (LOS) in the emergency department (ED), specifically among female patients experiencing abdominal pain.

The main objective of this study was to examine the factors that influence the length of stay in the emergency department (ED) for female patients seeking medical attention for abdominal pain.

Materials and Methods

The present study was conducted retrospectively at the Emergency Department (ED) of a tertiary hospital following approval from the local ethics committee (Approval number: 2016/03/32). The hospital in question offers medical services to an estimated range of 200,000 to 220,000 emergency visits on an annual basis. Data pertaining to female patients who sought medical attention at the Emergency Department (ED) during the period from 01 April 2015 to 30 September 2015, specifically for the purpose of addressing complaints related to abdominal pain, were collected.

Study protocol

The inclusion criteria for female patients were as follows: presenting to the emergency department with complaints of abdominal pain and subsequently being referred to the general surgery and/or obstetrics and gynecology 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 retrospective nature of the study. The occurrence of gastrointestinal bleeding, as well as the act of leaving the hospital without undergoing formal discharge procedures prior to departure. (Figure 1).

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

The findings of the abdominal ultrasound (USG), as well as the results obtained from the administration of intravenous (IV) and oral contrast during computed abdominal tomography (CT), along with the outcomes of consultations and the respective response durations, warrant further consideration for reconsultation. The outcomes and response durations, emergency department length of stay, ultimate diagnosis, hospital admission, and discharge status were examined. The duration of patients' stay in the emergency department (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 subsequent 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 General Surgery (GS) and Obstetrics and Gynecology (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 due to certain criterias. The individuals in question were not provided with a referral to either the General Surgery department or the Obstetrics and Gynecology department. Similarly, a total of 532 individuals who were below the age of eighteen, exhibited a prior record of trauma, presented gastrointestinal bleeding indications, and/or were not formally 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 Methods

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 Shapiro–Wilks test and Kolmogorov–Smirnov tests. The Mann–Whitney U or Kruskal–Wallis tests were employed to analyze the disparity between the variables. The study examines the use of independent groups in analyzing numerical variables. Similarly, the chi-square test was utilized to assess the disparity among the groups in nominal variables. The Spearman correlation coefficient and Pearson's correlation coefficient 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. The 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, as well as the length of stay in the emergency department (ED), were examined. A notable disparity was observed among the three groups with regard to the length of stay in the emergency department. 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. The statistical analysis revealed that there were significant differences among the various groups ($p < 0.001$). According to the findings of the current study, a total of 459 out of 974 patients in Groups 1 and 3 underwent computed tomography (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, while 34 patients (7.4%) were not. After their second gastrointestinal surgery consultation, a total of 6 patients (1.3%) experienced complications. Similarly, 6 patients (1.3%) encountered complications after their third gastrointestinal surgery consultation. A total of 339 patients, accounting for 34.8% of the sample, were referred for an abdominal computed tomography (CT) scan on the basis of their medical condition. Regarding the consultation results on the General Surgery (GS). Out of the total sample size of 172 patients in Group 2, only 8 individuals (4.6%) underwent computed tomography (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 subsequent to its request in our emergency department (ED).

In Group 1, a total of 422 patients, accounting for 82.7% of the sample, were referred for multiple consultations with a general surgeon (GS). Additionally, 110 patients, representing 21.5% of the sample, were referred for multiple consultations with an obstetrician-gynecologist (OB-GYN). In addition, 11 patients (6.4%) from Group 2 sought multiple consultations with obstetrician-gynecologists, while 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 length of stay in the emergency department than patients 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 obstetrics and gynecology consultation by the same clinic. Similarly, the consultation notes from the obstetrics and gynecology (OB-GYN) appointments. It was found that a total of 85 individuals, accounting for 16.6% of the sample, were referred for consultation with a general surgeon.

In light of the relationship between the quantity of consultations and the length of stay (LOS) in the emergency department (ED), it is important to examine the number of initial, subsequent, and tertiary consultations with GS as well as the frequency of initial consultations.

There was a notable correlation observed between consultations with obstetrician-gynecologists (OB-GYN) and the length of stay (LOS) in the emergency department (ED).

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

The study examines the relationship between consultation times by different groups and their correlation with the length of stay in the emergency department (ED).

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

Out of the total cases of acute abdomen, 5 individuals (0.4%) presented with peptic ulcer perforation (PUP), 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.

Out 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 gynecological pathologies. These pathologies included ovarian cysts, mittelschmerz, dysmenorrhea, myoma, polycystic ovarian syndrome, endometrioma, and pelvic conditions. Out 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. Out of the total cases examined, 78 instances (6.8%) were identified as 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, a total of 31 patients underwent diagnostic procedures. During the laparoscopy procedure conducted by GS, a total of 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 thirty patients were promptly discharged following their medical follow-up. The relationship between the length of stay in the emergency department (ED LOS) and the final diagnosis is depicted in Table 3.

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 by 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, while 41.4% of patients (n=186) were admitted during their subsequent consultation. A total of fifteen hospitalizations, accounting for 31.9% of cases, were determined by the OB-GYN clinic.

Out of the total sample size, 47 individuals (42.6%) reached a decision regarding their first obstetrics and gynecology consultation, while 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 length of stay in the emergency department ($p = 0.611$). Nevertheless, the length of stay (LOS) in the emergency department (ED) for patients...

The incidence of patients who underwent a CT scan was found to be significantly higher compared to the remaining patient population ($p < 0.001$). The β -hcg values of the patients indicated that pregnant individuals had a considerably shorter length of stay in the emergency department than those who were not pregnant ($p < 0.001$). There was no statistically significant evidence. There was no statistically significant relationship between the elevation of AST, ALT, amylase, and lipase levels and the length of stay in the emergency department ($p > 0.05$).

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

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

Among the sample of 1003 patients, constituting 87.5% of the total, the duration of follow-up exceeded 4 hours within a time frame of less than 4 hours (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 (GS), as well as their length of stay (LOS) in the emergency department (ED) for a duration shorter or longer than 4 hours ($p=0.813$). 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 length of stay (LOS) in the emergency department (ED) for durations shorter or longer than 4 hours ($p = 0.654$).

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 length of stay in the emergency department. Furthermore, the implementation of diagnostic interventions resulted in an extended length of stay in the emergency department.

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

The purpose of seeking a gynecological consultation is to undergo a transvaginal examination and transvaginal ultrasound (USG). Hence, the duration of the consultation is comparatively shorter in comparison to GS consultations. In addition, the majority of OB-GYN consultations typically concluded during the initial appointment. Due to these aforementioned factors, the length of stay in the emergency department (ED) for patients who received consultations exclusively for obstetrics and gynecology (OB-GYN) purposes exhibited a statistically significant reduction.

In their study, Quereshi et al. conducted an investigation into the length of stay (LOS) of patients who sought medical attention at the emergency department (ED). As a result of reported instances of chest and abdominal discomfort, it was observed that out of the total of 304 patients experiencing abdominal pain, 28 individuals (9.2%) were directed to seek consultation at the GS clinic. These patients subsequently allocated a certain amount of time for their consultation.

A mean duration of 352.3 minutes was observed in the emergency department, as reported in reference [13]. Additionally, it was observed that the consultation resulted in a 50% increase in the patients' length of stay (LOS). Furthermore, the requests for USG and CT scans resulted in an extended duration of stay in the emergency department.

The present study demonstrates that the GS clinic made the decision to administer intravenous and oral contrast abdominal CT scans to a total of 449 patients. This process necessitated further consultation and the 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 the individuals who underwent abdominal surgery. In their review study, Gans et al. 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 accounted for by alternative explanations [4]. In light of the 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 the present study, upon evaluating the initial group, it was observed.

It was observed that a consultation with an obstetrician-gynecologist (OB-GYN) 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. Additionally, a total of 31 cases (6%) were attributed to alternative causes.

The existence of pathological conditions necessitated the utilization of both clinics. In contrast, the final diagnosis of 682 patients who sought consultation with an obstetrician-gynecologist revealed that 77 individuals (11.3%) were found to have a specific condition. Of the total number of patients, a portion were diagnosed with a gynecological emergency, while a smaller percentage required outpatient follow-up for a gynecological pathology. The remaining individuals 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 have the potential to impact the number of consultations conducted. Furthermore, the GS (General Surgery) and OB-GYN (Obstetrics and Gynecology) clinics have expressed the need for additional consultations between them. The inclusion of these additional consultation requests has the potential to augment the length of stay (LOS) in the emergency department (ED).

In line with our investigation, Vegting et al. concluded that the involvement of multiple specialists and the utilization of CT scans were associated with a prolonged length of stay in the emergency department (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 length of stay (LOS) in the emergency department (ED). In their research, Van der Veen et al. discovered an extended length of stay in the emergency department (ED) lasting four hours or more [9]. Consistent with our research, their study revealed that 48% of the individuals seeking medical attention in the emergency department were female. A total of 5% of individuals were directed to the GS clinic for the purpose of seeking consultation. Furthermore, it was discovered that 80% of the aforementioned patients had an ED stay of less than four hours, while 19% of them were directed for consultation [9]. According to a study 53% of the patients who experienced a length of stay (LOS) exceeding 4 hours were consulted [9]. In the conducted study, it was observed that 87.5% of the patients had a duration of stay exceeding 4 hours. Additionally, 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 study. Furthermore, our emergency department caters to a significantly larger number of patients, approximately ten times more, compared to the clinic studied by Van der Veen et al. This scenario has the potential to induce an extended length of stay (LOS) in the emergency department (ED). Moreover, the findings of this study indicated that there was no statistically significant disparity in length of stay (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 ultrasound (USG). In their study, Hwabejire et al. found no significant

correlation between hospital length of stay (LOS) and other factors. The severity of the disease, as observed in our study, is comparable [14].

Study Limitations

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

Conclusion

The length of stay in the emergency department (ED) for female patients with abdominal pain was extended due to the number of consultation counts and imaging studies. Emergency physicians should try to increase the accuracy in their practice. Hence, it is widely believed that the establishment of a standardized protocol is necessary for consultations with female patients experiencing abdominal pain and in need of medical consultations.

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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)	
Standart abdominal X-ray	52 (10.1)	29 (16.8)	95 (20.4)	166 (14.4)	
Pathological finding in standart 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 finding 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 finding 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 finding 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					

Table 2. Distribution of consultation times by groups and correlation with 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
2nd general surgery	101(10-728) (n=332)	0.374	0.000				110 (10-720) (n=239)	0.210	0.001

consultation response time (min)									
3rd 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			
2nd Obstetrics and Gynecology consultation response time (min)	30.5 (20-360) (n=110)	0.106	0.272	45 (20-450) (n=11)	0.391	0.000			
*Spearman correlation coefficient, min:minute, ED: Emergency Department ,LOS: Length of stay									

Last Diagnosis	LOS in the ED(min)			p
	GROUP 1	GROUP 2	GROUP 3	
NSAP	714.8±329.1	267.08±132.29	575.3±308.01	p<0.001
NSAP	714.8±329.1		575.3±308.01	p =0.82
Acute appendicitis	596.1±280		501.2±321.8	p =0.189
Acute abdomen	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	732±378.1		592.7±390	p=0.313
Hepatobiliary pathologies	380±226.2		586.5±348.8	p=0.366
Diseases of the GIT	760±277.5	895±1053	626.5±391	p=0.86
Diseases of the GIT	760±277.5		626.5±391	p=0.021
Mass/malignancy	917.8±518.4	395.6±318	728.6±357	p=0.162
Gynecological pathologies	798.7±362.6	315±193.2		p<0.001
Gynecological emergencies	734.2±274.8	433.2±268.3		p=0.03
Urinary system pathologies	673.3±313.1	296.4±139.6	781.4±418.8	p<0.001
Urinary system pathologies	673.3±313.1	296.4±139.6		p<0.001
Urinary system pathologies	673.3±313.1		781.4±418.8	p=0.469
Urinary system pathologies		296.4±139.6	781.4±418.8	p<0.001

ED: Emergency Department, GIT: gastrointestinal tract. LOS: Length of stay, min:minute
NSAP: nonspecific abdominal pain

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

(n)	LOS in the ED min (mean)	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 finding in USG (588)	625.4±361.4	p=0.075
No pathological finding in USG (292)	649.1±332.9	
No pathological finding in Abdominal CT (166)	748.07±333.9	p=0.173
Pathological finding 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

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Table 5. Relationship between the last diagnosis and the 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		

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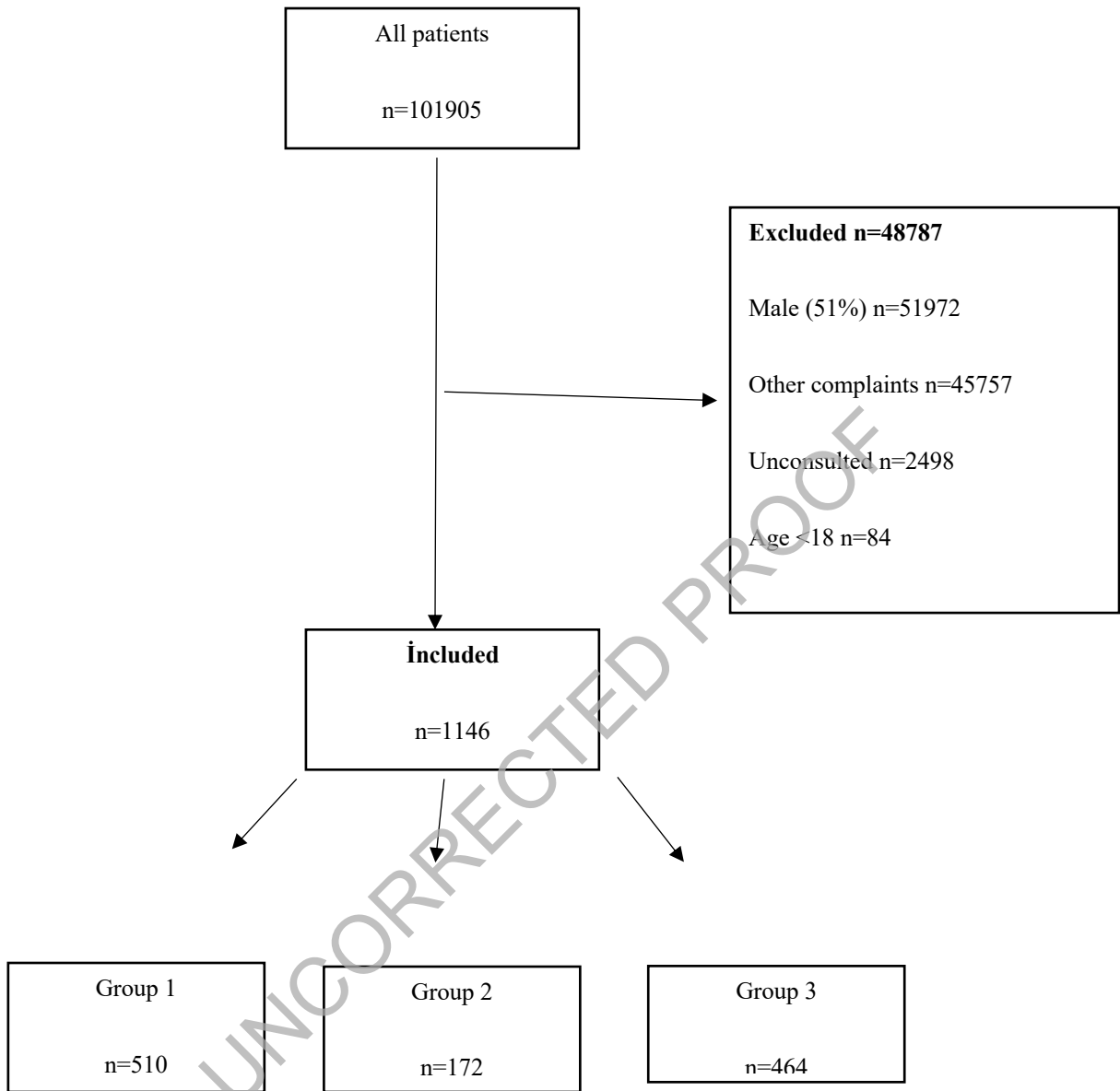


Figure 1. Flow diagram of the study

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