

## **Validation of fine-needle aspiration as a minimally invasive sampling method for pcr-based bpv detection in four clinical types of equine sarcoid**

**Lien Gysens**

Ghent University, Belgium

In equine practice, bovine papillomavirus (BPV) induced equine sarcoids are often identified based solely on clinical examination. Confirmation of the clinically suspected diagnosis is essential for correct treatment selection as well as for scientific research. However, only few approaches are presently available for this purpose. Histopathology is generally avoided by practitioners out of fear for lesion exacerbation. PCR based screening for BPV nucleic acids in superficial swabs is an alternative method to support clinical suspicion. While this method effectively detects sarcoid involvement in wounds, sensitivity is lower in tumours with intact epithelium. The aim of this study was to assess the ability to detect BPV DNA in sarcoid-derived fine-needle aspirations (FNAs), considering the whole spectrum of possible disease manifestations. The ability to detect BPV in all principal sarcoid types (occult, verrucous, nodular, fibroblastic) may facilitate a targeted diagnostic workup for identifying equine sarcoids.

PCR was performed using a singleplex assay for the detection of the housekeeping gene  $eqIFN\beta$ , to confirm successful DNA

extraction, and a multiplex assay for BPV-1/-2 detection. The sensitivity to detect BPV was different between swabs (69.8%) and FNAs (98.4%). In general, FNAs were more likely to detect sarcoid-associated viral nucleic acids ( $P < 0.001$ ). Furthermore, a 100% diagnostic specificity was obtained for FNA. Results suggest that PCR screening of FNA for BPV-1/-2 represents a valid method to detect viral nucleic acids in ulcerated sarcoids, as well as tumours with an intact skin surface. Moreover, FNA is a minimal invasive method that could be implemented in routine clinical practice to improve the consistency and quality of sarcoid diagnosis.

### **Speaker Biography**

Lien Gysens was working in Department of Surgery and Anesthesiology of Domestic Animals, Ghent University, Belgium. she demonstrated the ability to work independently on multiple equine sarcoid-focused research projects. Recently, her work paid off when her manuscript 'New approach for genomic characterisation of equine sarcoid-derived BPV-1/-2 using nanopore-based sequencing' was selected for publication in the international peer-reviewed Virology Journal.

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## **Interplay between metabolic signals and regulation of gene expression in activated macrophages: Focus on the ACLY / NF-κB axis**

**Vittoria Infantino**

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Metabolic reprogramming drives a proinflammatory phenotype in macrophages activated by pathogen-associated molecular patterns like lipopolysaccharide or lipoteichoic acid. Changes in gene expression also represent a hallmark of induced macrophages. Both metabolic and gene regulation shifts aim to support cell's function; although the relationships between them remain poorly explored. In recent years, we demonstrated that the metabolic enzyme ATP citrate lyase (ACLY), the producer of citrate-derived acetyl-coenzyme and oxaloacetate, plays a pivotal role in producing critical inflammatory mediators such as reactive oxygen species, nitric oxide and prostaglandin E<sub>2</sub>, whose levels lowered after treatments with ACLY inhibitors or during ACLY gene silencing. Newly, through immunocytochemistry and cytosol–nucleus fractionation, we observed a short-term ACLY nuclear translocation. By means of protein immuno-precipitation, the role of nuclear ACLY in NF-κB acetylation has been proved in human PBMC-derived macrophages. Markedly, septic patients - with sepsis in the

early hyper inflammatory phase -showed ACLY-mediated NF-κB acetylation. By inducing NF-κB full activation, ACLY-mediated NF-κB acetylation drives the expression levels of proinflammatory genes, including SLC25A1 which encodes the mitochondrial citrate carrier—and ACLY, thus promoting a proinflammatory loop.

### **Speaker Biography**

Vittoria Infantino has completed her PhD in “Cell Biochemistry and Pharmacology” from the University of Bari (Italy), studying mechanisms of transcriptional regulation. She further focused on this topic in postdoctoral studies. She is currently an Assistant Professor in Cellular Biology at University of Basilicata, Italy. Her research is focused on the relationship between gene regulation and metabolism in physiological and pathological conditions, with particular interest in cancer and inflammatory diseases. To deepen these topics, she worked as visiting scientist at the research group headed by Prof. Luke O’Neill, Trinity College Dublin, in 2016. She has published more than 50 papers in international peer-review journals.

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## **Preliminary analysis of Sri lankan clay species on behalf of the water treatments and subduing of microorganisms**

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**W**ater pollution is a compelling problem around the world with the increasing of water consumption and the accretion of the circumstances of water consuming. As a limited resource, it is necessary to be treated the contaminated water while undergoing some appropriate techniques. According to the environmental rules and regulations, there were enacted a set of rules and regulations for the releasing of consumed water to the environment. In the categorization of water treatment methods, the disinfection has been identified as a critical stage especially in drinking water treatments. The adsorption capacity is a leading characteristic of clay which is much useful in the water treatment applications. In the existing research there were expected to characterize three of selected clay varieties based upon the purpose of the investigation of the preliminary characteristics of those clay types. The representative clay samples were collected from Matale, Maduragoda and Dankotuwa areas which are recognized as the abundant area of fine grained clays that much suitable for roof tile industry. The collected clay samples were chemically analyzed using X-ray diffraction (XRD) spectrometer, X-ray fluorescence (XRF) spectrometer and Fourier transform infrared (FT-IR) spectrometer. The obtained results showed the presence of Fe, Zr, Ba, Ti and K as the major elements, kaolinite, quartz, glauconite, muscovite and marcasite as the common minerals in such clays. In the

considerations of advanced characteristics of such minerals, kaolinite, glauconite and marcasite have been identified as strong adsorbents for some specific compounds such as some heavy metals, radioactive elements and pathogens and some of ferrous minerals may have the supporting capacities in the catalytic activities for some chemical reactions that combining with some specific solid compounds such as activated carbon. Therefore, as the suggestions, it is possible to recommend the developments and enhancements for such clays for the uses in the waste water treatment applications and catalytic activities as a supporting material in various forms such as the bulks, composite materials or nano-materials.

### **Speaker Biography**

Suresh Aluvihara has completed his first degree in the year 2017 from a recognized government university in Sri Lanka. He is a postgraduate research scholar at the Department of Chemical and Process Engineering, University of Peradeniya, Sri Lanka. He has over 30 research publications that have been cited over 7 times with Hi- index publications. He has participated over 25 world recognized research conferences under the role of keynote speaker, invited speaker and featured speaker. He is serving as an editor and an editorial board member of a few of reputed journals in the disciplines of Earth Engineering, Chemical and Environmental Engineering and Material Engineering. In addition that he has been awarded as a best young scientist and best young researcher in a few of research competitions held in the year 2022.

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## **A rare presentation of hairy cell leukemia**

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**H**airy cell leukemia (HCL) is an uncommon but distinct indolent neoplasm of small mature lymphoid cells with hairy projections that affect the bone marrow, splenic red pulp, and peripheral blood. HCL mostly affects middle-aged to older people, with an average age of 58 years, and represents a male-dominated population. (About 4:1 male/female ratio). The clonal expansion of B-cells with the bright expression of CD19, CD20, CD22, and CD200 characterizes the HCL immunophenotypic profile. Hairy cells are usually negative or dim for CD5, CD23, CD10, and CD27 but positive for CD11c, CD103, CD123, and CD25. While HCL is traditionally assumed to be negative for CD10+ expression, various studies have shown cd10+ HCL instances. The frequency of cd10+ hcl cases reported in large studies has been quite variable, ranging from 5% to 26%. We report a case of a 43-year-old man with a CD10+ expression who presents with jaundice, upper gingiva hemorrhage, ecchymotic lesions, and periodic fever. A complete blood count (CBC) upon presentation revealed

pancytopenia with a white blood cell count (WBC) of  $4/75 \times 10^3 /\mu\text{L}$ . According to immunophenotyping, the population expressed CD19, CD20, CD25, CD11c, and CD10. It is vital to note that CD10 positive in HCL is a rare occurrence that is critical in this case. The results of the bone marrow aspiration, biopsy, and immunophenotyping all pointed to HCL. As an inpatient, the patient received cladribine 0.1 mg/kg intravenous continuous infusion. After one month, the total blood count was normal, and all symptoms of the disease had vanished. At the most recent 3-month follow-up, the patient was disease-free.

### **Speaker Biography**

Shayan khorami, a fourth-year medical student interested in blood and cancer research, has only recently begun his study on hematology and oncology without having published an article.

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## **Glutathione pathway and GST polymorphisms in the immune response to pathogen; case study: SARS-CoV-2: The missing piece of the covid-19 puzzle?**

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This review discusses the immune response to pathogen, with a focus on covid-19 and reduced (GSH) status, the role of GSH in T cell metabolism and response to viral infection, the polymorphism of genes responsible for GSH levels and how these impact covid-19. GSH maintains homeostasis in normal cells via scavenging reactive oxygen species (ROS), serving as a reservoir of cysteine. The effector function of T cell is essentially regulated by the metabolic activity of GSH. The clonal expansion of T cells leads to its requirement for increased glutamine utilization. Rising ROS concentrations is controlled by T cell via the use of endogenous antioxidants, especially GSH, whose synthesis is catalysed by glutamate cysteine - ligase (GCL). GST polymorphisms occur in most lungs, pancreatic, ovarian, cervical, colorectal and prostate cancers. The severity of illness in patients with underlying conditions could be associated with the status of GSH, GCLC, GST (glutathione-S-transferase). Furthermore, GSTs are involved in synthesizing prostaglandins, leukotrienes, progesterone, testosterone, and tyrosine-degradation. The involvement of GSTs in protein-protein interactions with vital kinases in the regulation of cellular signalling controls the stress response, proliferation, and apoptosis. Moreover, glutathione insufficiency may also facilitate greater stimulation of von Willebrand factor, a vital clotting factor responsible for platelet aggregation and coagulation. It has been demonstrated that the Nrf2 antioxidant gene expression pathway was suppressed in covid-19 patients.

Due to the implication of GST in kinases and immune systems, the activities of the various drugs utilized for the treatment of covid-19 require readdressing to consider the significance of polymorphisms in various therapies. This polymorphism in drug metabolizing enzymes (DMEs), including those from the GST gene family, could also influence individual and population response to covid-19 vaccines. Other key players of oxidative stress include Nrf2, KEAP1, and ACE2 receptors, which are regulated by RAS and implicated in the pathogenesis of covid-19.

### **Speaker Biography**

Bene A Ekine-Afolabi is a graduate of River State University of Science and Technology in Applied Biology (Medical Microbiology option); with an MRes degree at University of East London, United Kingdom. She had her PhD study and worked at the Department of Natural Sciences, Middlesex University, UK. Trained in practical approach to toxicology in drug development (American College of Toxicology/British Toxicology Society). She done her research in Microbiology, Molecular Biology and Cancer: Her current focus of research (which has yielded eight designed models), is on the Investigation of molecular mechanism of colorectal cancer and due to the current pandemic, has been involved in drug development for COVID-19. She has Harvard University part-sponsored training in therapeutic research in Cancer Biology and Therapeutic. She has been involved in three published peer reviewed article, two manuscript awaiting publication, among which one is on covid-19 and was submitted to the Chief Medical Officer of United Kingdom to assist in response to the pandemic.

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## **Detection of viral RNA in conjunctival secretions of hospitalized patients with confirmed covid-19 infection**

**Ghazala Rubi**

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To detect the presence of viral RNA in conjunctival swabs of patients with positive naso-pharyngeal swabs for Covid-19, Cross sectional study in Covid Admission Unit & EYE UNIT 1, Lahore General Hospital, from November 2020 to April 2021 (06 months). Approval was taken from Ethical Review Board of LGH by obtained from all patients we have taken Patients of both gender from the age 18 years & above. Positive PCR test from nasopharyngeal swab for Covid-19 criteria based on Patients mechanical ventilation we have taken patients topical eye drugs conjunctival swabs were collected from both eyes by the same ophthalmologist using PPE and done with LGH laboratory performed the analysis for all swabs in the statistical analysis data was entered and analyzed using SPSS v25.0 and Chi-Square test was applied to see the correlation between Conj. swabs and Serum markers and resulted A p-value  $\leq 0.05$  was considered significant. Conjunctive swabs collected from 66 patients that is 132 eyes and Covid-19

RNA was detected in 06 patients (9.1%), some other results Conjunctiva swabs Positive with Ocular Symptoms = 50% and Without Ocular Symptom = 6% considering P-Value (Chi-Square = 0.002) Highly Significant. Final Conclusions would be viral rna for Covid-19 can be detected in app. 9% of Conj. Swabs and Positive Conj. swab is strongly associated with the presence of ocular symptoms and such patients often have normal values of serum markers like D-Dimer, Ferritin, CRP & LDH.

### **Speaker Biography**

Ghazala Rubi is working in Molecular Genetics Research Lab. this is the Central Research Lab of Post Graduate Medical Institute, Lahore General Hospital. This Lab caters all facilities of Molecular & Genetics to all Researchers of Post Graduate Medical Institute and post graduates research Projects.

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## **B12 deficiency in India**

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**B**12 deficiency is extremely common, especially so in India, as is vitamin D deficiency, folic acid, or iron deficiency, all because of wrong dietary habits and malnutrition which are extremely common, even among the rich. The reasons for these are too many, and are related to diet, lifestyle, social and cultural issues. The issues are further compounded by the fact that folic acid deficiency which is universally common is present here as well and that B12 cannot function without folic acid. There is another ignored fact that cobalamin has two active components with action on almost all organs and tissues in the body. Deficiency is primarily due to nutritional issues and malabsorption and the malfunction due to defects in any one of the various steps in its complex metabolisms, including at the receptor level. Deficiency by any mechanism can cause cytopenia, pregnancy related issues, cardiovascular, cutaneous, mucosal problems and neuronal dysfunction due to chronic demyelination. Any one of its varied manifestations can occur in isolation and can be coexisting with other comorbidities. In addition, the symptoms are modified also by the underlying disorders causing its deficiency. Despite being a very common disorder, its recognition is delayed or missed because the manifestations are diverse in nature, affecting all the organs and systems, and is often subclinical. To add to the confusion doctors, tend to use laboratory estimations alone for diagnosis, which are notoriously unreliable even from the best of centers. All these happen when it is easy to identify the disorder, in the vast majority, using a detailed dietary history and looking for all the clinical features and an automated

hemogram. In treatment also there are issues regarding the choice of the molecules to be used. Replacement would work only in the presence of diet and lifestyle and modification and folic acid supplementation. In this scenario doctors must sharpen their clinical skill to make a clinical judgment and initiate therapy and advocate a diet plan to give maximum benefit to the patients. The ways and means of picking up those with clinical or subclinical B12 deficiency and the reasons and solutions to the problem will be discussed using the findings from our original studies and observations.

### **Speaker Biography**

PK Sasidharan is a Professor of Medicine and Former Head, Department of Medicine and division of Hematology, Government Medical college, Kozhikode, Kerala India; Former Chairman PG Board of studies, Kerala University of Health Sciences. Member, Editorial Board "Indian Journal of Hematology and Transfusion Medicine", PhD research Guide for University of Calicut, Was President Association of Physicians of India (API) Kerala State Chapter, was Scientific Advisory Committee Member, National Institute of Immuno Hematology, Mumbai, Former Dean Faculty of Medicine, University of Calicut; Was State President, Kerala Govt. Medical College Teachers Association and Former President Hypertension Society of India. MBBS from Calicut Medical College, best outgoing student, secured highest mark in General Medicine exam of the University of Calicut. MD General Medicine, from Post Graduate Institute of Medical Education and Research (PGIMER), Chandigarh and is cited in their website as one of its noted Alumni. Research in Medicine: Papers Published 96: Landmark studies on Vitamin D deficiency and SLE and developed the new criteria to diagnose SLE, "The Kozhikode Criteria".

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## **High intensity protocols implementation for acute lymphoblastic leukemia in a middle-income country setting: Multi-center experience in Cali, Colombia**

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**Background:** Acute Lymphoblastic Leukemia (ALL) is the most common and most curable childhood cancer. However, high variability of supportive care programs in low-and-middle income countries for the implementation of intensive treatments for acute lymphoblastic leukemia (ALL) persist and have been related to disparities in survival. In Cali, the third-largest city in Colombia, a protocol (T-15) inspired in the St. Jude's Total XV's protocol was implemented in December 2013. We describe ALL survival pre and post implementation of this protocol in Cali, Colombia.

**Methods:** We prospectively collected data from Cali's Childhood Cancer Surveillance System (VIGANCER), supported by "My Child Matters" and Colombian Association of Pediatric Hematology and Oncology (ACHOP). We included patients <15 years with newly-diagnosed ALL. We compared 5 year overall (OS) and event-free survival (EFS) from 2009-2013 (cohort A [CA]) to 2013-2018 (cohort B [CB]). We used Kaplan-Meier and Cox regression methodology for survival analyses and covariate adjusting.

**Results:** Six-hundred-and-thirty-four patients were included, CA 237, and CB 397. There were no significant differences between cohorts in age, sex, residence, insurance groups (public, semi-private), cell lineage type, testicular involvement,

or risk groups. Five-year OS between CA versus CB improved from 62% to 71% (CA vs. CB;  $p < 0.01$ ) and 5-year EFS increased from 53% to 72% (CA vs. CB;  $p < 0.01$ ). The OS and EFS gap between semi private and public health insurance decreased by 50% between cohorts, but still remained significant in multivariate analyses.

**Conclusions:** Both 5-year OS and EFS significantly improved in patients with ALL between these cohorts. This improvement could be attributed, in part, to high intensity protocols implementation, as well as enhancements in cancer care in Cali over the last 5 years, including expanded access to high-quality hospitals for patients with public insurance coverage, improved supportive care, better social support, and newly-implemented care navigation services.

### **Speaker Biography**

Ardila J has completed his fellowship of pediatric hematology/oncology at the age of 28 years from National University, Bogotá, Colombia. He is the president of board of directors of Pohema Foundation, Cali, Colombia and pediatric hematologist in Clinica Imbanaco, Cali, Colombia. He has over 10 years working for Colombian Pediatric Cancer and is member of VIGANCER working group awarded with the 2021 "Developing Paediatric Oncology Programme" SIOP Award.

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## **Coronavirus among acute diseases patients in Africa**

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The world has experienced several epidemics posing serious threat to global public health, including the 2002 severe acute respiratory syndrome (SARS) epidemic that caused 800 deaths out of about 8000 case. Health authorities across the world have been trying to contain the spread of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) via public awareness and contact tracing i.e, by identifying and isolating individuals at high risk of being positive, the present work is case report studying the relation between covid-19 among

acute diseases includes malaria parasite signs and symptoms with covid-19 and its effects.

### **Speaker Biography**

Abdelrahman Ibrahim Hussien has completed his bachelor at the age of 21 years from academy of health sciences. He is medical technologist at health insurance fund, He has published more than 3 papers in reputed journals and has been serving as an medical technologist at military hospital."

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## **Chakras' energy deficiency as the cause of bradycardia post chemotherapy to treat lymphoma**

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Medical Acupuncture and Pain Management Clinic, Brazil

**Introduction:** There are studies in the literature showing incidence of cardiovascular disease after use of chemotherapy in cancer patients.

**Purpose:** In this study, the author is showing that the use of chemotherapy in cancer patients can induce bradycardia due to chakras' energy centers deficient in energy.

**Methods:** Through one case report of 62-years-old patient that discovered lymphoma in inguinal region and underwent to chemotherapy session to treat the lymphoma condition. After this treatment, the patient declared that in one specific day, after trying to run doing some exercises, he noticed that his heart betting was not following his exercises (always only at 60 bet per minute) and that it was betting slowly. The patients went to treat his anxiety and depression with the author and she measured the chakras energy centers of this patient. Results: All his internal massive organs or chakras' energy centers were in the lowest level of energy, rated in one out of eight

**Conclusion:** Patients with cancer that is in treatment with

chemotherapy could have bradycardia due to chakras' energy centers deficient in energy, and the treatment replenishing this energy centers are very important to treat the symptoms and not the diseases.

### **Speaker Biography**

Huang Wei Ling, born in Taiwan, raised and graduated in medicine in Brazil, specialist in infectious and parasitic diseases, a General Practitioner and Parenteral and Enteral Medical Nutrition Therapist. Once in charge of the Hospital Infection Control Service of the City of Franca's General Hospital, she was responsible for the control of all prescribed antimicrobial medication and received an award for the best paper presented at the Brazilian Hospital Infection Control Congress in 1998. Since 1997, she works with the approach and treatment of all chronic diseases in a holistic way, with treatment guided through the teachings of Traditional Chinese Medicine and Hippocrates. Researcher in the University of São Paulo, in the Ophthalmology department from 2012 to 2013. Author of the theory Constitutional Homeopathy of the Five Elements Based on Traditional Chinese Medicine. Author of more than 60 publications about treatment of variety of diseases rebalancing the internal energy using Hippocrates thoughts.."

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## **Study of the role of homocysteine in the initiation of a thrombophilic state in patients with severe coronavirus infection**

### **Berger Inna**

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The study was conducted at the specialized multidisciplinary infectious diseases clinic for the treatment of coronavirus infection. The material was the blood of 60 patients in the intensive care units of the clinic with severe and extremely severe COVID-19, with lung damage from 30 to 90%. The control group consisted of 15 apparently healthy people, with no signs of thrombosis at present and in history. The study of hemostasis parameters was carried out on an ACL-TOP 350 coagulometer manufactured by International Laboratory (USA) and reagents from HemosIL (USA). In parallel, with shifts in the coagulation link of hemostasis, increased platelet aggregation was observed, which may be the result of an increase in homocysteine in the blood and its damaging effect on the vascular endothelium. Since it is known that homocysteine is able to "loosen" the endothelium, as a result of which platelets adhere to the damaged layers and the process of thrombus formation begins.

Laboratory data on homocysteine levels in patients with coronavirus infection

Index	Patients (n=60)	Control group (n=15)
Homocysteine 5.5-10.0 μmol/L	7.64 (Range from 22.65 to 1.44)	7.28 (Range from 11.55 to 4.2)

The homocysteine index was comparable in patients with Covid 19 and in the control group and did not have a significant difference; both values were within acceptable limits.

To continue our study of the effect of homocysteine levels on the development of thrombosis in covid patients, we decided to study it depending on the severity of the process. Patients were divided into 3 groups, depending on the degree of damage to the lung fields.

Changes in homocysteine levels depending on the degree of lung damage

Homocysteine 5.5-10.0 μmol/L	Average valut	Average valut	Maximum M±
Group 1 (n=20) with the degree of damage - 30-50%	9,34	19,0	4,58
Group 2 (n=25) with the degree of damage - 50-75%	6,15	10,68	1,44
Group 3 (n=15) 75% and above	7,88	22,65	3,56
Control group (n=15)	7,28	11,55	4,2

By analyzing the laboratory data obtained from patients with Covid 19 with varying degrees of severity of the process, we can state that homocysteine remains intact in the formation of thrombotic complications in this category of patients.

### **Speaker Biography**

Berger Inna received her PhD in Medical Sciences in 2020 from the Tashkent Medical Academy; in 2022 she received a senior researcher degree and is the head of the scientific department of hemostasis pathology at the Republican Specialized Scientific and Practical Medical Center for Hematology. He has more than 60 publications in local and foreign journals, has patents and is the author of a monograph on thrombosis.

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