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CONTENTS

Oral presentations	1
BASIC MEDICAL SCIENCE & PHARMACY	1
Pharmacists' perspective on pharmacovigilance and barriers towards adverse drug reactions reporting in Lithuania: Qualitative study. <i>Agne Valinciute-Jankauskiene, Loreta Kubiliene</i>	1
Drug-related problems in Lithuania. <i>Jurgita Dauksiene, Jelena Deksiene</i>	2
CYP2C19, CYP2D6 and CYP2C9 genotyping for minimization of therapeutic failure and adverse drug reactions. <i>Domas Naujokaitis, Virginija Ašmonienė, Edmundas Kaduševičius</i>	3
Antioxidant, anti-inflammatory and neuroprotective properties of bog bilberry <i>Vaccinium uliginosum</i> L. pomace extract <i>in vitro</i> . <i>Reinis Rembergs, Kaspars Jēkabsons, Anna Tjumina, Olga Fišere, Pāvēls Filatovs, Marta Silavniece, Linards Kļaviņš, Māris Kļaviņš, Una Riekstiņa, Ruta Muceniece</i>	4
Morphofunctional characteristics of hematopoietic progenitor cells in myelodysplastic syndrome in culture <i>in vitro</i> . <i>Marharyta Pakharenko, Halyna Starodub, Ihor Lahodniuk, Natalia Tretiak, Nadiia Bilko</i>	5
Potential biomarkers for early diagnosis of multiple sclerosis. <i>Vitālijs Borisovs, Jevgenijs Bodrenko, Elīna Leonova, Jolanta Kalniņa, Natalia Paramonova, Nikolajs Sjakste</i>	6
Internalizing aptamers for the development of bi-functional aptamer constructs. <i>Karlis Pleiko, Vadims Parfejevs, Kristaps Krims-Davis, Līga Kunrade, Kaspars Jekabsons, Una Riekstina</i>	7
Smokeless tobacco associated with periodontal disease and oral malignity, a pilot study. <i>Sintija Miļuna, Juta Kroiča, Dagnija Rostoka, Ingus Skadiņš</i>	8
The <i>in vitro</i> study of antimicrobial effect of essential oils on Gram-negative bacteria. <i>Agnese Zvaigzne, Baiba Zandersone, Tatjana Tračevska</i>	9
Natural killer cell activation mechanisms in oncolytic measles virus therapy. <i>Rūta Veinalde</i>	10
A novel approach for quantification of amyloid-β plaques after long-term intracerebral brain infusion using Alzet microosmotic pumps. <i>Jolanta Upīte, Thomas Brüning, Baiba Jansone, Jens Pahnke</i>	11
Whether the challenge with cigarette smoke can predict lung disease development later in the life? <i>Immanuels Taivans, Normunds Jurka, Gunta Strazda, Valentīna Gordjušina</i>	12
Label-free characterisation of differentiation and senescence using imaging flow cytometry. <i>Vadims Parfejevs, Karlis Pleiko, Una Riekstiņa</i>	13
Application of <i>M. tuberculosis</i> whole genome sequencing in cluster investigation and verification of infectious sources in children-related tuberculosis outbreak. <i>Renāte Ranka, Ilva Pole, Darja Aļeņikova, Jānis Ķimsis, Inga Norvaiša, Nadežda Kolosa, Iveta Ozere</i>	14
Exploring pharmacogenetics aspects of anti-tuberculosis treatment in Latvian tuberculosis patients. <i>Viktorija Igumnova, Lauma Veidemane, Ilva Pole, Anda Viksna, Iveta Ozere, Valentīna Čapligina, Dace Bandere, Renāte Ranka</i>	15
Compact bone analysis after vacuum drying. <i>Roberts Lozins, Roberts Freibergs, Vineta Zemīte, Jurijs Dehtjars, Irina Paegle, Luīze Bicāne, Modris Ciems, Dzintars Ozoliņš</i>	16
The influence of orally administered nanostructural highly activated charcoal on functional activity of hematopoietic progenitor cells in the culture of diffusion chambers <i>in vivo</i> . <i>Nadiia Bilko, Yelyzaveta Sniezhkova, Denis Bilko, Marharyta Pakharenko, Iryna Russu</i>	17
Correlation between uric acid and triglycerides levels in normotensive patients in the Ukrainian population. <i>Yevhen Kovalenko, Inna Forkert, Oksana Melekhovets, Yuriy Melekhovets, Victor Orlovskii</i>	18
Medieval dental calculus microbiome in comparison to modern dental plaque and modern dental calculus microbial profiles. <i>Alisa Kazarina, Guntis Gerhards, Elīna Pētersone-Gordina, Jānis Ķimsis, Egija Zole, Jevgenija Kuzmicka, Pavels Zajakins, Žans Griškjans, Renate Ranka</i>	19
Analytical method validation for small-scale radiopharmaceutical production laboratory. <i>Ricards Kovaldins</i>	20
GASTROENTEROLOGY & GASTROINTESTINAL ONCOLOGY	21
Presence and severity of symptom-based gastroesophageal reflux disease associated with levels of pepsinogen. <i>Danute Razuka-Ebela, Inese Polaka, Sergei Parshutin, Daiga Santare, Inguna Ebela, Olga Sjomina, Raul Murillo, Rolando Herrero, Jin Young Park, Marcis Leja</i>	21
Autoimmune gastritis: determining the level of acid production as one of the criteria for severity of atrophy. <i>Olga Gasieva, Julia Embutnieks, Olga Berezina, Dmitry Bordin</i>	22
High-risk colorectal neoplasia detection rate in patients with positive fecal occult blood test undergoing colonoscopy. <i>Tija Grēta Tolmane, Ivars Tolmanis</i>	23
Peptic ulcer of the stomach and duodenum in Kazakhstan: Epidemiology features of the incidence. <i>Leila Isbulat, Kazyna Ikmat, Vladimir Lyust, Saken Kozhakhmetov, Nurbek Igissinov</i>	24
On the assessment of lost life from deaths after stomach cancer in Kazakhstan. <i>Rustem Taszhanov, Meruyert Madinova, Gulnura Igissinova, Saken Kozhakhmetov, Nurbek Igissinov</i>	25

Prevalence of gastrointestinal symptoms among young people and their nutrition habits. <i>Olga Gaus, Maria Livzan, Denis Turchaninov, Daria Popello</i>	26
Prevalence of low and high risk precancerous lesions in gastric mucosa. <i>Selga Savcenko, Inta Liepniece-Karele, Inga Bogdanova, Sergejs Isajevs, Ilze Kikuste, Aigars Vanags, Zane Dzērve, Ivars Tolmanis, Marcis Leja</i>	27
Thiopurine monitoring in late-onset inflammatory bowel disease patients. <i>Polina Zalizko, Juris Stefanovics, Jelizavete Sokolovska, Vita Rovite, Janis Klovinis, Aldis Pukitis</i>	28
Functional analysis of miR-1246 in colorectal cancer. <i>Rokas Lukoševičius, Violeta Šaltenienė, Simonas Juzėnas, Rūta Inčiūraitė, Kotryna Balčiūtė, Jurgita Skiecevičienė, Juozas Kupčinskas</i>	29
SURGERY	30
Evaluation of the venous system in peripheral artery disease patients after an endovascular PQ bypass system implantation. <i>Dainis Krievins, Santa Ozola, Janis Berzins, Reinis Pitura, Madara Bruvere</i>	30
Antibacterial prophylaxis vs treatment in patients after major lower limb amputation. <i>Matiss Draonieks, Zigurds Tamans, Arnolds Jezupovs</i>	31
Benefits and limitations in FLACS surgery vs. traditional manual phacoemulsification procedure. <i>Igors Solomatins, Jana Gertnere, Andrejs Solomatins, Maksims Solomatins, Anna Pimenova</i>	32
Long-term outcomes of microvascular decompression for trigeminal, glossopharyngeal neuralgia and hemifacial spasm. <i>Igors Aksiks, Jēkabs Aksiks</i>	33
Nuss procedure: how the equipment and anaesthetics impact the results. <i>Alise Ralle, Zane Ābola</i>	34
Correlation of patients' age with operation time, blood loss and hospitalization time in patients with primary osteoarthritis undergoing cemented hip arthroplasty. <i>Gustavs Rindžs, Andris Jumtiņš</i>	35
Postural asymmetry analysis using muscle sparing technique thoracotomy in esophageal atresia patients – long term follow-up. <i>Olafs Volrats, Janis Upenieks, Rihards Starinskis</i>	36
The role of radiological examinations in ankle fracture management. <i>Mārtiņš Malzubris, Dmitrijs Grigorjevs, Luīze Raga, Igors Terjajevs, Pēteris Studers</i>	37
Surgeons' experience of hidradenitis suppurativa in Latvia. <i>Viktorija Muraško, Alise Balcere, Ilze Upeniece, Kaspars Snipe, Arnolds Jezupovs</i>	38
Prevention of hospital-acquired pressure ulcers by usage of wearable sensors. <i>Maksims Mastalers, Helena Zvirbule, Austris Cirulnieks, Arnolds Jezupovs, Emil Syundyukov</i>	39
Similar clinical results after total hip arthroplasty and hemiarthroplasty due to femoral neck fracture. <i>Valts Boginskis, Sergejs Zadorožnijs</i>	40
CARDIOVASCULAR MEDICINE	41
Comparison of culture positive and negative infectious endocarditis patients undergoing cardiac surgery. <i>Kristians Meidrops, Peteris Stradins, Martins Kalejs, Valerija Groma, Arina Zuravlova, Janis Davis Osipovs</i>	41
Patient-Prosthesis Mismatch after aortic valve replacement: experience of a centre. <i>Rokas Nekrošius, Serik Aitaliyev, Vytenis Keturakis, Eglė Rumbinaitė, Povilas Jakuška</i>	42
The effectiveness of thrombolytic therapy in patients with acute cerebral infarction and a NIHSS score of 0-5 points at Riga East Clinical University Hospital "Gaiļezers". <i>Sergejs Pudulis, Ilga Ķikule, Iveta Haritončenko, Sanda Pudule</i>	43
Sudden death from post-traumatic complication: pulmonary artery fat embolism and pulmonary artery thromboembolism. Retrospective study. <i>Karolina Šakytė, Martinas Baltuonis, Jurgita Stasiūnienė</i>	44
Why is it important to follow up cardiovascular and physical health status of student volleyball athletes? <i>Kalvis Kaļva, Toms Jānis Eglītis, Oskars Kalējs</i>	45
Variability of low-density lipoprotein cholesterol reduction: statin monotherapy vs combination of statin and ezetimibe. <i>Ruta Meiere, Georgijs Nesterovics, Dainius Gilis, Elizabete Terauda, Vita Saripo, Andrejs Erglis, Gustavs Latkovskis</i>	46
Angiotensin converting enzyme inhibitor and thiazide use is associated with higher plasma trimethylamine-n-oxide levels in patients with type 2 diabetes. <i>Mairita Mažule, Melita Vidējā, Baiba Gukālova, Andrejs Ērglis, Maija Dambrova, Gustavs Latkovskis</i>	47
Use of stenting techniques for treatment of coronary bifurcation lesions. <i>Ilja Podolskis, Arnis Laduss, Evija Camane, Gustavs Latkovskis, Andrejs Erglis, Karlis Trusinskis, Dace Sondore, Inga Narbutė, Kristine Dombrovska, Andis Dombrovskis, Ieva Briede, Aigars Lismanis, Ainars Rudzītis, Sanda Jegere, Indulis Kumsars</i>	48
Thirty-day mortality and safety of transcatheter aortic valve implantation procedure in Latvian Centre of Cardiology during 2017–2019. <i>Santa Strazdiņa, Ainārs Rudzītis, Inga Narbutė, Irina Cgojeva-Sproģe, Mārtiņš Ērglis, Aļona Grāve, Mārtiņš Kalējs, Pēteris Stradiņš, Uldis Strazdiņš, Andrejs Ērglis</i>	49

PEDIATRICS	50
A six-month progress in psychomotor function of children with autistic spectrum disorder. <i>Jason Degiannis, Valdis Folkmanis, Lilian Tzivian</i>	50
Differences in quality of life of 9th grade adolescents at the beginning and at the end of the final school year. <i>Inta Zīle, Valdis Folkmanis, Līga Lismane, Annija Mežmača, Lilian Tzivian</i>	51
Opinion of children with motor disability diseases and their parents about their quality of life according to Kidscreen-52 questionnaire. <i>Kristīne Pudāne, Ieva Saulīte, Agnese Baršuka, Inese Kudeika, Ingrida Rumba-Rozenfelde</i>	52
Relations between use of electronic devices and psychomotor development of 6–36 months old children. <i>Elina Voitehoviča, Kristīne Sindecka, Karina Irita Romanova, Paula Branta, Egija Micule, Zanda Lase, Artis Lapsins, Valdis Folkmanis, Lilian Tzivian, Marta Celmiņa</i>	53
Self-rated health among adolescents: What matters more – emotional or physical factors? <i>Justē Lukoševičiūtē, Kastytis Šmigelskas</i>	54
Use of ultrasound examinations in pregnancy by region. <i>Irisa Zīle-Velika, Inguna Ebela, Ingrida Rumba-Rozenfelde</i>	55
Congenital cytomegalovirus infection – effectiveness of diagnostics and treatment in Latvia. <i>Natālija Vedmedovska, Angelika Krūmiņa, Santa Ūdre, Liene Rucka, Liene Smane</i>	56
The role of factor V Leiden (F5L) mutation in stillbirth at term. <i>Natalia Bursacovscaia, Victor Petrov, Victoria Secara, Alexandr Dorif</i>	57
Characteristics of paediatric acute hematogenous osteomyelitis – our approach. <i>Dace Osīte-Kovaļova, Jānis Upenieks</i>	58
ETHICAL, SOCIAL & LEGAL ASPECTS OF MEDICINE	59
Public attitudes towards research biobanks in Latvia. <i>Signe Mežinska, Jekaterina Kalēja, Ilze Mileiko, Vita Rovīte, Daiga Šantare, Liliana Tzivian</i>	59
Patient organizations in Latvia. <i>Baiba Ziemele</i>	60
Donors' perspective on research biobanking in Latvia: practical implications for involved professionals. <i>Jekaterina Kalēja, Signe Mežinska, Ilze Mileiko</i>	61
Negotiating the meaning of hospital-acquired infection control: ethnographic insights from Latvia. <i>Zane Linde-Ozola</i>	62
Legal framework of patient's decisional capacity and patient's legal competence (capacity) in Latvia. <i>Marina Loseviča, Solvita Olsena</i>	63
MENTAL HEALTH	64
Mood disorders among Lyme disease patients in Latvia. <i>Arvis Rasmanis, Inta Zīle</i>	64
Subjective barriers when (not) seeking mental health services: a patient-oriented internet forum content analysis. <i>Andis Užāns, Agija Kalve, Inguna Rudzīte</i>	65
Symptomatic remission in patients with schizophrenia and its correlating factors. <i>Artūrs Blekte, Artjoms Baharevs, Elmārs Rancāns</i>	66
Psychoemotional characteristics of patients with genital endometriosis. <i>Volodymyr Boyko, Tetiana Kopytsia, Anatolij Sukharev</i>	67
INTERNAL MEDICINE, INFECTIOUS DISEASES & PULMONOLOGY	68
Impact of alcohol consumption habits and other risk factors in development of alcoholic hepatitis. <i>Rita Kuzņecova, Ieva Tolmane, Sarmīte Skaida</i>	68
Investigation of local and systemic biomarkers in allergic airway diseases caused by house dust mite. <i>Laura Tamasauskiene, Vilte Marija Gintauskiene, Edita Gasiuniene, Brigita Sitkauskiene</i>	69
Efficacy of allergen-specific immunotherapy in patients with allergic asthma and allergic rhinitis: a single-centre experience. <i>Laura Saudargaite, Kamile Porutyte, Laura Tamasauskiene, Brigita Sitkauskiene</i>	70
iOS 12 measure application in assessment of low leg discrepancy in patients with diabetes mellitus. <i>Oksana Melekhovets, Anna Ivanova, Lufunyo Lihweuli</i>	71
DNA breakage is enhanced in type 1 diabetes. <i>Alise Dekante, Ilze Salna, Evita Rostoka, Leonora Pahirko, Jeļizaveta Sokolovska, Nikolajs Sjakste</i>	72
Impact of interval walking training managed through smart mobile devices on leptin/adiponectin ratio and cardiovascular risk in patients with type 2 diabetes mellitus. <i>Jeļizaveta Sokolovska, Margarita Jahimoviča, Natālija Černova, Karīna Ostrovska, Leonora Pahirko, Gunita Varblane, Juris Stefanovičs, Ksenija Krilatiha, Sanita Kalva-Vaivode, Austris Cīrulnieks, Jānis Valeinis, Aija Kļaviņa, Leo Selavo</i>	73
Dyslipidaemia as a risk factor for renal function decline in type I diabetes mellitus patients. <i>Jolanta Raubiške, Jeļizaveta Sokolovska</i>	74

Patch testing for patients with and without atopic disease. <i>Marcis Septe, Silvestrs Rubins, Anna Romanova, Andris Rubins</i>	75
Low-level laser therapy in treatment of hepatobiliary disorders in patient with acne vulgaris. <i>Alevtuna Radko, Oksana Melekhovets, Tatyana Kharchenko, Yurii Melekhovets</i>	76
Predictive factors of obstructive sleep apnoea. <i>Liāna Linda Līce, Jānis Labucis, Juris Svaža</i>	77
A case-control study of the association between genetic polymorphisms and the exudative age-related macular degeneration in Latvian population. <i>Beate Baumanē, Eliza Briede, Kristīne Baumanē, Viktorija Igumnova, Renāte Ranka</i>	78
H. PYLORI, MICROBIOTA & NUTRITION	79
Comparison of effectiveness of standard triple therapy and high-dose amoxicillin/ bismuth therapy in eradication of <i>H. pylori</i> . <i>Olga Sjomina, Alise Lielausē, Aiga Rūdule, Eva Martinsonē, Dārta Pūpola, Reinis Vangravs, Arnis Kiršners, Sergejs Paršutins, Henrihs Gorskis, Inese Poļaka, Aleksandra Jenicka, Eva Cine, Ģirts Šķenders, Danute Ražuka-Ebela, Mārcis Leja</i>	79
The comparison of side effects of standard triple therapy and high-dose amoxicillin / bismuth therapy in eradication of <i>H. pylori</i> . <i>Alise Lielausē, Olga Sjomina, Aiga Rūdule, Eva Martinsonē, Dārta Pūpola, Reinis Vangravs, Arnis Kiršners, Sergejs Paršutins, Henrihs Gorskis, Inese Poļaka, Aleksandra Jenicka, Eva Cine, Ģirts Šķenders, Danute Ražuka-Ebela, Mārcis Leja</i>	80
Correlation of lactulose and glucose breath test results in diagnosing small intestinal bacterial overgrowth (SIBO). <i>Arta Deniņa, Renārs Erts, Irēna Šitikova, Inese Poļaka, Mārcis Leja</i>	81
<i>Helicobacter pylori</i> and peptic ulcer disease. <i>Bayan Nurgaliyeva</i>	82
<i>H. pylori</i> clarithromycin resistance: experience in Kazakhstan. <i>Reinis Vangravs, Ilva Daugule, Dace Rudzite, Lucie Benejat, Linda Mezmale, Ilze Kikuste, Inga Bogdanova, Altynbek Tazhedinov, Dmitry Mushinskiy, Darkhan Sametayev, Tatyana Belikhina, Nurbek Igissinov, Francis Megraud, Marcis Leja</i>	83
Single nucleotide variants in long non-coding RNAs ANRIL and H19 are associated with gastric cancer type and <i>Helicobacter pylori</i> . <i>Kotryna Balčiūtė, Rūta Inčiūraitė, Vytenis Petkevičius, Greta Streleckienė, Marcis Leja, Juozas Kupčinskas, Jurgita Skiecevičienė</i>	84
Adherence to the Nordic and Mediterranean diets in Latvian population 40–64 years of age. <i>Daiga Šantare, Ilze Indriksone-Gromova, Lelde Cīrule-Dambe, Inese Poļaka, Sergejs Paršutins, Liene Sondore, Ilona Kojalo, Ilze Birka, Mārcis Leja</i>	85
Assessment of dietary intake in Latvian adults in relation to their mental wellbeing. <i>Ilva Lazda, Inese Siksnā, Angelika Krūmiņa</i>	86
PUBLIC HEALTH & SOCIAL MEDICINE	87
Low birth weight temporary trends in the Baltic states, and in the European Union over 25-year period. <i>Agnieszka Genowska, Birute Strukcinskiene, Vaiva Strukcinskaite</i>	87
Adherence to prescribed medications – administrative data study of discharged acute myocardial infarction patients. <i>Artis Luguzis, Jolanta Skrule, Jana Lepiksone, Juris Barzdins</i>	88
Common background, different pathways: primary healthcare system in Latvia and the Republic of Moldova after twenty-five years. <i>Natalia Zarbailov, Inguna Locmele</i>	89
Perception of patient safety climate in Latvian health care organizations: differences in personal opinions. <i>Eviija Palčeja, Valdis Folkmanis, Juris Barzdins, Lilian Tzivoian</i>	90
Muscle fatigue of construction workers and plasterers in construction enterprise. <i>Inara Roja, Henrijs Kalkis</i>	91
Work-related neck musculoskeletal pain among computer workers. <i>Gintarė Kalinienė, Rūta Ustinavičienė</i>	92
From the region to the globe: retrospective analysis of incidence rate of colorectal cancer in the course of decennial period. <i>Vitaliia Kostuchenko, Ihor Vynnychenko, Olexandr Vynnychenko, Yuliia Moskalenko</i>	93
Trends of ischemic heart disease incidence in Kazakhstan. <i>Aizhan Abzalbekova, Askat Kydyrbayev, Nurbek Igissinov</i>	94
Ethnoepidemiologic aspects incidence of ovarian cancer in Kazakhstan. <i>Dauletiyar Damiruly, Bekzada Muslimova, Zhansaya Telmanova, Gulnur Igissinova, Nurbek Igissinov</i>	95
REGENERATIVE MEDICINE & NUTRACEUTICAL RESEARCH	96
Delivery of autologous bone marrow-derived mononuclear cells in wide spectrum of pathologies (experience of 10 years). <i>Aris Lācis, Inguna Lubaua, Ēriks Jakobsons, Andrejs Ērglis</i>	96
Single centre safety data for mononuclear autologous bone marrow stem cell intracoronary transplantation in patients with chronic heart disease. <i>Ieva Briede, Dace Sondore, Sanda Jegere, Inga Narbutē, Indulis Kumsars, Karlis Trusinskis, Gustavs Latkovskis, Andis Dombrovskis, Kristīne Dombrovskā, Ainārs Rudzītis, Karlis Strengē, Alona Grave, Raimonds Mikijānskis, Ēriks Jakobsons, Simona Ticmanē, Beatrise Lucija Rupainē, Rasma Dortanē, Dzintra Saukanē, Kristaps Ērglis, Martins Ērglis, Andrejs Ērglis</i>	97

Dynamic of clinical signs in hip joint osteoarthritis after mononuclear cell injections during 36-month period. <i>Kristiāns Alpe, Valdis Goncars, Eriks Jakobsons, Ieva Briede, Kristaps Ērglis, Martins Ērglis, Indriķis Muiznieks, Andrejs Ērglis, Konstantīns Kalnberzs</i>	98
Factors influencing bone marrow mononuclear cell quantity and quality in patients with osteoarthritis. <i>Janne Viiala, Valdis Gončars, Ēriks Jakobsons, Andrejs Ērglis</i>	99
Optical glucose sensor: comparison of sensor prototypes with automatic and manual parameter setting. <i>Alma Eihentāle, Ēriks Jakobsons, Kristaps Ērglis, Aleksejs Tatarinovs, Vladimirs Nikulenkovs, Andrejs Ērglis</i>	100
Assessment of polycaprolactone application for three-dimensionally printed tissue scaffolds. <i>Beatrise Lūcija Rupaine, Ēriks Jakobsons, Kristaps Ērglis, Rasma Dortāne, Juris Kļava, Didzis Dejus, Kristers Moisejs, Andrejs Ērglis</i>	101
Predictive biomarkers for therapy-resistant cells. <i>Zane Simsonē, Tālivaldis Freivalds, Dina Bēma, Līga Harju, Juris Bērziņš, Indulis Buiķis</i>	102
Aziridin-2-carbonic acid derivatives as novel class of promising protein disulphide isomerase (PDI) inhibitors with anticancer activity. <i>Irena Leite, Victor Andrianov, Diana Zelencova, Iveta Kanepē-Lapsa, Ilona Domracheva, Einars Lozha, Marta Stojak, Stefan Chlopicki, Ivars Kalvins</i>	103
How to reduce the residual cardiovascular risk: Focus on Resveratrol. <i>Vilnis Dzērve, Kristaps Ērglis, Anda Čakša, Iveta Bajāre, Iveta Mintāle, Ieva Briede, Aldis Rozenbergs, Sanda Jēgere, Inga Narbutē, Ēriks Jakobsons, Mārtiņš Ērglis, Andrejs Ērglis</i>	104
Potential application of sea buckthorn extracted bioactive compound for residual risk reduction of cardiovascular disease. <i>Kristaps Ērglis, Ivars Kalviņš, Ēriks Jakobsons, Vilnis Dzērve, Mārtiņš Ērglis, Beatrise Lūcija Rupaine, Rasma Dortāne, Sanda Jēgere, Andrejs Ērglis</i>	105
Extraction yield of flavonoid apigenin from <i>Matricaria recutita</i> flowers. <i>Ēriks Jakobsons, Kristaps Ērglis, Beatrise Lūcija Rupaine, Rasma Dortāne, Simona Ticmane, Vilnis Dzērve, Andrejs Ērglis</i>	106
ANESTHESIOLOGY & INTENSIVE CARE	107
Monitoring of continuous femoral nerve block using remote photoplethysmography. A randomized double-blind placebo study. <i>Aurora Lövegren, Edgars Vasiļjevs, Uldis Rubins, Aleksejs Miščuks</i>	107
Effect of dexamethasone on acute pain relief, blood glucose and lactate level after hip arthroplasty. <i>Natālija Buraka, Iveta Golubovska, Aleksejs Miščuks, Sergejs Zadorožņijs, Lauris Repša</i>	108
Efficiency of infiltration between popliteal artery and capsule of the knee (IPACK) together with adductor canal blockade (ACB) in post-operative analgesia after knee replacement surgery – a preliminary analysis. <i>Lauma Valentīna Staceviča, Iveta Golubovska, Aleksejs Miščuks, Miķelis Birznieks, Jūlija Glazačeva, Sergejs Zadorožņijs</i>	109
Pain assessment with Critical-Care Pain Observation tool and Behavioural Pain Scale for critically ill patients undergoing mechanical lung ventilation. <i>Baiba Meldere</i>	110
Health-related quality of life assessment before and after open heart surgery. <i>Laura Bartecka, Jeļizaveta Pavlova, Toms Ceriņš, Eva Striķe</i>	111
Perineural nerve stimulation for acute pain management after shoulder joint replacement. <i>Eva Vītola, Natālija Buraka, Inta Čerņavska, Aleksejs Miščuks, Iveta Golubovska</i>	112
Automated cardiopulmonary resuscitation device for pre-hospital cardiac arrest: a single-centre experience of AutoPulse-CPR. <i>Eva Vītola, Toms Kapusta, Viktorija Ivļeva, Dzintra Jakubaņeca</i>	113
NURSING	114
Heated tobacco product impact on health and wellbeing – user experience, behaviours and attitude. <i>Renāte Ziemele-Lācīte, Gunta Ticmane</i>	114
Relationship between self-esteem and sleep in RSU medical students. <i>Anna Sokolova, Artūrs Miksons</i>	115
Impact of high physical load exercises on anthropometric parameters of military personnel. <i>Liana Plavina, Silva Smagare, Andris Čakstiņš</i>	116
Necessity to improve the Civil Procedure Code to accelerate proceedings in patients' rights cases. <i>Martins Osis</i> ...	117
Validity and reliability test of Latvian translation of Neuropsychiatric Inventory – Nursing Home Version. <i>Matīss Pudāns, Evija Rozenlauka</i>	118
Evaluation of an efficiency of the second nurse in general practice. <i>Līga Pogule, Juris Bārzdīņš, Renārs Erts</i>	119
Assessment of the staff hand antiseptics performance. <i>Zita Gierasimović, Aldona Mikaliukstiene</i>	120
NEUROLOGY & ONCOLOGY	121
Anxiety among Charcot-Marie-Tooth disease patients. <i>Elīna Millere, Dace Seile, Einārs Kupats, Linda Gailīte, Viktorija Keņiņa</i>	121
Epilepsy stigma in Lithuania. <i>Gabriela Seniūt, Dovilė Streckytė, Rūta Mameniškienė</i>	122
Exploring influence of weather on migraine. <i>Anna Petrinina, Renars Erts, Līgita Smeltere</i>	123
Perceived trigger and inhibiting factors of seizures in people with epilepsy. <i>Dovilė Streckytė, Gabriela Seniūt, Rūta Mameniškienė</i>	124

Cognitive impairment estimation of patients with Parkinson's disease. <i>Ieva Monika Žiaukaitė, Živilė Vaičekauskytė, Greta Pšemeneckienė</i>	125
The role of activating transcription factor 3 gene functional polymorphisms in early-stage breast cancer prognosis. <i>Erika Korobeinikova, Rasa Ugenskiene, Ruta Insodaite, Elona Juozaityte</i>	126
Investigation of circulating tumor DNA dynamics in patients with breast cancer. <i>Ihor Vynnychenko, Anastasiia Pryvalova, Oleksandr Vynnychenko, Yuliia Moskalenko</i>	127
Prevalence trends and years of life lost due to bladder cancer among the inhabitants of Latvia over past 28 years. <i>Erika Bitiņa-Barlote, Juris Plonis, Vinita Cauce, Egils Vjaters, Jānis Gardovskis, Miki Nakazawa-Miklaševiča</i>	128
Incidentally found vs non-incidental thyroid carcinomas. <i>Rita Ničiporuka, Artūrs Ozolins, Zenons Narbutis, Jānis Gardovskis</i>	129
Analysis of lncRNA ANRIL SNP rs4977574 association with bladder cancer development in persons with overweight. <i>Andriy Volkogon, Viktoriia Harbuzova, Alena Kolnoguz</i>	130
Poster presentations	131
GYNECOLOGY	131
Partner support in labour – impact on perinatal and obstetric outcomes. <i>Beāte Sārta, Anna Miskova</i>	131
Apoptosis and proliferation in kidneys of full-term newborns from mothers whose pregnancy was complicated by preeclampsia. <i>Mykhailo Myroshnychenko, Nataliia Kapustnyk, Olena Lytvynenko, Sergiy Myroshnychenko</i>	132
Corpus uteri cancer incidence in Kazakhstan. <i>Kazyna Ikmat, Zhansaya Telmanova, Gulnur Igissinova, Nurbek Igissinov</i>	133
Assessing enhancing factors for successful external cephalic version. <i>Elīna Voitehoviča, Renārs Erts, Sniedze Krūmiņa</i>	134
Cervical length, measured in the third trimester, as a prognostic factor for preterm labour for nullipara women. <i>Irina Morozova, Natālija Vedmedovska</i>	135
Weekend effect: does it exist in caesarean deliveries? <i>Justina Kacerauskiene, Karolina Kaunaite, Renata Paukstaitiene, Meile Minkauskienė, Ruta Jolanta Nadisauskienė</i>	136
Changes in indicators of cervix uteri cancer in Kazakhstan. <i>Zhansaya Telmanova, Kazyna Ikmat, Gulnur Igissinova, Nurbek Igissinov</i>	137
Review of laparoscopic supracervical hysterectomies performed in Vilnius City Clinical Hospital in 2016–2018. <i>Monika Šiaudinytė, Ieva Šiuigždaitė, Tomas Lūža</i>	138
Medical indications for transfer of women in prenatal, perinatal and postnatal period to a higher-level hospital. <i>Margarita Puķīte, Agnese Puķīte, Santa Ūdre, Agnese Anna Jaunākā, Ginta Vedļa</i>	139
PUBLIC HEALTH & EPIDEMIOLOGY	140
Characterization of complementary and alternative medicine in Latvia: evidence-based formal aspects. <i>Ligita Landzmane, Lasma Latsone</i>	140
Promoting healthy eating with methods of behavioural economics. <i>Vladislav Smiianov, Viktoriia Kurhanska, Olha Smiianova</i>	141
Herpes zoster vaccination: opinion of medical specialists in Lithuania. <i>Karolina Minikavičiūtė, Laura Račkauskaitė, Jurgita Knašienė</i>	142
Indicators for benchmarking of research and clinical trials. <i>Olga Sapoznikov, INTENT group</i>	143
Should only outstanding school graduates become medical students? <i>Laura Grima, Džanna Krūmiņa, Beata Krūmiņa, Helēna Kārklīņa, Olga Koroļova, Sarmīte Boka, Amanda Freimane, Gundega Knipše</i>	144
Bacterial food zoonosis in Ukraine. <i>Nina Malysh, Viktoriia Plaksa</i>	145
Colorectal cancer in Kazakhstan: the impact of age and gender on the incidence. <i>Aizhan Abzalbekova, Tomiris Sarina, Dulat Turebayev, Kairat Adaibayev, Saken Kozhakhmetov, Nurbek Igissinov</i>	146
Component analysis of changes in incidence of malignant neoplasms of central nervous system in Kazakhstan. <i>Asselya Brimzhanova, Kuanysh Kusmanov, Nurbek Igissinov</i>	147
Evaluation trends of hospital intracranial trauma incidents in Kazakhstan. <i>Kanat Akhmetov, Asselya Brimzhanova, Serik Akshulakov, Nurbek Igissinov</i>	148
Aspects of melanoma incidence in Kazakhstan. <i>Meruyert Madinova, Ardak Omarbekov, Nurbek Igissinov</i>	149
Assessing the incidence of vasomotor and allergic rhinitis in Kazakhstan. <i>Leila Isbulat, Alima Suleimenova, Saltanat Urazova, Nurbek Igissinov</i>	150
Crohn's disease in Kazakhstan: Some aspects of incidence. <i>Nailya Zhaparbekova, Dulat Turebayev, Saken Kozhakhmetov, Nurbek Igissinov</i>	151
Epidemiological features of breast cancer in Ukraine, Latvia and Europe. <i>Ihor Vynnychenko, Anastasiia Pryvalova, Oleksandr Vynnychenko, Yuliia Moskalenko</i>	152
Geographic variability of lung cancer incidence in Kazakhstan. <i>Islam Musanipov, Sarsembi Koblandin, Nurbek Igissinov</i>	153

Incidence of nonspecific ulcerative colitis in Kazakhstan. <i>Elmira Yesmagambetova, Dulat Turebayev, Saken Kozhakhmetov, Nurbek Igissinov</i>	154
On myopia incidence in major cities of Kazakhstan. <i>Almira Sarsembekova, Nurbek Igissinov</i>	155
The epidemiology of onychomycosis in Latvia during the last 5 years. <i>Ilona Zablocka, Anete Ezeriņa, Jānis Ķīsis</i>	156
Bronchial asthma in Kazakhstan: Epidemiological aspects incidence. <i>Bayan Gani, Shyryn Kenzhebekova, Saltanat Urazova, Nurbek Igissinov</i>	157
ONCOLOGY	158
Neuroendocrine tumours: relationship between survival and morphology. <i>Sofija Vilisova, Aija Geriņa-Bērziņa</i>	158
Laryngeal cancer incidence trends in Kazakhstan, 2009–2018. <i>Vera Zatonskikh, Arman Alibekov, Anatoliy Venglovskiy, Nurbek Igissinov</i>	159
Assessment of response to chemotherapy in patients with lymphoma. <i>Anna Petrinina, Marija Fjodorova, Sigitā Hasnere</i>	160
BRAF V600 E mutational status correlated with increased numbers of tumour - infiltrating lymphocytes in patients with melanoma. <i>Anna Nikolajeva, Dace Pjanova, Sergejs Isajevs, Tatjana Zablocka</i>	161
Contrast enhanced mammography – the first experience at the Oncology Centre of Latvia. <i>Anete Purolice, Ilze Enģele</i>	162
Electron microscopic examination of skeletal muscle regeneration in rats with chronic hyperglycaemia. <i>Raed Rtail, Gennadiy Tkach, Alexey Tymoshenko</i>	163
Metaplastic breast carcinoma in Latvia: a pilot study. <i>Baiba Mihailova, Aleksandrs Grjunbergs, Inese Briede</i>	164
Development of pancreatic insufficiency in patients with pancreatic tumours and chronic pancreatitis, depending on the operation. <i>Dmitry Bordin, Elena Dubtsova, Marina Malykh</i>	165
Breast cancer incidence trends in Kyrgyzstan. <i>Asan Chokoev, Nurbek Igissinov</i>	166
Prostate cancer in Kazakhstan: component analysis of incidence dynamics. <i>Diana Suleimenova, Azel Amralina, Nurbek Igissinov</i>	167
Patient-centred oncology care at Masaryk Memorial Cancer Institute, Czech Republic. <i>Laura Veinberga, Marek Svoboda, Olga Sapozhnikov</i>	168
INTERNAL MEDICINE	169
Qualitative and quantitative analysis of tear and eye surface in dry eye syndrome patients before and after increased visual load. <i>Kaspars Kudiņš, Kristīne Baumanē, Līga Plakane, Žanna Kudiņa, Sandra Ose</i>	169
Serum proteasome concentration in patients with different stages of diabetic retinopathy. <i>Zane Svikle, Laura Stirāne, Unda Kaļķe, Jeļizaveta Sokolovska</i>	170
Kidney survival analysis in Immunoglobulin A Nephropathy patients. <i>Anna Jana Saulīte, Anna Popova, Linda Kučāne, Viktorija Kuzema, Aivars Pētersons</i>	171
Association of achievement of guideline-defined treatment targets with diabetic nephropathy and retinopathy in type 1 diabetes patients in Latvia. <i>Regīna Krikova, Jeļizaveta Sokolovska, Ilze Salna</i>	172
New onset of diabetes mellitus after kidney transplantation: analysis of modifiable and non-modifiable risk factors. <i>Linda Kuhta, Inese Folkmane</i>	173
Neuropeptide Y concentration in type 1 diabetes patients with different cardiovascular disease risk factors. <i>Natalja Kaļļa, Margarita Rasiņa, Vladimirs Grigorjevs, Jeļizaveta Sokolovska</i>	174
Comparison of the prevalence of tick-borne pathogens in field-collected ticks in Latvia in two time periods, 2005–2007 and 2017–2019. <i>Valentīna Čaplīgina, Maija Selezņova, Agne Namiņa, Agnija Kivriņa, Marija Lazovska, Lauma Freimane, Rūdolfs Krūmiņš, Sarmīte Akopjana, Viktorija Igumnova, Darja Aļejiņikova, Alisa Kazarina, Jānis Ķīsis, Antra Borman, Renāte Ranka</i>	175
Eosinophilic granulomatosis with polyangiitis (EGPA), a study of 11 patients in Latvia. <i>Silvija Kaugere</i>	176
Relationship between biofilm forming potential and types of bacterial species isolated from patients with chronic tonsillitis. <i>Renāte Klagiša, Lāsma Asare, Arta Olga Balode, Jūta Kroiča, Ligija Ķīse</i>	177
A retrospective analysis of risk factors for secondary vasospasm leading to delayed cerebral ischemia after aneurysmal subarachnoid haemorrhage. <i>Ieva Buce-Satoba, Agnese Ozolina, Daina Rozkalne, Biruta Mamaja, Gaida Krumina</i>	178
Newly diagnosed amyloidosis in Rheumatology Centre, Latvia. <i>Kristīne Ivanova</i>	179
Adherence to medication among patients with chronic diseases. <i>Laima Jansone, Ieva Niedola, Dzidra Trumpika</i>	180
Anti-nociceptive actions of adipose-derived mesenchymal stem cells administered locally in different regiment at experimental model of peripheral trauma-induced neuropathy. <i>Anna-Maria Erofeeva, Irina Zhavoronok, Olga Antipova, Nadzeja Schastnaya, Svetlana Rjabceva, Irina Siamionik, Marina Derevyanko, Alla Molchanova</i>	181
RAD51B rs8017304 association with exudative AMD treatment. <i>Alvita Vilkevičiūtē, Rūta Mockutē, Vilma Jūratē Balčiūnienē, Džastina Čebatorienē, Loresa Kriaučiūnienē, Rasa Liutkevičienē</i>	182
Hereditary angioedema – treatment possibilities and its responsiveness in Latvia. <i>Adine Kanepa, Signe Purina, Verners Lozovskis, Baiba Slisere, Natalja Kurjane</i>	183

Factors affecting achievement of HbA1c goals in patients with type 1 diabetes in Latvia. <i>Viktorija Preobraženska, Jelizaveta Sokolovska</i>	184
Cortex changes after electrical stimulation in experimental rodent model of partial seizures. <i>Marina Derevyanko, Irina Siamionik, Vladimir Terekhov, Tigran Melik-Kasumov, Svetlana Rjabceva</i>	185
Comparison of virulence factors and antibiotic resistance of <i>Staphylococcus epidermidis</i> between strains isolated from patients and healthy volunteers. <i>Justīne Staņa, Lidija Viktorija Artiševska, Laura Grima, Evita Annamarija Klemence, Tatjana Tračevska, Iveta Līduma</i>	186
Assessment of the frequency of headache and quality of life of patients with migraine. <i>Anna Petrinina, Renars Erts, Ligita Smeltere</i>	187
Lyme disease presenting as Bannwarth syndrome. <i>Inga Sūna, Marija Kristiāna Rabuško, Ilze Rešetņikova, Guntis Karelis</i>	188
Regenerative actions of adipose-derived mesenchymal stem cells administered locally in different regiment within experimental model of peripheral neuropathy. <i>Irina Siamionik, Anna-Maria Erofeeva, Irina Zhavoronok, Olga Antipova, Nadzhejda Schastnaya, Marina Derevyanko, Alla Molchanova, Svetlana Rjabceva</i>	189
Level of vitamin D in acne patients and its correlation with severity index. <i>Ilona Zablocka, Olga Leitāne, Jānis Kīsis</i>	190

MENTAL HEALTH 191

Suicide attempts by using psychotropic medications: relationship with psychiatry consultations and diagnosed mental disorders. <i>Valdas Janušonis, Virginija Adomaitienė, Rimantas Žalinkevičius</i>	191
Attitudes of health care professionals toward looking after their own backs. <i>Matīss Mezals, Ilars Freimanis, Agnis Mezals, Inara Logina</i>	192
Anxiety and depressive disorders in patients with diabetes. <i>Aldona Mikaliukstiene, Bozena Dubova, Natalja Jerdiakova, Ana Novikova</i>	193
Assessing fulfilment of service recipients' and providers' environmental needs in inpatient mental health care institutions. <i>Edgaras Janutauskas, Eglė Balčiūtė, Jonas Audėjaitis, Stanislovas Mostauskis, Virginija Adomaitienė</i>	194
Substance use disorders among men in Latvian prisons. <i>Artjoms Baharevs, Sarmīte Skaida</i>	195
Associations between psychosocial work environment factors and self-rated health among physicians. <i>Rasa Žutautienė, Ričardas Radišauskas, Jolita Kirvaitienė, Rūta Ustinavičienė</i>	196
Exposure to total 36-h sleep deprivation reduces physiological and psychological thermal strain to whole-body uncompensable passive heat stress in young adult men. <i>Lina Malciene, Vincentas Natkevičius, Miglė Malčiūtė, Margarita Cernych, Andrius Šatas, Marius Brazaitis</i>	197
Prophylaxis of posttraumatic delirium in orthopaedic surgery ward, using haloperidol. Prospective, comparative study. <i>Matīss Lūciņš, Aivars Baurovskis</i>	198

CARDIOVASCULAR MEDICINE..... 199

Factors influencing outcome in patients with acute pulmonary embolism: the experience at one clinical centre in 2018. <i>Viktorija Pavlovska, Zane Liepina, Irena Kurcalte</i>	199
Tendencies and regularity of medication usage in patients with atrial fibrillation in Pauls Stradiņš Clinical University Hospital. <i>Anna Sergijenko, Terēza Strode, Elīna Rūsa, Viktorija Verhovceva, Oskars Kalējs</i>	200
Prevalence of chronic kidney disease among patients with confirmed pulmonary artery thromboembolism. <i>Anna Sergijenko, Oskars Kalējs</i>	201
Association of Arg389Gly polymorphism of ADRβ1 gene and T393C of GNAS1 gene with risk of development of acute coronary syndrome in patients with arterial hypertension. <i>Iryna Dudchenko, Luidmyla Prystupa, Hanna Fadieieva, Irina Moiseyenko, Anna Bondarkova, Nataliia Kuchma, Oleksandr Orlovskyi, Vladyslava Kachkovska</i>	202
Characteristics of the use of antihypertensive medication prescribed to older people. <i>Diana Razgutė, Loreta Kubilienė</i>	203
Evaluation of psycho-emotional state and sleep quality in patients with ischemic heart disease. <i>Aldona Mikaliukstiene, Audrone Sukackiene, Natalja Jerdiakova</i>	204
Prognosis of the course of coronary artery disease after revascularization. <i>Bayan Nurgaliyeva, Christina Shumara</i>	205
Exercise stress test in patient with persistent atrial fibrillation receiving treatment with Class Ic antiarrhythmic drugs. <i>Emma Sokolova, Ainārs Rudzītis, Oskars Kalējs</i>	206
Do platelet and inflammatory readings differ between chronic heart failure patients' groups according to NYHA functional classes? <i>Aušra Mongirdienė, Jolanta Laukaitienė</i>	207
The effect of oxidant on platelet aggregation and dityrosine concentration in chronic heart failure patients and healthy controls. <i>Aušra Mongirdienė, Jolanta Laukaitienė, Vilius Skipskis</i>	208
The impact of telomere shortening on determining a higher risk for cardiovascular diseases. <i>Inga Daugirdaitė, Paulina Šimaitytė, Danielius Serapinas, Marija Mendele Leliugiene</i>	209

SURGERY, ANAESTHESIOLOGY & INTENSIVE CARE.....	210
Clinical update on bariatric surgery in Latvia. <i>Guna Bīlānde, Maksims Mukāns, Igors Troickis, Egons Liepiņš, Oļegs Kozlovskis, Juris Žarinovs, Valdis Pīrāgs</i>	210
Optimal osteosynthesis of II–V metacarpal extra articular distal meta–epiphyseal fractures. <i>Rita Turkina, Kalvis Krastiņš</i>	211
A prospective comparison of frequency of postoperative neuropathies after different types of treatment methods for varicose veins. <i>Anna Ūdre, Solvita Bērziņa, Pēteris Gerke, Patricija Ioanova, Artūrs Ligers, Jānis Rozentāls, Kaspars Staudžs, Ints Ūdris, Vitālijs Zvirgzdiņš</i>	212
Different microsurgical approaches in cervical disc disease. <i>Igors Aksiks, Jēkabs Aksiks</i>	213
Early results of endoscopic microdiscectomy via interlaminar approach. <i>Igors Aksiks, Jēkabs Aksiks</i>	214
New treatment of postburn sluggish wounds. <i>Yerik Aitaliyev, Islam Yermekov, Abzal Almakhanov</i>	215
Differential approach in injection sclerotherapy techniques for treatment of chronic venous disease CEAP 1-2. <i>Viktorija Mishura, Yurii Melekhovets, Vasyl Pak, Oksana Melekhovets, Oleksandr Sytnik, Igor Duzhyi</i>	216
Acute traumatic extra-axial intracranial haemorrhages in Riga East Clinical University Hospital. <i>Reinis Jansons, Agnese Ozola, Estere Alpe</i>	217
Carolina Comfort Scale analysis of hernia patients before and after operation with polypropylene implant. <i>Rūdolfs Graicers, Arnolds Jezupovs</i>	218
Effect of transcutaneous electric nerve stimulation on postoperative pain relief following inguinal hernia repair: first data from randomised, double blinded, placebo-controlled trial. <i>Audrius Parseliunas, Egle Kubiliute, Donatas Venskutonis</i>	219
Ultrasound measurements of the lower uterine segment during the III trimester in pregnant women with scars on the uterine following caesarean surgery. <i>Evita Biseniece, Natālija Vedmedovska</i>	220
Cartogram of the lower limbs varicose incidence in Kazakhstan. <i>Shyryn Kenzhebekova, Bayan Gani, Saken Kozhakhmetov, Nurbek Igissinov</i>	221
Use of demographic and clinical parameters to predict postoperative complications and adverse events in patients with high risk of obstructive sleep apnoea. <i>Tatiana Ambrosii, Tatiana Tāzļāvan, Serghei Şandru</i>	222
Effects of opiates on the early postoperative period. <i>Elīna Skaida, Eva Striķe, Edīte Voliņeckā, Irina Evans</i>	223
Vivostat Fibrin Sealant effect on blood volume loss during revision total hip joint replacement surgery and post-surgery recovery. <i>Rihards Vugulis, Aleksejs Miščuks, Jānis Ābols, Lauris Repša, Aigars Vugulis</i>	224
PEDIATRICS	225
<i>Bacillus clausii</i> in treatment of rotavirus infection in children. <i>Kateryna Smiian, Oleksandr Smiyan, Tatiana Bynda, Andrij Loboda</i>	225
Behavioural and mental health screening in children with type 1 diabetes mellitus. <i>Evija Siliņa</i>	226
Breastfeeding problems and use of infant formula without medical indications. <i>Yana Maslosha, Natalia Burak, Ilze Aizsilniece</i>	227
Comparison in psychomotor function of children receiving Montessori therapy and children that do not receive any therapy. <i>Marija Grigorjeva, Valdis Folkmanis, Lilian Tziavian</i>	228
Early diagnosis of diabetic nephropathy in children with type 1 diabetes mellitus using the VCAM-1 biomarker. <i>Iryna Shandyba, Andrii Loboda</i>	229
Measuring process of care in paediatric palliative care. <i>Inta Kalnina, Anda Jansone</i>	230
Opinion of children with rheumatic diseases and their parents about their quality of life according to Kidscreen-52 questionnaire. <i>Agnese Baršuka, Ieva Saulīte, Kristīne Pudāne, Ingrīda Rumba-Rozenfelde</i>	231
The relationship between duration of breastfeeding and socio-demographic factors: age, education and number of children. <i>Julija Rutenbergē Galumbauskienē, Jūratē Pečeliūnienē</i>	232
Analysis of attention indicators for children and young people with developmental disabilities. <i>Anta Nasteviča, Daina Voita</i>	233
Clinical and electrophysiologic features of childhood Guillain-Barré syndrome in Latvia. <i>Dāvis Stilve, Elīna Millere, Laura Gribuste, Inese Kazaine, Viktorija Ķēniņa</i>	234
Infant mortality in relation to economic factors since the economic crisis in the Baltic states 2010–2016. <i>Nadine Alina Salber, Ingrīda Rumba-Rozenfelde, Inguna Ebela</i>	235
Prevalence of antibody deficiencies in patients with primary immunodeficiencies in Latvia. <i>Natalija Kurjāne, Tatjana Prokofjeva, Zane Lucāne, Natālija Gerula, Petra Kriķe, Inta Jaunālsne</i>	236
Prevalence of breastfeeding among Latvian infants: Initiation of breastfeeding within one hour of birth significantly influences duration of exclusive breastfeeding. <i>Karina Kvitkova, Ilva Daugule</i>	237
INFECTIOUS DISEASES.....	238
Relapse or reinfection: application of whole genome sequencing to distinguish between two independent forms of recurrent tuberculosis. <i>Darja Aļeiņikova, Iloa Pole, Anda Nodieva, Iveta Ozere, Jānis Ķimsis, Inga Norvaiša, Renāte Ranka</i>	238

Insights on senescence and therapy-related adverse effects in tuberculosis patients. <i>Lauma Freimane, Egija Zole, Linda Barkāne, Renāte Ranka</i>	239
Features of clinical and biochemical changes and indicators of APRI and FIB-4 in patients with chronic viral hepatitis C. <i>Anastasiia Lishnevska, Mykola Chemych, Oleg Berest, Vladislav Parashchenko</i>	240
Diagnosis of tick-borne infections by PCR. <i>Svitlana Nykytyuk, Stepan Podobivsky, Sergiy Klymnyuk, Ivan Klishch</i>	241
Lyme disease dissemination in Ukraine. <i>Inna Lutai, Mykola Chemych, Vitalina Sinuyka</i>	242
Prevalence of isoniazid mono-resistant TB in Latvia. <i>Anda Viksna, Iveta Ozere, Ginta Balode, Ilva Pole, Inga Norvaiša, Vija Riekstiņa</i>	243
Variability of complications of liver cirrhosis associated with hepatitis B and C viruses. <i>Artem Horbachevskyi, Mykola Chemych</i>	244
What do medical professionals know about vaccination against shingles? <i>Laura Račkauskaitė, Karolina Minikavičiūtė, Jurgita Knašienė</i>	245
Characteristics and intrahospital mortality of community-onset sepsis and septic shock patients in a tertiary healthcare facility in Latvia: a retrospective, single-centre, cohort study. <i>Laura Pučeta, Alise Grāmatniece</i>	246
Prevalence of resistant <i>M. tuberculosis</i> strains at Riga East Clinical University Hospital's Centre of Tuberculosis and Lung Diseases according to phenotypic resistance testing results. <i>Estere Alpe, Iveta Lūduma, Reinis Jansons</i>	247
GASTROENTEROLOGY & NUTRITION.....	248
Low prevalence of Barrett's esophagus. <i>Zane Dzerve, Ilze Kikuste, Aigars Vanags, Dans Stirna, Vilnis Sosars, Linda Sosare, Indra Gulbe, Ilona Vilkoite, Irita Roderte, Ivars Tolmanis, Marcis Leja</i>	248
Age-gender characteristics of pancreatic cancer incidence in Kazakhstan. <i>Arman Alibekov, Zhansaya Telmanova, Gauhar Nurtazinova, Sarsenbi Koblandin, Nurbek Igissinov</i>	249
Tumour regression after neoadjuvant chemotherapy in resectable gastric cancer. <i>Linda Anarkulova, Sigita Hasnere</i>	250
Capsule endoscopy in LUHS Kaunas Clinics from 2013 to 2019. <i>Inga Daugirdaitė, Paulina Šimaitytė, Mindaugas Urba</i>	251
Decreased pepsinogen level in relation to presence of menopause in the GISTAR study population in Latvia. <i>Jelizaveta Aleksejeva, Danute Razuka-Ebela, Ilva Daugule, Inese Polaka, Sergei Parshutin, Daiga Santare, Inguna Ebela, Raul Murillo, Rolando Herrero, Jin Young Park, Marcis Leja</i>	252
The role of the family doctor in invitation to do colorectal cancer screening. <i>Marta Kondratova, Aija Kondratova, Daiga Šantare</i>	253
The ability of gold nanoparticles sensors and metal oxide sensors to differentiate gastric cancer patients from healthy individuals. <i>Linda Mezmale, Inese Polaka, Ilze Kikuste, Ivars Tolmanis, Jan Mitrovičs, Marcis Leja</i>	254
Characteristics and outcomes of peptic ulcer bleeding in different age and gender groups. <i>Marta Bluzma, Anita Lapina, Oskars Kalejs, Juris Pokrotnieks, Zane Straume</i>	255
Helicobacter pylori infection, cardiovascular disease and its risk factors in Latvia. <i>Danute Razuka-Ebela, Inese Polaka, Sergei Parshutin, Daiga Santare, Inguna Ebela, Rolando Herrero, Jin Young Park, Marcis Leja</i>	256
University students and nutritional habits. <i>Vilma Jurkstiene, Gineta Vaicekauskiene, Kristina Jureniene, Genovaitė Kazlauskienė, Zibuokle Senikiene</i>	257
The impact of food consumption on sensor readings in a POC breath analysis device. <i>Inese Polaka, Viktors Veliks, Carsten Jaeschke, Marta Padilla, Martins Leja, Linda Mezmale, Ilze Kikuste, Jan Mitrovičs, Marcis Leja, Hossam Haick</i>	258
Detection of <i>Helicobacter pylori</i> by circulation in large cities of the Republic of Azerbaijan. <i>Gulustan Hameed Babayeva, Umud Rafael Mahmudov, Ulvi Rafael Machanov, Ziyad Saday Zalov, Emin Elxan Mamedov, Fatih Aslan, Farid Vidadi Quliyev, Gunay Vagif Asadova, Tunzala Amil Samedova, Tarverdi Mirzali Rzayev, Ruslan İsaç Mamedov, Natig Nizami Alizada, Elgun Nurulla Samadov, Zeynal Mamed Babayev</i>	259
BASIC MEDICAL SCIENCE.....	260
Antibiofilm activity of Ag nanoparticles against methicillin-resistant <i>S. aureus</i> . <i>Viktorija Holubnycha, Viktorija Korniienko, Petro Myronov</i>	260
Behavioural phenotype of Sigma-1 receptor knock-out mice. <i>Baiba Zvejniece, Baiba Svalbe, Gundega Stelfa, Edijs Vavers, Einars Kupats, Maija Dambrova, Liga Zvejniece</i>	261
Changes of novel microRNA expression <i>in vitro</i> after silencing pivotal microRNA biogenesis elements. <i>Rūta Inčiūraitė, Greta Streleckienė, Rokas Lukoševičius, Jurgita Skiecevičienė, Simonas Juzėnas</i>	262
Expression of GLUT-5 in chicken duodenal epithelium in norm and in T-2 mycotoxicosis. <i>Piret Hussar, Florina Popovska-Percinic, Ilmārs Dūrītis</i>	263
Genetic variations in the <i>PSMC6</i> and <i>PSMA6</i> proteasome genes are associated with multiple sclerosis risk and response to interferon beta therapy in Latvians. <i>Ilva Trapina, Natalia Paramonova, Jolanta Kalnina, Kristine Dokane, Kristine Osina, Nikolajs Sjakste</i>	264

Immunohistochemical analysis of human breast capsular contracture. <i>Jurijs Markovs, Eduards Jurševičs, Gundega Knipše, Džanna Krūmiņa, Agate Galuza, Kirils Jurševičs</i>	265
The interface between platelet membrane fatty acid composition and blood serum malondialdehyde in healthy and post-myocardial infarction men. <i>Inga Bikulčienė, Neda Garjonytė, Vytautas Žėkas, Dovilė Karčiauskaitė, Zita Aušrelė Kučinskienė, Arvydas Kaminskas</i>	266
The value of the assessment of tumour infiltrating lymphocytes for the risk stratification and clinicopathological characteristics of melanoma. <i>Tatjana Zablocka, Anna Nikolajeva, Selga Savcenko, Sergejs Isajevs, Dace Pjanova</i>	267
Thoracic aortic aneurysm: expression of vascular smooth muscle cell phenotype regulators in human aortic wall tissue. <i>Vaiva Patamsytė, Giedrius Žukovas, Dovydas Gečys, Rimantas Benetis, Vaiva Lesauskaitė</i>	268
Ultrastructural changes of thymic macrophages under the influence of total dehydration. <i>Olha Prykhdok, Serhii Dmytruk, Valentyna Bumeister, Olha Yarmolenko</i>	269
Antimicrobial resistance in clinical isolates of <i>Pseudomonas aeruginosa</i> and <i>Acinetobacter baumannii</i> . <i>Linda Alksne, Marta Mauriņa, Iveta Līduma</i>	270
Influence of creatine kinase on regulation of mitochondrial respiration supported by fatty acids. <i>Lolita Kuršvietienė, Julius Liobikas, Adolfas Toleikis, Sonata Trumbeckaitė, Dalia M. Kopustinskienė</i>	271
The effect of age-related Wnt signalling on breast cancer cell viability and mitochondrial membrane potential. <i>Gintarė Jančiukė, Ieva Ceslevičienė, Valeryia Mikalayeva</i>	272
The importance of DNA dynamics in neurodegenerative diseases. <i>Elīna Ļeonova, Natalia Paramonova, Nikolajs Sjakste</i>	273
Assessment of selected preservation solution flow in graft's vessels based on analysis of its rheological parameters. <i>Aneta Ostróżka-Ciešlik, Barbara Dolińska</i>	274
PHARMACY	275
Evaluation of essential oil composition of different parts of <i>Heracleum sosnowskyi</i> Manden using GC-MS. <i>Monika Bacevičiūtė, Asta Kubilienė, Mindaugas Marksa</i>	275
Encapsulation of <i>Elsholtzia ciliata</i> extract by spray-drying: effect of coating materials on the moisture content and solubility of the spray-dried powders. <i>Lauryna Pudžiuvelytė, Mindaugas Marksa, Jurga Bernatoniene</i>	276
Evaluation of the qualitative and quantitative composition of phenolic compounds in the European plum (<i>Prunus domestica</i> L.) fruit grown under Lithuanian climatic conditions. <i>Mindaugas Liaudanskas, Rugilė Okulevičiūtė, Juozas Lanauskas, Jonas Viškelis, Darius Koiklys, Norbertas Uselis, Valdimaras Janulis</i>	277
Locomotor activity in mice assessed by the home cage phenotyping system four months after the stroke surgery. <i>Helėna Vāne, Aleksandra Gžibovska, Reinis Maļuhins, Zane Dzirkale, Baiba Jansone</i>	278
Long-lasting effects of stroke on mitochondrial function demonstrated in mouse model of middle cerebral artery occlusion. <i>Reinis Maluhins, Fiona Bello, Aleksandrs Makarovs, Ilja Jelisejevs, Aleksandra Gžibovska, Renate Novicka, Jolanta Upite, Baiba Jansone</i>	279
Qualitative and quantitative composition variability of phenolic compounds in old cultivars of the apple grown in Lithuanian climatic conditions. <i>Aurita Butkevičiūtė, Mindaugas Liaudanskas, Jonas Viškelis, Darius Koiklys, Dalia Gelvonauskienė, Valdimaras Janulis</i>	280
Antioxidant activity of the essential oil from <i>Myristica fragrans</i> seeds with magnesium aluminometasilicate as excipient. <i>Inga Matulytė, Giedrė Kasparavičienė, Jurga Bernatoniene</i>	281
The pharmacovigilance of non-narcotic analgesics. <i>Zane Lielpētere, Zane Dzirkale</i>	282
Long-term effects on post-stroke locomotor activity in mice. <i>Agate Ābola, Aleksandrs Makarovs, Baiba Jansone, Zane Dzirkale</i>	283
Cell-SELEX-enriched aptamer selectivity screening with flow cell cytometry. <i>Kristaps Krims-Dāvis, Kārlis Pleiko, Una Riekstiņa</i>	284
Analysis of necessity of pharmacists' consultation for patients with constipation disorder. <i>Rima Minkutė, Indrė Andrijauskaitė, Vitalis Briedis</i>	285
<i>In vitro</i> Antimicrobial study on starchy aqueous extract of <i>Tinospora cordifolia</i> (Wild.) Miers compared with Ciprofloxacin and Nystatin. <i>Sujit Kumar Dalai, Brahmananda Mahapatra</i>	286

Features of clinical and biochemical changes and indicators of APRI and FIB-4 in patients with chronic viral hepatitis C

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Background. Chronic viral hepatitis C (CVHC) is a common and dangerous liver disease. Viral liver damage progresses from inflammation to the development of fibrosis and cirrhosis. The degree of liver fibrosis is important for determining therapeutic tactics and further observation.

Objective. Define the features of the clinical course, laboratory changes, APRI-test and FIB-4 scores in patients with CVHC.

Methods. 287 CVHC patients, divided into three groups by genotypes (1b, 2, 3a), and 55 healthy individuals were examined. The calculation of the APRI-test and FIB-4 scores was carried out using the Android application developed by us. Statistical processing was carried out in Microsoft Office Excel 2010 and IBM SPSS Statistical 23.

Results. The study showed that young people (47.74 %), men (66.20 %), those with genotype 1b (52.3 %), moderate liver fibrosis (F2 – 31.25 %) and minimal process activity (73.17 %) ($p < 0.05$) prevailed among the patients with CVHC. Asthenic-vegetative syndrome (81.88 %) and enlarged liver (76.26 %) ($p < 0.05$) were the most common diagnoses. An increase in the number of lymphocytes, ESR, ALT, AST and GGT levels relative to the indicators of the comparison group ($p < 0.05$) was also observed.

Patients with genotype 1b, as compared to the total sample, were more frequently diagnosed with telangiectasias, glomerulonephritis, those with genotype 2 – with ischemic heart disease (IHD) and cardiofibrosis, and less often – with an enlarged liver ($p < 0.05$), anaemia was not observed. The patients with genotypes 1b and 2 had higher protein levels, alkaline phosphatase levels were lower in patients with genotype 1b and 3, and creatinine levels – in those with genotypes 1b and 2 ($p < 0.05$).

In the total sample, the FibroTest for METAVIR correlated with the APRI test (0.71 (0.44–1.37); $P = 0.426$; $p = 0.000$) and FIB-4 (1.55 (0.98–2.65); $P = 0.558$; $p = 0.000$). The De Ritis ratio only correlated with FIB-4 ($P = 0.431$; $p = 0.000$).

Conclusions. Asthenic-vegetative syndrome, enlarged liver, increased number of lymphocytes and elevated ESR and transaminases were the most prevalent clinical and laboratory features. Telangiectasias and glomerulonephritis were more commonly observed in genotype 1b, IHD and cardiofibrosis – in genotype 2, whereas anaemia was not observed. Elevated blood protein levels were diagnosed in patients with genotypes 1b and 2, decreased alkaline phosphatase levels – in those with genotypes 1b and 3, and creatinine levels – in those with genotypes 1b and 2. All non-invasive methods for diagnosing liver fibrosis correlated with each other.

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