

CHOLECYSTITIS AS A CAUSE OF ABDOMINAL PAIN IN PATIENTS WITH ACUTE VIRAL HEPATITIS A AND B

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Acute cholecystitis is an inflammation of the gallbladder wall, usually caused by gallstones in the cystic duct, which causes attacks of severe pain. At least 95% of the population with acute inflammation of the gallbladder have gallstones. Acute viral hepatitis is the liver inflammation accompanied by nausea, faintness, vomiting, pain below the right rib arch, jaundice. The presence of acute cholecystitis intensifies the existing symptoms.

The aim of the paper was to show the incidence of the gallbladder inflammation in patients with acute hepatitis A or B.

This retrospective-prospective study involved 110 patients treated for viral hepatitis A or B and had severe abdominal pain during hospitalization.

The selected sample involved more male examinees - 63 (62%) compared to female ones - 47 (38%). The most frequent age of examinees was 30-50 years, 82 (83%), and cholecystitis during hepatitis was also most common in the age group 30-50 years, 28 (73%) patients. Cholecystitis was more common in patients with acute hepatitis B - 21 (55%) examinees than in patients with acute hepatitis A - 17 (45%) examinees. Ultrasound examination, performed in 24 (63%) examinees showed gallstones in inflamed gallbladder, while 14 (37%) examinees had the inflammation of the gallbladder without gallstones.

The most common cause of severe abdominal pain in patients with acute liver infection caused by HAV and HBV infection was the gallbladder, 38 (34.5%) patients. Cholecystitis was more common in patients with acute hepatitis B, 21 (55%) examinees, than in those with an acute hepatitis A, 17 (45%) examinees. *Acta Medica Medianae* 2012; 51(1):20-23.

Key words: cholecystitis, abdominal pain, viral hepatitis A, viral hepatitis B

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Introduction

Acute cholecystitis is an inflammation of the gallbladder wall, usually caused by gallstones in the cystic duct, which causes attacks of severe pain. At least 95% of the population with acute inflammation of the gallbladder have gallstones. Acute inflammation of the gallbladder without gallstones occurs after injury, surgery, burns, sepsis, and especially in patients who had being fed intravenously for a long period. Patients usually have no previous signs of gallbladder disease, i.e. before they get a sudden, severe pain in the upper abdomen. Pain, usually in the right upper abdomen, is the first sign of inflammation of the gallbladder (1). The pain may be intensified during deep breathing and often spreads into the lower right armpit and right shoulder blade. The pain can become unbearable,

and is commonly followed by nausea and vomiting. The person usually feels sharp pain when the doctor presses the upper right abdomen. Typically, the gallbladder attacks stop within 2-3 days and completely disappear in seven days. If this is not the case, a person can have serious complications. Fever, chills, a substantial increase in the number of white blood cells (leukocytosis) and cessation of normal activation of intestine (ileus) suggest the formation of abscess, gangrene. In such situations, emergency surgery is required (2). Other complications, such as jaundice, may also appear. Disease is diagnosed based on the patient's symptoms and results of diagnostic tests. Ultrasound can help in confirming the inflammation of the gallbladder with or without gall stones. Acute viral hepatitis is the liver inflammation accompanied by nausea, tiredness, vomiting, pain under the right rib arch, jaundice. The presence of acute cholecystitis intensifies the existing symptoms.

Aim

The aim of the paper was to show the incidence of inflammation of the gallbladder in patients who had acute hepatitis A or B.

Methodology

This retrospective-prospective study involved 110 patients treated for viral hepatitis A or B, and had severe abdominal pain during hospitalization.

Patients were treated at the Surgical Department of the General Hospital Bar and the Clinic for Infectious Diseases, Clinical Centre of Montenegro, in the period from 2004 to 2010.

Biochemical, virological and echosonographic tests were done in all patients. After collection, data were statistically analyzed.

Results

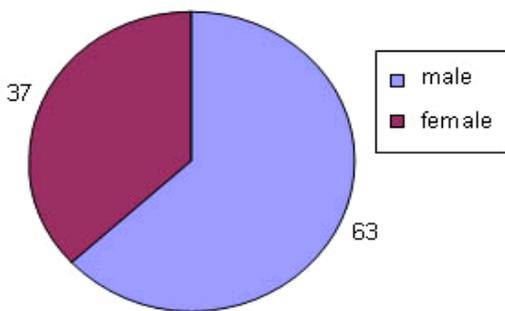
Based on collected data, male examinees prevailed - 63 (62%), compared to females - 47 (38%), with no statistically significant difference ($p > 0.05$).

Analysis of the data showed that most examinees - 82 (83%) with acute hepatitis A and B belonged to age group 30 - 50 years.

The most common cause of severe abdominal pain in patients with acute hepatitis A and B was an inflammation of the gallbladder, in 38 (34.5%) examinees, and the least common cause was cystis ovarii in 3 (2.7%) examinees.

Ultrasound examination in 24 (63%) patients with acute hepatitis A and B revealed gallstones in inflamed gallbladder, while in 14 (37%) examinees there was an inflammation of the gallbladder without gallstones.

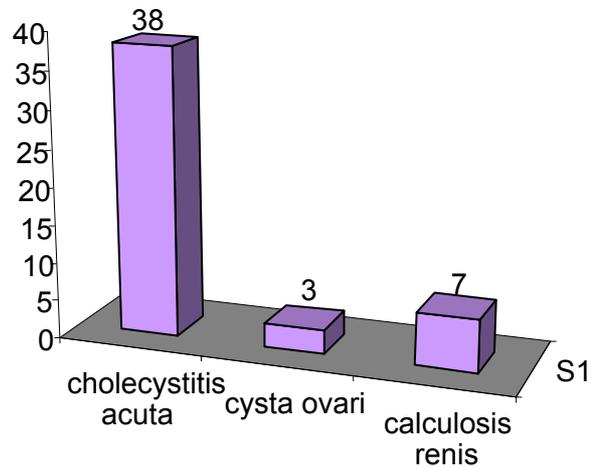
Data analysis showed that most patients - 28 (73%) with cholecystitis were aged 30-50 years. Cholecystitis was more common in patients with acute hepatitis B - 21 (55%) examinees, than in patients with acute hepatitis A - 17 (45%) examinees.



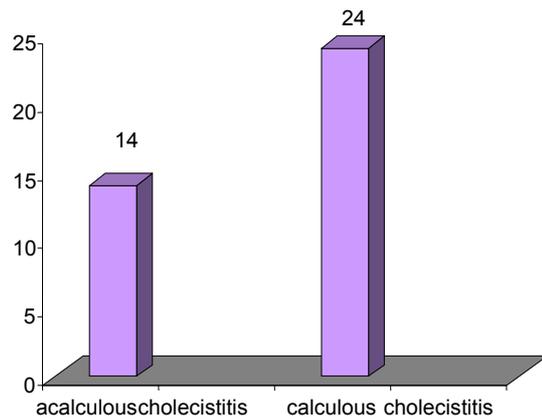
Graph 1: Gender distribution of examinees suffering from acute hepatitis A or B.

Table 1. Age distribution of examinees suffering from acute viral hepatitis A or B

Age	Frekvency
20-29	18
30-39	45
40-49	37
50-59	5
60-69	5
Total	110



Graph 2. Causes of intense abdominal pain in patients with acute hepatitis A or B



Graph 3. Ultrasound findings of the gallbladder in patients with hepatitis A or B associated with cholecystitis

Table 2. Incidence of cholecystitis in etiologically different hepatitis

Age	Frequency cholecystitis	HAV	HBV
20-29	2	1	1
30-39	17	10	7
40-49	11	4	7
50-59	6	2	4
60-69	2	-	2
Total	38	17	21

Discussion

The gallbladder is a hollow pear-shaped organ. Its length is about 10 cm and its width is about 4 cm. Gall bladder capacity is 50-60 ml. The lining cells of the gall bladder absorb electrolytes by active transport. Water absorption is passive (3). The lining cells of the gallbladder secrete water and electrolytes, which provides dampening of its wall. The transfer of substances through the wall of bile acids is regulated under the influence of gastrointestinal hormones,

prostaglandins, bile acids and autonomic nervous system. In acute cholecystitis, especially if the gallstones are stacked in the gallbladder neck, there is a reverse direction of transmission of liquids through its mucous membranes. Large fluid secretion in the gallbladder lumen leads to expansion of its wall. It stimulates prostaglandin synthesis by the cell wall of the gallbladder. These may cause necrosis and perforation of the gallbladder wall.

Diseases of the gallbladder and biliary tract rank as the most common diseases of the digestive system. Over 1.5 million cholecystectomies are performed each year worldwide. Acute cholecystitis is an inflammation of the gallbladder wall, usually caused by gallstones in the gallbladder which causes a sudden, extremely severe pain (4). At least 95% of the population with acute inflammation of the gallbladder have gallstones. Rarely, the inflammation is caused by bacterial infections. Acute inflammation of the gallbladder without gallstones is a serious disease. It tends to appear after injury, surgery, burns, sepsis, and especially in patients who had been fed intravenously for a long period. In 5-10% acalculous cholecystitis is caused by surgical trauma, infections caused by *Salmonella typhi*, parasites or due to pancreatitis. During examination, the patient's sensitivity under the right rib arch is registered and sometimes defans - muscle rigidity of anterior abdominal wall, as a sign of pericholecystitis and local peritonitis. Attack of the gallbladder accompanied by jaundice suggests that the common bile duct may be partially clogged by gallstones or inflammation. Diagnosis of acute inflammation of the gallbladder is based on the patient's symptoms and results of some tests. Laboratory analysis - parameters of inflammation are usually high. The levels of liver enzymes AST and ALT, AP, GGT in some patients are high. When gallstones go to the gallbladder line, laboratory analysis shows increased values of bilirubin. Ultrasound diagnosis can often help to confirm the presence of gallstones in the gallbladder and may indicate a thickening of the gallbladder wall (4,5).

Acute inflammation of the liver is most commonly caused by viruses A, B and C. B and C viruses are very dangerous, because upon acute, commonly, unrecognized attacks of illness, chronicity is appeared, and chronic liver disease

caused by viruses is one of the leading causes of death. Hepatitis B virus (HBV) is known worldwide as a cause of both acute and chronic hepatitis. Acute HBV infection is usually asymptomatic (60% infected), as a self-limiting disease, with complete curing in 90-95% of patients, on average, after a 2-3 months of treatment. Hepatitis A is a mild self-limiting inflammatory disease of liver, caused by hepatitis A virus, transmitted via faecal - oral route and does not lead to chronicity. Most often, the clinical picture of acute hepatitis involves fatigue, nausea, vomiting, fever and pain below the right rib arch abdomen. Some associated diseases and conditions may worsen the clinical course of hepatitis. Acute cholecystitis during hepatitis A is often of acalculous type (5-7).

Within this study, among patients with hepatitis A and B, we investigated the cause of more intensive abdominal pain. In the selected sample there were more male examinees - 63 (62%) compared to female ones - 47 (38%). The most frequent age of examinees was 30-50 years, 82 (83%) examinees, and cholecystitis during hepatitis was also most common in the age group of 30-50 years, 28 (73%) examinees. The literature stated that most patients with cholecystitis belonged to the age group 40-50 years (5,6). In our study, cholecystitis during hepatitis was also most common in the age group 30-50 years, 28 (73%) examinees. Cholecystitis was more common in patients with acute hepatitis B - 21 (55%) examinees, compared to patients with acute hepatitis A - 17 (45%) examinees. Ultrasound examination, performed in 24 (63%) examinees, showed gallstones in inflamed gallbladder, and 14 (37%) examinees had inflammation of the gallbladder without gallstones. Larger number of patients with acute acalculous cholecystitis has been reported in patients on chronic dialysis program (7,8).

Conclusion

- The most common cause of severe abdominal pain in patients with acute liver infection caused by viruses HAV and HBV was the gallbladder - in 38 (34.5%) examinees.
- Cholecystitis was more common in patients with acute hepatitis B - 21 (55%) examinees than in those with acute hepatitis A - 17 (45%) examinees.

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CHOLECYSTITIS KAO UZROK ABDOMINALNOG BOLA KOD OBOLJELIH OD AKUTNIH VIRUSNIH HEPATITISA A I B

Miodrag Radunović, Dragica Terzić, Boban Mugoša, Zoran Terzić, Bogdanka Andrić, Marina Ratković i Miroslav Radunović

Akutni Cholecystitis je upala zida žučnog mjehura koja obično nastaje zbog kamenca u cističnom vodu, a uzrokuje napade jakih bolova. Najmanje 95% ljudi sa akutnom upalom žučnog mjehura ima žučne kamence. Akutni virusni hepatitisi su upale jetre praćeni mučninom, malaksalošću, povraćanjem, bolom ispod desnog rebarnog luka, žuticom. Prisustvo akutnog holecistitisa intenzivira postojeće simptome.

Cilj rada bio je pokazati učestalost zapaljenja žučne kese kod bolesnika koji su imali akutni hepatitis A ili B.

U ovoj retrospektivno-prospektivnoj studiji uključeno je 110 oboljelih koji su se liječili od virusnog hepatitisa A ili B, a tokom hospitalizacije su imali jake bolove u trbuhu.

U formiranom uzorku imali smo veći broj osoba muškog, 63(62%) ispitanika, nego ženskog pola, 47(38%) ispitanica. Najfrekventnija starosna dob ispitanika bila je 30-50 godina, 82 (83%) ispitanika, a Cholecystitis u toku hepatitisa bio je najčešći takođe u starosnoj dobi 30-50 godina, 28 (73%) ispitanika. Cholecystitis je bio češći kod oboljelih od akutnog hepatitisa B, 21(55%) ispitanik, nego kod oboljelih od akutnog hepatitisa A, 17 (45%) ispitanika. Ultrazvučnim pregledom kod 24(63%) ispitanika u upaljenoj žučnoj kesi viđeni su kamenci, a kod 14 (37%) ispitanika imali smo upalu žučne kese bez prisustva kamenca.

Najčešći uzrok jakog bola u trbuhu kod ispitanika sa akutnom infekcijom jetre sa HAV i HBV bila je upala žučne kese, kod 38 (34,5%) ispitanika. Cholecystitis je bio češći kod oboljelih od akutnog hepatitisa B, 21 (55%) ispitanik, nego kod oboljelih od akutnog hepatitisa A, 17 (45%) ispitanika. *Acta Medica Medianae 2012;51(1):20-23.*

Ključne reči: *cholecystitis, abdominalni bol, virusni hepatitis A, virusni hepatitis B*