Background: Pain in the lower abdomen is one of the leading reasons that lead the patient in surgery. Although appendicitis is the most common cause in about two thirds of patients the other causes must be taken into account. Objectives: To determine the probabilities which could determine what is an etiological cause of pain. Materials and methods: comprised 102 patients hospitalized in general hospital Tesanj because the clinical symptoms dominated by acute pain in the lower abdomen. The study was retrospective prospective clinical study. All data were collected in a special database and statistically analyzed. Results: Of all the causes of abdominal pain in the lower abdomen the most common is appendicitis with a total of 62 patients, of which slightly more male patients (36) compared to female patients (26) or (57% male and 43% female patients). If we analyze the time elapsed from pain onset to patient visit of physician we can say that patient with more intense pain will visit physician sooner. Colic and intense pain is a characteristic of colon cancer (15 patients) and Crohn’s disease. Dull pain is characteristic of omentum cyst, diverticulitis, and intestinal obstruction and was seen in one fifth of patients with colorectal cancer and one third of patients with acute appendicitis. Palpatory positive pain in Mc Burney’s point distinguishes appendicitis from other causes in most cases. Discussion: The decision-making in the treatment of abdominal pain is depending of nature of pain, intensity, spreading, and sensitivity to palpation and localization of pain that usually indicates the place where the sick organ transmits the inflammatory process to the parietal peritoneum. Other symptoms that accompany pain and laboratory tests can be of crucial importance. Keywords: Pain, Patient Hospitalized.

1. INTRODUCTION

Pain is one of the most common causes of hospitalization in surgery clinics (1, 2). The most common cause of patient visits to the doctor is the pain. However, different states in the abdomen leading to different types of pain, although in some cases the character of the pain cannot accurately determine the etiology or the cause of its origin. Given that pain is not the only symptom of the disease itself causes the interpretation of pain is related to the overall clinical signs and laboratory findings. Differential diagnosis of abdominal pain in the prehospital phase is very difficult because the surgeons often decide that a patient should be hospitalized for further observation (3). In this way, it defers its decision on the need for surgical intervention. There are certain frequencies for each cause of abdominal pain. Pain in the lower abdomen is usually caused by acute appendicitis.

Each entity responsible for the pain in the lower abdomen has its own distinctive way/formation, propagation and character of pain. Based on the frequency of individual causes of pain and its characteristics it is possible to calculate the appropriate sample probability of possible causes of pain. The best doctors in the domain of abdominal surgery can never accurately determine the exact cause of pain etiology. In some cases, the pain stops spontaneously, although it was not determined why it occurred.

Given that the most common cause of pain in the lower abdomen is acute appendicitis it is logical that the symptoms are common to several diseases probably caused by acute appendicitis. Alvarado score is commonly used for the evaluation of patients who are
suspected of having acute appendicitis (4,5). On the other hand, spasmodic pain is characteristic of ileus and obstruction of lower urinary tract because there are intervals in which the pain stop or have low-intensity.

Specific signs may identify specific diseases that lead to the occurrence of abdominal pain (1). The most famous signs are Kerh sign, Mcburney sign, a sign of iliopsoas, obturator sign, Grey-Turne sign, Chandelier sign, Rovsing sign, Carnett sign, rectal pain, Blumberg sign (1).

2. GOALS

Based on the characteristics of abdominal pain, we assume what could be the most likely cause of the pain. Based on the results that show which kind of pain correspond to which disease taking into account the frequency of individual states, we tried to determine the likelihood of etiological causes of abdominal pain.

3. MATERIAL AND METHODS

The survey included all patients who have pain in the lower abdomen and reported came to the review at the Polyclinic of Doboj-South and General Hospital Tesanj during 24 working hours. The sample consisted of 102 patients hospitalized at the General Hospital Tesanj with the clinical picture dominated by acute pain in the lower abdomen.

The study was clinical, retrospective–prospective and carried out in the period from June 2008 to June 2009. The study included patients who were hospitalized for acute pain in the lower abdomen.

Inclusion criteria in the research was the dominant symptom, pain in lower abdomen, which was hospitalized.

Criteria for exclusion from the study were abdominal pain caused by neurogenic and psychological causes of pain, trauma, chronic recurrent constipation, chronic metabolic disorders and drug abuse. Upon admission of patient data were collected on gender, age and characteristics of pain. Pain intensity was assessed by using a verbal analog scale using the interval 0–10 where 0 is absence of pain and 10 maximum pains that the patient can imagine.

Data on the onset speed were characterized as sudden or gradual. The time from the occurrence of pain to the patient visit to the surgeon is compared with the different causes of pain. Also followed is the dynamics of onset, whether there was a shift of pain and the pain spread to distant regions of the body. Analyzed were also the associated symptoms and signs such as nausea and vomiting, leukocytes.

Made is a database into which are inputted all of the above parameters and the data were statistically analyzed.

4. RESULTS

The total number of patients enrolled in the study is 102. From these patients, 57 are male and 45 female. Of all the causes of abdominal pain in the lower abdomen the most common was appendicitis with a total of 62 patients, of which slightly more male patients (36) compared to female patients (26) or (57% male and 43% female patients). Appendicitis is, therefore, more common in male patients. This disease can be expected in children and younger patients. In case male children under 15 years appendicitis was found in 15 male and 6 female patients. Younger patients 16–30 years have the same ratio (14 male and 14 female patients).

Due to the fact that appendicitis usually occurs in a group from 16–30 years, this group is most often hospitalized due to acute pain, with the proviso that this age group meet and ovarian cysts in women.

One of the most important parameter is the difference between rectal and auxiliary temperature. In our study, we showed that the difference is statistically significant in comparison to other causes of pain in the lower abdomen (p ≤ 0.01).

The increase of leukocytes in relation to reference values from other patients with abdominal pain was statistically significant. Mean count of leukocytes in the serum was 12.29. The difference in the number of leukocytes was statistically significant compared to other patients.

If we analyze the value of pain we see that mode (the most common frequency) is 6 points on a scale of 10 with a total of 18 out of 62 patients with appendicitis. The pain is less pronounced than in case of ruptured abdominal aneurysm.

If we analyze the time when a patient with acute abdominal pain see the doctor we can say that diseases that are accompanied by stronger pain brought the patient to the doctor earlier. These are renal colic, ruptured ovarian cyst, and wedged femoral hernia and aortic aneurysm. Most patients came to doctor within eight hours from pain onset.

Patients with a ruptured ovarian cyst came after 2 days except for one patient who came during the first two hours.

Other causes have brought the patient to the doctor after two days except ileus and acute appendicitis. Colorec-
tal cancer causes the pain that lasts for two days or more in all patients with this disease. Chronic diseases such as diverticulitis of the colon and Crohn’s disease also fall into this group.

Acute appendicitis and ileus brought the patient to doctor in all four time intervals, usually after 2 days (22 patients) and in the interval of 8-16 hours (19 patients). The difference in pain onset between the first group of the entire sample was significant with $\chi^2 = 17.47 \ p \leq 0.01$. None of the patients came to examination in the period between 25 and 48 hours. According to the character of pain patients were divided into three categories.

Spastic and intense pain on the type of colic’s is a characteristic of colon cancer (15 patients) and Crohn’s disease. Dull pain is characteristic of omentum cyst, diverticulitis, and one patient with intestinal obstruction, four patients out of 19 with colon cancer and 21 patients with acute appendicitis from a total of 63 patients.

Sharp pain is characteristic of almost two thirds of patients with acute appendicitis. Abdominal aortic aneurysm, wedged femoral hernia and renal colic pains are sharp and constant. The character of pain in patients with acute appendicitis is significantly different from other patients with $p < 0.05$.

In relation to pain intensity, we can say that the ruptured aneurysm of the aorta with an average pain 9 represents severe pain (7,14) followed by rupture of ovarian cysts. Femoral hernia and renal colic Crohn’s disease are at the third place with the intensity of pain 6. Acute appendicitis as the most frequent cause of pain has a slightly lower average pain intensity (5.63). Diverticulitis that one patient had caused a pain with score 5, colon cancer 4 and ileus 5.67. There was a statistically significant difference in the intensity of pain in appendicitis and colon cancer $p < 0.05$.

Localization of pain is one of the important characteristics of abdominal pain. Abdominal pain is often localized rather than diffuse. Colorectal cancer and appendicitis can give diffuse pain in a minority of cases (cancer of the colon 3 of 16 appendicitis in 14 of 49). In one of the two aneurysms pain was diffuse.

All other causes of pain are shown in Figure 4, the pain is localized at the site of diseased organs.

5. DISCUSSION

Patients with the intense pain reporting earlier to the doctor and all arrived to a surgeon on the first day. Patients whose pain is less intense came after 48 hours. On the first day from pain onset usually came half of the patients while the majority of patients came on the second day or later.

The highest probability of a pain in the lower abdomen is caused by acute appendicitis (3, 4, 5). In our series, two-thirds of patients hospitalized for acute pain had appendicitis. Leukocytosis is an important predictive factor for acute appendicitis but does not rule out other etiology. Many diseases that can mimic the clinical picture of appendicitis occur much less frequently but must be taken into consideration. Ovarian cysts, adnexitis, Meckel diverticulum often present similar clinical picture. Two-thirds of patients with appendicitis came to doctor during the first day. The pain of appendicitis is of medium intensity, in case of the cysts it was slightly more intense, and aneurysms are followed by the strongest feeling of pain.

Based on history data on the pain...
are produced the parameters: location, intensity, spread and characteristics of pain, fever (axillary and rectal), nausea and vomiting, and increased leukocytes, it was found that these predictive factors for acute appendicitis have diagnostic value, because for these parameters is proved statistical significance \( p < 0.05 \). In older patients the appendicitis occurs rarely. However, clinical picture can be attenuated, so it happens that the disease is not immediately recognized (1).

In a sample of patients we found that most patients reported the first day or not later than the second day after pain onset. On the second day there was not a single patient that came for review (Figure 2).

Renal colic is characterized by pain, which is slightly stronger than in appendicitis. Pain in the ileus is the type of colic, appendicitis is characterized by sharp and rarely dull pain until the pain of the type of colic does not occur in appendicitis and such pain usually indicates the presence of ileus or low urinary tract obstruction (3, 4, 5).

Appendicitis is the most common cause of lower abdominal pain, and affects more often men. Pain is the leading symptom with the following characteristics: develops gradually, accompanied by an urge to vomit and vomiting, fever, leukocytosis, and above all sensitivity of front abdominal wall where there is an inflamed appendix. Pain can be diffuse at different stages of the disease (3, 4, 5).

Colon cancers produce lower pain intensity which can be diffuse but is more localized. It has been accompanied by a history of mucous and bloody stools, diarrhea and constipation. Often with secondary anemia. In the case of obstruction of the bowel lumen accompanied by signs of obstructive ileus with a loss of appetite, vomiting and fluid-gas levels on abdominal X-rays. Pain can also have a spastic character in the case of obstructive ileus (3, 4, 5).

In female patients, ruptured cysts usually causes pain, which rapidly developed as the result of shedding the contents of the cyst and surrounding peritoneal irritation. The pain is localized, slightly stronger than the one of acute appendicitis, if it is located on the right there is always the suspicion of appendicitis (1).

Ruptured aneurysm of the aorta provides a powerful pain in patients with hemodynamic instability and pain that spreads to the back.

Diverticulitis gives pain with less intensity, occurring usually in the projection of the colon, often on the left. It may be accompanied by leukocytosis and fever (5).

Abdominal pain is one of the most common causes of visits to primary care (4). It is the most common cause of gastroenterologist and surgeon consultations. In some patients the pain settles after the infusion therapy or spontaneously. While the specific diagnosis can be obtained in many patients we cannot identify the etiology of pain in about 35-51% of patients with abdominal pain (1).

REFERENCES