



O'T TOSH KASALLIKLARINING KELIB CHIQISHI VA HOZIRGI KUNDAGI DOLZARB MUAMMOLARI

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Annotatsiya: O't tosh kasalligi (xolelitiaz) bugungi kunda dunyo miqyosida keng tarqalgan kasalliklardan biri hisoblanadi. Ushbu kasallik o't pufagida yoki o't yo'llarida turli hajm va shakldagi toshlar hosil bo'lishi bilan tavsiflanadi. Zamonaviy tibbiyot rivojlanayotganiga qaramay, o't tosh kasalligi bilan bog'liq muammolar dolzarbligicha qolmoqda. O't tosh kasalligining rivojlanishi ko'p omillarga bog'liq bo'lib, ularning asoslari quyidagilardan iborat: Birinchidan, metabolizm buzilishlari muhim rol o'ynaydi. Xususan, organizmda xolesterin almashinuvining izdan chiqishi natijasida o't tarkibida xolesterin miqdori ortib ketadi va bu kristallarning hosil bo'lishiga olib keladi. Ikkinchidan, noto'g'ri ovqatlanish odatlari ham asosiy sabablar sirasiga kiradi. Yog'li, qovurilgan va tez tayyorlanadigan ovqatlarni ko'p iste'mol qilish o't tarkibini o'zgartirib, tosh paydo bo'lish xavfini oshiradi. Uchinchidan, kam harakatli turmush tarzi ham kasallik rivojiga zamin yaratadi. Jismoniy faollik yetishmasligi o'tning dimlanishiga olib keladi, bu esa toshlar hosil bo'lishiga qulay sharoit yaratadi. To'rtinchidan, irsiy omillar ham ahamiyatga ega. Agar oilada ushbu kasallik kuzatilgan bo'lsa, keyingi avlodlarda ham uning paydo bo'lish ehtimoli yuqori bo'ladi.

Kalit so'zlari. Xolelitiaz, o't-tosh kasalligi, o't-tosh, tarqalishi, bog'liq omillar, xvf omillari.

АКТУАЛЬНЫЕ ПРОИСХОЖДЕНИЕ ЖЕЛЧНОКАМЕННОЙ БОЛЕЗНИ И ЕЁ ПРОБЛЕМЫ НА СЕГОДНЯШНИЙ ДЕНЬ

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Аннотация: Желчнокаменная болезнь, или холелитиаз, на сегодняшний день считается одним из широко распространённых заболеваний во всём мире. Данное заболевание характеризуется образованием камней различного размера и формы в желчном пузыре или желчных протоках. Несмотря на развитие современной медицины, проблемы, связанные с желчнокаменной болезнью, остаются актуальными. Развитие желчнокаменной болезни зависит от многих факторов, основными из которых являются следующие: Во-первых, важную роль играют нарушения обмена веществ. В частности, в результате нарушения обмена холестерина в организме повышается его содержание в составе желчи, что приводит к образованию кристаллов. Во-вторых, неправильные



пищевые привычки также относятся к основным причинам заболевания. Частое употребление жирной, жареной пищи и продуктов быстрого приготовления изменяет состав желчи и повышает риск образования камней. В-третьих, малоподвижный образ жизни также создаёт условия для развития заболевания. Недостаток физической активности приводит к застою желчи, что создаёт благоприятные условия для образования камней. В-четвёртых, наследственные факторы также имеют значение. Если данное заболевание наблюдалось в семье, вероятность его возникновения у последующих поколений также повышается.

Ключевые слова. Холелитиаз, желчнокаменная болезнь, желчнокамен, распространенность, связанные факторы, риск факторы.

ETIOLOGY OF GALLSTONE DISEASE AND ITS CURRENT CLINICAL CHALLENGES

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Annotation: Gallstone disease, or cholelithiasis, is currently considered one of the most widespread diseases worldwide. This disease is characterized by the formation of stones of various sizes and shapes in the gallbladder or bile ducts. Despite the development of modern medicine, the problems associated with gallstone disease remain relevant. The development of gallstone disease depends on many factors, the main ones being the following: Firstly, metabolic disorders play an important role. In particular, as a result of impaired cholesterol metabolism in the body, the amount of cholesterol in the bile increases, which leads to the formation of crystals. Secondly, unhealthy eating habits are also among the main causes of the disease. Frequent consumption of fatty, fried, and fast foods changes the composition of bile and increases the risk of stone formation. Thirdly, a sedentary lifestyle also contributes to the development of the disease. Lack of physical activity leads to bile stagnation, which creates favorable conditions for the formation of stones. Fourthly, hereditary factors are also important. If this disease has been observed in a family, the likelihood of its occurrence in future generations also increases.

Keywords. Cholelithiasis, Gallstone disease, Gallstone, Prevalence, Associated factors, risk factors.

Introduction. Gallstones (GS) are deposits of bile salt that develop in the bile ducts (choledocholithiasis) or gallbladder (cholelithiasis). Bile pigments, high cholesterol, and calcium ions combine to produce GS. Most asymptomatic stones are unintentionally found during normal medical checks or while a medical issue is being tested for. Some are visible on oral cholecystograms, while others are palpated during laparotomies [1,2,3]. Gallstones can be



broadly categorized as cholesterol, pigment stones, or mixed cholesterol GS based on their main chemical constituents. Uncertainty surrounds the pathophysiology and etiology of each type of GS. G is caused by the intricate interaction of environmental and genetic factors. Globally, gallstone disease (GSD) is putting an increasing strain on healthcare systems. Its prevalence has continuously increased worldwide as a result of changes to a westernized diet and fast urbanization [5,6,7]. GSD is currently a major problem in wealthy countries and seems to be getting worse in developing ones. Furthermore, the illness has a substantial negative impact on health, increasing hospital stays, surgeries, and medical expenses [8]. It is estimated that 20–25 million persons in the United States of America (USA) suffer from gallstones, the most common type of biliary system disease in adults and the primary cause of hospital admissions for gastrointestinal tract (GIT) problems [9,10]. Between 650,000 and 700,000 cholecystectomies are performed in the United States each year. A few research have been published in Africa. The prevalence ranged from 4% to 10%. Cholelithiasis was formerly believed to be rare in sub-Saharan Africa. On the other hand, cholecystectomy rates seem to be rising with time. The mean prevalence of cholecystolithiasis is 3–4% in Asian populations and 10–12% in European cultures. The median gallstone prevalence rate varied from 5.9% to 21.9% in major sonographic epidemiologic investigations carried out throughout Europe. One of the most common gastrointestinal conditions, gallstone disease (GD), also known as cholelithiasis, has a significant impact on health care systems. Numerous conditions can lead to the formation of gallstones (GS). Gallstones in the hepatic bile duct, common bile duct, or gallbladder are the hallmark of GD, a chronic recurring hepatobiliary illness caused by poor metabolism of cholesterol, bilirubin, and bile acids. GD and cardiovascular disease, two prevalent illnesses in the world, are closely related and have a significant financial burden [4-6]. GD is one of the most costly gastrointestinal disorders in the world. Over 500,000 cholecystectomies are performed in the US, costing more than \$5 billion [8]. GS are thought to be preventable causes of death [11-17]. To the best of our knowledge, there are few investigations on GSD prevalence and related variables among Ethiopian communities. Furthermore, because the majority of the studies only examined the prevalence of GSD, they offered little information; therefore, it is critical to identify the prevalence and related factors. It is still difficult to detect GSD early due to a lack of community-based research and the fact that most patients are asymptomatic at the time of diagnosis, which raises the possibility of missed diagnoses and obscures the condition's true frequency. All things considered, this study lays the groundwork for future research in the area [1,5,6,11].

The main purpose of the presented manuscript is a brief analysis of the classic tetrad of Fallot: clinical and anatomical features, pathophysiology, diagnosis, its relevance in Uzbekistan and modern principles of treatment based on the results of authoritative scientific papers.

GD is a prevalent disorder worldwide [17]. Each region has a very different prevalence of GD. According to reports, the prevalence of gallstone disease in Western nations varies from roughly 7.9% in males to 16.6% in women. It is almost nonexistent (less than 5%) in Africans, ranges from 4.21% to 11% in China, and varies from roughly 3% to 15% in Asians. Some ethnic groups also have high rates of gallstone disease, such as 73% of Pima Indian women, 29.5% and 64.1% of American Indian men and women, and 8.9% and 26.7% of Mexican American men and women, respectively. GD is one of the most common and economically significant health issues in developed nations, with an overall frequency of 10%–20%. Higher GD morbidity is on the rise, and this development is linked to better illness detection. The ability of ultrasonography to identify asymptomatic patients, which leads to early treatment and the avoidance of major consequences, is one of the key advantages of early screening for gallstone disease. Both the



direct evaluation of the explanted live organ and the ultrasonographic scan of the gallbladder served as the reference standard for detecting GS [1-6]. The United States' indigenous and Hispanic populations have especially high rates of illness. According to data from epidemiological surveys conducted in the US, almost 20 million people have GD. However, GD is less common among the peoples of Africa, the far north, and Southeast Asia. In Russia, between 3% and 12% of examinees have GD. Among digestive disorders, the prevalence of gallbladder and biliary tract diseases is 15.8% among adult Russians, while it can reach 22% in Moscow [7-11].

GD is a complex illness. Gender is a major risk factor for GD in the general population; women are more likely than men to develop gallstones. Age, genetics, and race are other influences. Obesity, fast weight loss, insulin resistance, glucose intolerance, high dietary glycemic load, alcohol use, diabetes mellitus, hypertriglyceridemia, medications, and pregnancy are additional factors. Cholesterol supersaturation of bile, cholesterol precipitation and crystallization core formation, impairment of basic gallbladder functions (contraction, absorption, secretion, etc.), and impairment of the enterohepatic circulation of bile acids are the four main categories of factors that contribute to the formation of cholesterol gallstones to some extent [1,16,17].

It is hypothesized that the pathophysiology of GD is complicated and likely results from intricate interactions between numerous hereditary and environmental variables. Black pigment stones are caused by the precipitation of calcium hydrogen bilirubinate, where pigment supersaturation and the deposition of inorganic salts, phosphate, and calcium bicarbonate accelerate the nucleation, whereas unphysiological biliary supersaturation from hypersecretion of cholesterol, gallbladder hypomotility, and the accumulation of mucin gel contribute to the formation of cholesterol GS. Hemolytic illnesses, ileal disorders, enterohepatic cycling of unconjugated bilirubin, and/or surgery are frequently associated with pigment supersaturation [4-11]. A metabolic imbalance of lipids and bile salts in the gallbladder bile causes cholesterol GD. Impaired interactions between the three main components of bile—cholesterol, phospholipids, and bile acids—cause cholesterol stones to develop in the gallbladder. Three stages are involved in the pathophysiology of GS formation: growth, crystallization, and saturation. One necessary but not the sole factor that contributes to the genesis of GS is bile cholesterol supersaturation. Pronucleating and antinucleating elements as well as the gallbladder's functioning status play a significant part in this. Foreign objects can become foci of nucleation, including clips, suture materials, ingested pieces of plastic or metal, and parasites. Iatrogenic cholelithiasis is most frequently caused by surgical clips. The stones develop at a pace of three to five millimeters year, sometimes even more [12-17]. The main goal of cholelithiasis treatment is to remove the stones from the gallbladder or bile ducts. Hemolytic anemia, obesity, diabetes mellitus, and other disorders that cause cholelithiasis are treated after the disease's etiology is identified. For a long time, surgery has been the only treatment available for GD. The understanding of complex bile production and excretion processes, as well as the mechanisms underlying the development of GS and their structure, has been expanded by advances in bile molecular biology and biochemistry. This may increase the range of medical treatments that GD patients can receive. As a result, cholelithiasis is now treated equally with surgery and medication [3,4,11]. Cavitary cholecystectomy, endoscopic cholecystectomy, litholytic therapy (LT), extracorporeal shock wave lithotripsy (ESWL), extracorporeal shock wave lithotripsy + litholytic therapy, and percutaneous transhepatic LT are the fundamental treatments for GD. A therapist, surgeon, and patient must ultimately decide on the treatment plan. The fundamentals of medical treatment for



cholelithiasis will be discussed in this essay. New medical treatments for GD, such as litholytic therapy (stone dissolving) and lithotripsy (stone shattering), emerged in the second half of the 20th century. Litholytic treatment may be used for about 30% of gallbladder stone patients. GS dissolving uses bile acids and is based on the pathophysiology of cholepoiesis and choleresis in cholelithiasis. Researchers have demonstrated through experimentation that a redistribution of phases in a triangular coordinate system results from the ratio of bile acid concentrations [12-17].

Summary. To sum up, advances in the understanding of the pathophysiology of gallstone disease and the physiology of bile formation have made it possible to reduce the number of patients undergoing surgical treatment and increase the therapeutic treatment options for GD. It should be mentioned that significant progress has been made in understanding the mechanics behind the creation of GS, which may increase the potential for their conservative disintegration and shattering. Treatment for GD is still symptomatic because it is a complex condition. Further research is necessary since the etiology and pathogenesis of GD are still poorly understood, and effective non-surgical therapy and preventative measures are lacking. This encourages researchers to keep working in order to obtain fresh information that will enable advancements in the management of cholelithiasis. From the perspective of public health, it is crucial to investigate the biological and demographic indicators linked to the development of gallstone disease in addition to the baseline prevalence of the condition in a certain area. If we can identify the variables that lead to the development of GD, we can stop it by managing these variables [4-14].



Discussion. The world's healthcare systems are rapidly being burdened by gallstone disease. Few studies have looked at the prevalence of gallstone disease in Ethiopia, and to the best of our knowledge, few published studies have looked at the risk factors associated with gallstone disease. Assessing the prevalence of gallstone disease and related factors among patients who visited the surgical department of Debre Birhan Comprehensive Specialization Hospital was the primary goal of the current study [1,2,5]. Gallstones in the gallbladder, common bile duct, or hepatic bile duct are the hallmark of gallstone disease (GD), a chronic recurring hepatobiliary illness caused by poor metabolism of bile acids, bilirubin, and cholesterol. One of the most common gastrointestinal disorders, GD places a significant strain on healthcare systems. Serious consequences from GD include gallbladder malignancy and acute gallstone pancreatitis. This review covers the pathophysiology, therapy, and epidemiology of GD. Each region has a very different prevalence of GD. Gallstone illness has become more common in recent years. This is linked to a shift in lifestyle, including dietary modifications, decreased physical strain, and decreased motor activity. The ability of ultrasonography to identify asymptomatic patients, which leads to early treatment and the avoidance of significant consequences, is one of the major advantages of early screening for gallstone disease. It is hypothesized that the pathophysiology of GD is complicated and likely results from intricate interactions between numerous hereditary and environmental variables [3-11]. It implies that corticosteroids and oral contraceptives, which include steroid-related hormones, could be considered a model system for the development of cholelithiasis in humans. The progress made in understanding the pathophysiology of GD and the physiology of bile production has made it possible to broaden the therapeutic treatment indications for. In summary, gallstone disease was fairly widespread in our research area, with a frequency of 7.9%. Gallstone disease was highly correlated with female sex, alcohol consumption for more than five years, and a history of gastrointestinal surgery [12-17].

Conclusions. Metabolic disorders, changes in the ratio of bile components, malnutrition, obesity, hereditary factors and hormonal changes play an important role in the development of this disease. the mouths. Metabolic disorders, changes in the ratio of bile components, malnutrition, obesity, hereditary factors and hormonal changes play an important role in the development of this disease.

If untimely detection or untreatment occurs, inflammation of the bile ducts, pancreatitis, or other serious complications may develop. Therefore, it is important to identify the disease at an early stage and correct other symptoms. If untimely detection or untreatment occurs, inflammation of the bile ducts, pancreatitis, or other serious complications may develop. Therefore, it is important to identify the disease at an early stage and treat it correctly.

In modern medicine, diagnostic methods such as ultrasound, computed tomography, and magnetic resonance imaging are widely used to diagnose gallstone disease. On the other hand, treatment methods are selected depending on the stage of the disease and the general condition of the patient. Conservative treatment includes diet therapy and medication, and in difficult cases, surgical treatment, in particular laparoscopic cholecystectomy, is effective.

Also, the formation of a healthy lifestyle is important in the prevention of diseases. A balanced diet, increased physical activity, avoidance of excess weight and control of metabolic disorders can reduce the risk of developing gallstone disease. In general, an in-depth study of cholelithiasis, the identification of its etiological factors and the improvement of preventive measures will help reduce the prevalence of this disease and improve the quality of life of patients.



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