

**DESCRIPTION OF COURSE UNIT FOR DOCTORAL STUDIES  
AT VILNIUS UNIVERSITY**

<b>Scientific Area/eas, Field/ds of Science</b>	Medical and health sciences (M 000): Medicine (M 001)			
<b>Faculty, Institute, Department/Clinic</b>	Faculty of Medicine, Vilnius University Institute of clinical medicine Clinic of gastroenterology, nephrourology and surgery			
<b>Course unit title</b> (ECTS credits, hours)	<b>Hepatopancreatobiliary Diseases</b> 9 credits (240 hours)			
<b>Study method</b>	<b>Lectures</b>	<b>Seminars</b>	<b>Consultations</b>	<b>Self-study</b>
Number of ECTS credits	-	-	1	4
<b>Method of the assessment</b> (in 10 point system)	Oral examination. 3 questions are given.			
<b>PURPOSE OF THE COURSE UNIT</b>				
<p>To acquire the principles of pharmacotherapy in liver diseases. To acquaint and acquire the treatment practices of liver diseases that are approved in Lithuania and internationally. Special attention is paid to the diagnostics and the principles of treatment of viral hepatitis as well as detection and treatment of complications in liver cirrhosis, selection of patients for liver transplantation and post-transplant patient care.</p>				
<b>THE MAIN TOPICS OF COURSE UNIT</b>				
<p>Anatomy of the liver, segments, lobular structure, description of portal tracts. Venous and arterious hepatic circulation, paying special attention to portal vein circulation and the role of venous system in the formation of pathological collateral circulation. Bile duct system: intra and extra hepatic bile ducts, sphincter of Oddi. Physiology and mechanism of bile formation. Chronic viral hepatitis B – modes of transmission with special attention to patient risk groups. VHB variants and genotypes – the role of genotypes in the course of the disease and treatment results. Natural course of viral hepatitis B: clinical presentation in prodrome period, diagnostic criteria of chronic infection. HBeAg (+) chronic hepatitis B, HBeAg(-) chronic hepatitis B, chronic inactive hepatitis B infection, latent VHB infection. Immune tolerance, immune clearance, low replication and reactivation stages of the infection. Goals and aims of treatment of chronic hepatitis B. Treatment with interferone of infectious hepatitis B and C. Treatment of chronic hepatitis B with lamivudine and other antiviral drugs. Role of hepatoprotectors in the treatment of chronic hepatitis B. Treatment of patients with compensated liver cirrhosis due to chronic hepatitis B. Delta viral hepatitis (D hepatitis), its relation to VHB infection and treatment options. Chronic viral hepatitis C – definition, epidemiology, aetiology (with particular focus on transmission routes and risk groups), pathogenesis, clinical presentation. Diagnosis of chronic hepatitis C – detection of antiHCV and its diagnostic implications, detection of HCV RNA, genotypes and viremia of VHC. Role of hepatic function tests in diagnosis of chronic VHC (cytolytic and cholestatic liver enzymes, synthetic liver function). Role of the liver biopsy in diagnosis of the disease – hepatitis activity index (HAI) and grade of liver fibrosis (F1-F4). Treatment of chronic VHC, approved practice of treatment of chronic VHC in Lithuania (last version approved in 2008 06 20). Treatment of chronic VHC with interferon and ribavirin, treatment control, repeat treatment. Treatment of patients with compensated liver cirrhosis due to chronic hepatitis C. Future treatment possibilities with other nucleotide analogues.</p>				

Autoimmune hepatitis (AIH) – definition, epidemiology, aetiology and pathogenesis. Classification of chronic autoimmune hepatitis – I variant (lupoid), II and III variants. Clinical manifestation and diagnostic approach in autoimmune hepatitis – description of diagnostic criteria and international system of AIH evaluation (simplified international evaluation score system of AIH). Morphological diagnosis of AIH. Treatment of AIH with glucocorticoids and azathioprine. Treatment of AIH with other medications. Alcoholic liver disease – definition, epidemiology, aetiology, pathogenesis and classification, understanding of alcoholic hepatosteatosis, alcoholic hepatitis and alcoholic liver cirrhosis. Clinical manifestations of alcoholic liver disease in various its stages. Diagnosis of alcoholic liver disease – markers of alcohol abuse, biochemical markers of liver damage, morphologic and visual diagnostic criteria of alcoholic liver disease. Treatment of alcoholic liver disease – treatment of alcoholic steatosis, alcoholic hepatitis, treatment according to the severity of the disease, treatment of alcoholic liver cirrhosis. Drug induced liver injury – definition, epidemiology, classification (hepatocellular, cholestatic and mixed type), aetiology (statins, antibiotics, metformine, antiviral drugs and other medication), pathogenesis and clinical manifestation. Diagnostic approach in drug induced liver injury – value of biochemical liver function parameters, morphologic liver examination, role of visual examination. Treatment of drug induced liver injury – special focus should be paid to the treatment of toxic liver injury due to acetaminophene. Drugs and the risk of liver cancer. Primary biliary cirrhosis (PBC) – definition, epidemiology, etiopathogenesis. Classification, clinical presentation and course of the disease in PBC. Biochemical diagnosis of PBC, markers of PBC, morphologic diagnosis of PBC (evaluation of inflammatory reaction and fibrosis in the liver). Differential diagnosis of PBC and other cholestatic liver diseases. Treatment of PBC, intense pruritus and complications due to cholestasis. Indications for liver transplantation. Primary sclerosing cholangitis (PSC) – definition, epidemiology, aetiopathogenesis. Clinical presentation and diagnosis of PSC - role of biochemical markers, morphologic diagnosis, radiological diagnosis. Natural course of the disease and its stages. Treatment of PSC – medical, invasive, indications for liver transplantation. Association of PSC and inflammatory bowel diseases, risk of cholangiocarcinoma in PSC. Liver cirrhosis and its complications. Liver cirrhosis is the final part of processes in liver damage manifesting irrespectively of the aetiology of the primary liver disease. Currently a classification based on aetiology of liver cirrhosis is used. Most common risk aetiological factors of liver cirrhosis (alcohol abuse, viral hepatitis B and C, other factors and diseases). Pathogenesis of chronic liver injury – inflammatory process in the liver leads to the formation of connective tissue, alteration in liver tissue architecture and liver function. Main complications of liver cirrhosis are varicose veins, ascites and encephalopathy. One of the most threatening complications of liver cirrhosis is gastrointestinal haemorrhage. Bleeding from varicose veins is managed endoscopically after a circulation blood volume is restored. Medical prophylactic of bleeding (propranolol, carvedidol) prolongs the survival of patients with liver cirrhosis. Ascites is a sign of a decompensated liver cirrhosis – diagnosis of ascites and its related complications. Ascites is managed with reduction of oral intake of salt with food and prescription of diuretics (combination of spironolactone and furosemide or torasemide). Paracentesis is a safe and effective treatment option for tense ascites. In a case of large volume paracentesis (more than 5 litres of ascites drained), an infusion of albumin is mandated. Spontaneous bacterial peritonitis is diagnosed with diagnostic paracentesis when more than 250 neutrophils in a microliter of ascites are detected. Spontaneous bacterial peritonitis is treated with III generation cephalosporins, quinolones, less frequently – other antibiotics. Diuretics refractory ascites is a predictor of poor prognosis and imminent risk of hepatorenal syndrome.

Hepatic encephalopathy in the context of acute or chronic liver insufficiency. Most effective treatment modality of hepatic encephalopathy – control of the causal risk factors. Hepatic encephalopathy is treated with reduction of protein intake with food, prescription of non-resorbable disaccharides and antibiotics, as well as drugs that alter the metabolism of ammonia.

Patient selection for liver transplantation and post-transplant care.

### RECOMMENDED LITERATURE SOURCES

1. Speičienė D., Lėtiniai hepatitai, klasifikacija, klinika, diagnostika //UAB Aola//2006.
2. Boolm S., Webster G., Oxford Handbook of Gastroenterology and hepatology//Oxford university press//2022.
3. Feldman M., Friedman Lawrence S., Brandt Lawrence J. Gastrointestinal and Liver Disease 11th edition, vol. 1//Elsevier //2020.
4. Thomas D. Boyer, Teresa L. Wright, Michael P. Manns, Zakim and Boyer's Hepatology a textbook of Liver Disease//sixth edition//Elsevier//2012.
5. Rodes J. Textbook of hepatology; from basic science to clinical practice (third edition)//Vol.1 Blackwell//2007.
6. Yamaha T. Textbook of gastroenterology (sixth edition)// Wiley –Blackwell//2015.
7. Denapienė G., Opinis kolitas//Vilniaus universitetas//Vilnius//2009.
8. Irnius A. Geriatrijų pacientų virškinamojo trakto ligos //Solvay//Vilnius //2009.
9. Kepenų cirozė, jos pasekmės ir komplikacijos: diagnostika ir gydymas// UAB Vaistų žinios, 2009;Vilnius, Speičienė D., Valantinas J.
10. Šeimos gydytojo vadovas//p. 796 UAB Vaistų žinios//2010.
11. Klinikinė gastroenterologija, UAB Vaistų žinios, 2010, Valantinas J., Kupčinskas L. ir kt.
12. Kepenų transplantacija, 2013, prof. habil. dr. Kęstutis Strupas.
13. Lietuvos chirurgija/Lithuanian Surgery, XV tomas/II-III numeris,2016, t.15(2-3), redaktorių kolegijos narys prof. habil. dr. Jonas Valantinas ir kt.;
14. Bakterinių infekcijų sergant kepenų ciroze diagnostika ir gydymas, 2016, Vitalija Petrenkienė, Limas Kupčinskas.
15. Management of Pancreatic Diseases, gastroenterology clinics of North America, 2016 march, Nuzhat A. Ahmad, Gary W. Falk.

### CONSULTING LECTURERS

1. Coordinating lecturer: Goda Sadauskaitė (doc. dr.).

2. Ieva Stundienė (doc. dr.).

3. Edita Kazėnaitė (doc. dr.).

### APPROVED

By Council of Doctoral School of Medicine and Health Sciences at Vilnius University:  
29<sup>th</sup> of September 2022

Chairperson of the Board: Prof. Janina Tutkuvienė