Original Article

Unscheduled Revisits after Diagnosis of Abdominal Pain at Emergency Department, Mukdahan Hospital

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Background: Abdominal pain is a common complaint for patients revisiting the Emergency Department (ED). Evaluating the cause of the revisit can improve the quality of ED patient care.

Objective: We aimed to analyzed unscheduled revisits after diagnosis of abdominal pain at emergency department.

Materials and Methods: In order to determine the characteristics of their abdominal pain and the causes for the revisits, the charts of 90 patients were reviewed. These patients had experienced acute abdominal pain and had returned to the Emergency Department within 48 hours after their initial treatment during the period between January 2019 and December 2019.

Results: During that time period, 44,000 patients visited the ED. Of these, 90 patients (0.2%) with acute abdominal pain or related symptoms had revisited the ED within the following 48 hours. Most of these patients had been 20 to 60 years of age and had had no co-morbid diseases. Almost half of patient revisits had occurred during the evening shift (45.6%). There were 74% of these patients, who had been admitted to hospital for observation or for procedures. No in-hospital mortality was reported for this study. The signs and symptoms of abdominal pain in these patients had not been specific. The factors, which most often contributed to the ED revisits, had been inappropriate consultations and inappropriate discharges or advises.

Conclusion: The majority of the acute abdominal pain patients, who revisited the ED within 48 hours, had been admitted. The most common cause of revisits had been inappropriate consultations and inappropriate discharges. Improving ED patient care can be managed by contributing to effective consultations and to establishing an effective discharge system for the ED.

Keywords: Revisits, Emergency medicine department, Acute abdominal pain

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Unscheduled revisits are one of the trigger tools of the organization for Thai hospital accreditation, as well as a tool of the Institute of Healthcare Improvement (IHI) in the USA[1-7]. Moreover, revisits can be utilized as a tool to measure the quality of patient care in the Emergency Department. Previous studies[8] have shown the revisit rate to range from 1.9% to 5.47%. The rate of the number of revisits can vary based upon multi-factorial elements, such as the level of the hospital, the psychosocial system, or the health system.

Acute abdominal pain is one of the most common problems for Emergency Department (ED) visits[9-11]. According to the results from a study conducted in Thailand by Sri-on[12], it was found that the factors, which contributed the most ED revisits, had been physician-related factors (50%) and abdominal pain (31.4%), with the majority being physician-related chief complaints. The differential diagnosis of acute abdominal pain in the ED is challenging, especially in elderly patients, in patients with immune deficiencies, and in females of reproductive age[13].

The Mukdahan Hospital is a general hospital with 301 beds. At the Emergency Department, medical services are provided 24-hours a day by interns. Moreover, there is one Emergency physician, who is on duty during office hours. This study aimed to determine the characteristics of those patients, who had made unplanned revisits to the ED, which were the result of abdominal pain and were the causes for their ED revisits.

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Materials and Methods

Study design

This was a retrospective, single-center, observational study, which was conducted in a general hospital in Thailand. Ethics approval was provided by the Mukdahan Hospital Ethics Committee for Human Research (MEC 11/63).

Sample size

All patients, who, after their initial discharges, had returned to the ED within 48 hours for the same complaints

or related complaints with the acute abdominal pain, were included. The 48-hour revisit rate was used in accordance with our hospital's indicator for Quality Assurance (QA). Those patients, who had had outpatient physician appointments or who had returned to the hospital with a different medical problem that was unrelated to their initial visit, were excluded.

Study protocol

The study was performed during the period between January 2019 to December 2019. The data, which was collected for the present study, consisted of age, gender, chief complaint, the signs and symptoms of abdominal pain, co-morbid diseases, the ED visit time, the consultation, and the ED discharge status-all of which were obtained from the medical charts. In accordance with the nature of the return visits, the return visits were placed into the following six categories: 1) an incomplete account of the patient's history, 2) an incomplete physical examination of the patient, 3) inappropriate lab investigations, 4) incidences of sub-optimal treatments, 5) inappropriate consultations, and 6) inappropriately discharging patients or giving them inappropriate advices. Then two attending physicians determined the classifications for each of the return visits. If the determinations of the classifications, which had been performed by two physicians, were found to be inconsistent, then the final decision was made by a third expert. The primary outcome of this study aimed at determining the characteristics of those patients with acute abdominal pain, who had revisited the ED within 48 hours. The secondary outcome sought to determine the cause of ED revisits for these patients.

Statistical analysis

The continuous-type variables in the data were summarized as means and standard deviations (SD) or as medians and ranges as deemed appropriate. The categorical variables were summarized as counts and percentages. All statistical analyses were performed by using Microsoft Excel 2010.

Results

During January 2019 to December 2019, a total of 44,000 patients visited the ED. Of this total, 90 patients (0.2%) had revisited the ED within the following 48 hours with acute abdominal pain or related symptoms. The ages of most of these patients (60%) had ranged from 20 to 60 years of age. Moreover, 64.4% of these patients had shown no co-morbid diseases. Almost half of these patients' revisits had occurred during the evening shift (45.6%). It was found that 98.9% of the revisiting patients had not received any specialized consultations during their initial visits. The percentage of those patients, who had to be admitted to the hospital for observation or for other procedures, such as surgeries, gastroscopies, or lumbar punctures, had been 74%. Finally, no in-hospital mortality had been reported (Table 1).

In terms of the characteristics of the abdominal pain, it was found that over half of the patients (57.8%) had exhibited the pain characteristic known as colicky pain. Most of the patients (66.7%) had had an onset of symptoms for less than 1 day. Almost half of the patients had experienced nausea and vomiting as the association symptoms. In addition, it was also found that 42.2% of the patients had indicated no point of tenderness when they were being palpated (Table 2).

According to the causes for revisits, inappropriate consultation and inappropriate discharge or advise were found to be the most common contributing factors for revisiting the ED (Table 3).

Discussion

In this study, we focused on the characteristics of patients with abdominal pain, who had unplanned revisits. It was found that the age of revisiting patients had been between 20 to 60 years of age. This result stands in contrast to other studies, in which it was found that elderly patients had been more likely to be revisiting patients and to have more severe symptoms than the younger patients[14,15]. In terms of gender, it was found that males and females had been equally represented as the revisiting patients. In contrast to other studies, most of these patients had had no co-morbidities[16]. Our findings indicated that the evening shift had been the time when the patients had revisited the ED, which is consistent with results from a study by Sri-on[12]. During the evening shift, the ED and

Table 1. The demographics of the revisiting patients (n = 90)

Variables	n (%)
Gender	
Female	48 (53.3)
Age (years)	
<10	13 (14.4)
10 to 19	9 (10)
20 to 60	54 (60)
>60	14 (15.6)
Co-morbid diseases	
None	58 (64.4)
ED shifts	
Morning (8.01 to 16.00)	16 (17.8)
Evening (16.01 to 24.00)	41 (45.6)
Night (0.00 to 8.00)	33 (36.6)
Consultations	
None	89 (98.9)
ED discharge status	
Admitted to ward	67 (74.4)
Discharged from the ED	23 (25.6)

Table 2. The characteristics of the abdominal pain

Signs and symptoms	n (%)
The patterns of abdominal pain	
Continuous pain	38 (42.2)
Colicky pain	52 (57.8)
The onset of symptoms	
<1 day	60 (66.7)
1 to 5 days	28 (31.1)
>5 days	2 (2.2)
Associated symptoms	
Nausea and vomiting	42 (46.7)
Constipation	5 (5.6)
Fever (BT >37.8°C)	7 (7.8)
Loss of appetite	2 (2.2)
No associated symptoms	38 (42.2)
The locations of the pain	
Epigastrium	20 (22.2)
Generalized	8 (8.9)
Right upper quadrant	2 (2.2)
Right lower quadrant	4 (4.4)
Suprapubic area	7 (7.8)
Periumbilical area	8 (8.8)
Left lower quadrant	3 (3.3)
No points of tenderness	38 (42.2)

Table 3. The factors contributing to the ED revisits

Factors	n (%)
Incomplete patient histories	57 (63.3)
Incomplete physical examinations	30 (33.3)
Inappropriate lab investigations	64 (71.1)
Sub-optimal treatments	49 (54.4)
Inappropriate consultations	89 (98.8)
Inappropriate discharges or advices	86 (95.6)

the hospital may become even more crowded. In our opinion, this overcrowded condition may have caused the doctors to feel increased pressure, which may, in turn, may have caused them to carry out fewer investigations than usual.

The characteristics of the abdominal pain in the revisiting patients were not specific. When the abdominal examinations were performed, almost half of the patients in this study had had no point of tenderness. Thus, the clinical presentation of abdominal pain always represents a challenge for EPs. However, in this study, interns had performed fewer consultations. After having consultations with interns, patients are usually considered to have a higher rate of ED revisits because during the first visit, the diagnosis would have been unclear.

In terms of the causes for the revisits, it was demonstrated in our study that inappropriate consultation (less consultation) and inappropriate discharge or advice had been the physician-related factors, which were identified as the main problems in this study. However, our findings were inconsistent with findings from other studies[12,17]. By improving the consultation system and the ED discharge instructions, the revisit rates will be decreased.

In this study, the revisit rate was quite low and stands in contrast with other studies in which the return visit rate ranged from 1.9 to 3.5%[18,19]. Moreover, these studies did not solely focus on patients with acute abdominal pain, but they had examined all types of patients treated in the ED.

The limitations in this study were as follows[20-24]: Firstly, the number of patients was relatively small because this was a single center, retrospective study and because the proportion of patients with ED revisits was also small. Secondly, it is possible that some patients, who had developed more serious conditions after their initial ED visits, may have chosen to seek medical attention from other institutions.

Conclusion

These findings suggest that the acute abdominal pain had been the chief common complaint for patients revisiting the ED. Diagnosing a definitive disease on the first visit is very challenging, especially for neophyte doctors. Therefore, having an effective consultation system and having appropriate ED discharge instructions are the keys to improving the quality of ED patient care.

What is already known on this topic?

Recent studies found that abdominal pain had been the chief complaint for patients revisiting the ED. Delayed diagnoses can lead to greater morbidities, higher mortality rates, and to increased costs. For these patients, the cause of the revisits should be evaluated. However, no such studies have been conducted in urban hospitals in Thailand.

What this study adds?

In patients with acute abdominal pain, an inappropriate consultation system and an inappropriate ED discharge system was found to have contributed to repeated 48-hour ED visits.

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Potential conflicts of interest

The authors declare no conflict of interest.

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