

3rd Edition of
Global Congress on

Advances in
Gastroenterology
and Hepatology

JULY 11-12, 2022

PARIS, FRANCE

GASTRO-HEPATO 2022

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PROGRAM-AT-A-GLANCE

GASTRO-HEPATO
2022

DAY 1

JULY 11, 2022

Scientific Program

09:00-09:30 Registrations

09:30-10:00 Opening Ceremony

Sessions: Gastroenterology Treatment | Advances in Gastroenterology | Gastrointestinal Disorders | Endoscopy and Hepatology | Inflammatory Bowel Disease | Bariatric Surgery | Hepatitis B | Liver and Intestine Transplant | Kidney and Pancreas Transplant | Pediatric Gastroenterology

Distinguished Speaker Talks

10:00-10:25

Title: Single-cell transcriptional changes associated with drug tolerance inform combination cancer therapies

Elizaveta V. Benevolenskaya, *University of Illinois, USA*

10:25-10:50

Title: Inflammatory parameters as predictive factors for complicated appendicitis

Ana Cláudia Matos Ribeiro, *Centro Hospitalar Tâmega e Sousa, Portugal*

Refreshment Break 10:50-11:15

11:15-11:40

Title: Possible role of nuclear factor erythroid 2-related factor 2 in the development of human colon precancerous lesions

Michele Barone, *University of Bari Aldo Moro, Italy*

11:40-12:05

Title: The possibilities and reliability of 'Hepcidin inducer Laennec and Porcine' in the treatment of Hereditary Hemochromatosis and NASH complicating with type2 DM

Yuki HAMADA, *HAMADA Clinic for Gastroenterology and Hepatology, Japan*

12:05-12:30

Title: Alterations in Eosinophil's and $\gamma\delta$ T cells in the GI tract during peanut OIT

Sharon Chinthrajah, *Stanford University, USA*

12:30-12:55

Title: Physicians' perceptions about collaborating with speech-language pathologists for dysphagia treatment

Mitzi S. Brammer, *Saint Louis University, USA*

Group Photo

Lunch Break 12:55-13:35

13:35-14:00

Title: Vasopressin use in pediatric transplantation
Olga Wolke, *Stanford University School of Medicine, USA*

14:00-14:25

Title: Liver and kidney shortage. Alternatives for organ procurement: The market model and the automatic model
Marina Morla González, *University of Leon, Spain*

14:25-14:50

Title: Essential Oils of wild Algerian fennel: Chromatographic profile, Acute Toxicity, Antioxidant Activity, and Antimicrobial Behaviors
DAHMANI Karima, *University of Science and Technology Houari Boumediene, Algeria*

14:50-15:15

Title: Nano complex based on C60 fullerenes and pyrrole core reduces involvement of immune system in the development and progression of Colorectal Cancer
Iryna Byelinska, *Taras Shevchenko National University of Kyiv, Ukraine*

15:15-15:40

Title: Anti-inflammatory and antitumor effect of Tyrosine kinase inhibitor C60-MI-30H nanocomplex against chemically-induced Colon Cancer in rats
Nataliia Dziubenko, *Taras Shevchenko National University of Kyiv, Ukraine*

15:40-16:00

Title: Synthesis and biological properties of new purine isostere derivatives: oxazolo[4,5-d]-pyrimidines and pyrazolo[1,5-a][1,3,5]triazines
Yevheniia Velihina, *Institut National des Sciences Appliquées Rouen Normandie, France*

16:00-16:20

Title: Role of antibiotic prophylaxis on surgical site infection prevention in a low-risk population undergoing laparoscopic cholecystectomy: A randomized controlled study
Zaka Ullah Jan, *Khyber Teaching Hospital, Pakistan*

End of Day 1



DAY 2

JULY 12, 2022

Scientific Program

Oral Presentations

10:00-10:15

Title: Multi-modality imaging of Splenic masses: A rare case of inflammatory Pseudotumor-like Follicular Dendritic cell tumor and approach to differential diagnosis

Luyao Shen, *Stanford University, USA*

10:15-10:30

Title: Endoscopic Retrograde Appendicitis therapy in the management of Chronic Fecalith appendicitis in a patient with Ulcerative Colitis. The first human case report

Muhammad Zulqarnain, *Zhejiang Chinese Medical University, China*

10:30-10:45

Title: Spinal cord stimulation & Intrathecal therapy with Ziconotide: A solution for painful diabetic neuropathy?

Georgios K. Matis, *University of Cologne, Germany*

Poster Presentations

End of Day 2



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4TH EDITION OF GLOBAL CONGRESS ON ADVANCES IN GASTROENTEROLOGY & HEPATOLOGY

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SCIENTIFIC ABSTRACTS

DAY 1



3rd Edition of GLOBAL Congress on Advances in Gastroenterology and Hepatology

**JULY 11-12, 2022
PARIS, FRANCE**

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Single-cell transcriptional changes associated with drug tolerance inform combination cancer therapies

**Elizaveta V. Benevolenskaya, D. R. Principe,
B. Rana and A. Rana**

University of Illinois at Chicago, USA

Objectives: Resistance to chemotherapies and targeted therapies remains a pressing issue in clinical oncology. Revealing the mechanisms exploited by rare subpopulations of surviving cells is of critical clinical importance since there are no drugs that would target the tolerant cells during the initial robust response to targeted therapy or chemotherapy. Thus, developing successful precision medicine approaches targeting tolerant cells is urgently needed.

Scope: We set out to determine the spectrum of changes that occurs during treatment with targeted drug therapy or chemotherapy, and to identify the characteristics that could guide us in combination therapy. Our goal was to find a combination agent that would be targeting cell population/s that evolve rapidly under the drug.

Results: Development of drug tolerance proceeded through successive states that were characterized by specific markers. In combination with the EGFR inhibitors, crizotinib inhibited the emergence of a defined subset of tolerant clones, and scRNA-seq of patient lung tissues showed that the identified

top drugs were clinically relevant. A subset of gemcitabine-tolerant PDAC cells were enriched for calcium/calmodulin signalling. Using calcium channel blockers (CCBs) resulted in inhibition of pro-survival ERK signalling in vitro and markedly enhanced therapeutic responses to gemcitabine.

Methods: We performed treatment of established preclinical models of NSCLC and PDAC with targeted therapy or chemotherapy followed by single-cell RNA sequencing (scRNA-seq). We identified markers of drug tolerant states and used LINCS database and gene ontology analysis for prediction of small molecules targeting selective drug tolerant cell populations, which were functionally validated.

Conclusion: Prediction based on single cell gene expression data will allow for the identification of treatment strategies based on heterogeneity of cell population. These results offer new insights into a potential means of gemcitabine resistance and suggest that select CCBs may provide a clinical benefit to PDAC patients receiving gemcitabine-based chemotherapy.

Biography

Elizaveta V. Benevolenskaya is a Professor of Biochemistry and Molecular Genetics, the Director of University of Illinois Cancer Center Cancer Genomics Shared Resource (CGSR) and the Faculty Director of the University of Illinois at Chicago Genomics Research Core (GRC). Her research is aimed at better understanding of the mechanisms by which epigenetic factors affect cancer cell growth. She has been engaged in cancer research since 1999, working in the laboratory of William Kaelin, Jr. at the Dana-Farber Cancer Institute. Her lab has recently used transcriptome sequencing for single cell analysis in order to better understand the cell fate transitions during cancer drug resistance.



Inflammatory parameters as predictive factors for complicated appendicitis

**Ana Cláudia Matos Ribeiro¹, I. Romero¹,
A. Gonçalves¹, S. Costa¹, J. Barros¹, J. Silva²
and C. Pereira³**

¹Centro Hospitalar Tâmega e Sousa, Portugal

²Unidade de Saúde Familiar de Paredes, Portugal

³Hospital de Braga, Portugal

Introduction: Acute appendicitis is a major cause of acute abdomen. Although its diagnosis is clinical, it is often supported by complementary diagnostic tests. Sometimes, delay in diagnosis can lead to worsening of the clinical picture, resulting in a complicated acute appendicitis. Some series have studied some clinical and analytical parameters as possible predictors of complicated acute appendicitis.

Study design: A retrospective analysis of patients admitted for acute appendicitis and undergoing appendectomy between January 2014 and December 2017 was performed in order to assess the possible existence of preoperative analytical predictive factors for complicated acute appendicitis (such as leukocytosis, C-reactive protein and ratio between neutrophils and lymphocytes).

Results: 841 patients underwent emergency appendectomy during the analysed period. This initial sample was divided into two groups: Group 1 with patients with uncomplicated acute

appendicitis and Group 2 with patients with complicated acute appendicitis. Group 2's presentation age, duration of symptoms and hospital stay was significantly higher than Group 1. Regarding analytical parameters, the measurement of leukocytes, C-reactive protein and ratio between neutrophils and lymphocytes was significantly higher in patients with complicated acute appendicitis. After a multivariate analysis, it was found that only C- reactive protein was a good predictor of complicated acute appendicitis.

Conclusion: Several publications have studied and demonstrated the possible use of certain analytical parameters as predictors of complicated acute appendicitis. In our study, C- reactive protein proved to be a good independent predictor of complicated acute appendicitis and, therefore, when an assay of this protein exceeds 63.3mg/L, faster surgical approach should be considered due to the high probability of the presence of a complicated picture of this clinical entity.

Biography

Ana Cláudia Matos Ribeiro is a resident doctor of General Surgery in General Surgery Department of Centro Hospitalar Tâmega e Sousa, in Portugal. She got her Medicine Doctor's degree at Instituto de Ciências Biomédicas Abel Salazar.



Possible role of nuclear factor erythroid 2-related factor 2 in the development of human colon precancerous lesions

Michele Barone and **Lorenzo Polimeno**

University of Bari Aldo Moro, Italy

Background: Increased levels of oxidative stress and cell inflammation contribute to colorectal cancer (CRCs) onset and development. Nuclear factor-erythroid 2-related factor 2 (Nrf2) and its controlled growth factor *erv1*-like (*Gfer*) gene regulate redox-sensitive and anti-inflammatory mechanisms, respectively, i.e. two important aspects that can contribute to promote cancer development.

Aim: We evaluated Nrf2 and *Gfer* RNA expression and Nrf2 protein expression in colon mucosa in order to establish their possible involvement in the early stage of colon carcinogenesis.

Methods: A total of 40 subjects were enrolled after histological evaluation of their colon biopsies. They included 20 subjects with a sporadic colorectal adenoma (SpCA group) and 20 without precancerous lesions (controls). Biopsy samples were processed for gene expression analysis and protein expression, using Real-time PCR and immunofluorescence confocal microscopy, respectively.

Results: Gene expression analysis revealed a statistically significant reduction of Nrf2 ($p=0.007$) and *Gfer* ($p=0.003$) mRNA expression in SpCA tissues compared to normal mucosa obtained from controls. Furthermore, immunofluorescence analysis confirmed a relevant reduction of Nrf2-related signal in SpCA tissue compared to normal tissue from controls.

Conclusions: The present preliminary data support the hypothesis that the reduction of anti-oxidative and anti-inflammatory defenses could contribute to the carcinogenetic process. In this contest, Nrf2 and *Gfer* could represent new possible biological markers to include in the evaluation of colonic adenomatous lesions in order to implement preventive strategies. Future studies including colonic adenomatous lesions at different evolutionary stages are necessary to confirm the potential use of Nrf2 as marker/risk factor for CRC development.

Biography

Michele Barone graduated in experimental physics from the University of Bari (Italy) in 1974. Following experimental work at CERN, as a Physics Fellow in the group of Carlo Rubbia, he held teaching and research positions in Switzerland, Italy (University of Perugia and INFN National Laboratory of Frascati), and in Greece (Institute of Nuclear and Particle Physics at the National Scientific Research Center Demokritos and University of Athens). His interest in experimental work led to managerial positions in international companies manufacturing systems for medical and scientific research. He has been member of the NESTOR Collaboration and, even if retired a few years ago, he is an active member of the CMS Collaboration. During his career he authored about a hundred and fifty publications and was involved in the organization of several international congresses, for which he was the Editor of the related proceedings with Elsevier, Plenum, and World Scientific. He has been the Industrial Liaison and Technology Transfer Officer for Greece at CERN and recently appointed by the CERN Alumni Network as Advisor Liaison with industry and Contact Person with the Hellenic Society for the Study of the High Energy Physics.

The possibilities and reliability of 'Hepcidin inducer Laennec and Porcine' in the treatment of Hereditary Hemochromatosis and NASH complicating with type2 DM

Yuki HAMADA¹ and Eichi HIRANO²

¹HAMADA Clinic for Gastroenterology and Hepatology, Japan

²Japan Bio Products Co. Ltd., Japan

Human hepcidin made by hepatocytes controls extracellular iron by regulating its intestinal absorption, recycling by macrophages, and release from storage spaces. Recent studies indicate that hepcidin deficiency underlies most known forms of Hereditary Hemochromatosis (H.H).

Case H.H: 44years-old male patient who developed Type2 diabetes mellitus(T2DM) had elevated serum ferritin (SF) level (10,191ng/ml). Liver biopsy revealed remarkable iron deposition in hepatocytes and relatively advanced fibrosis (F3). Chromosomal analysis confirmed the presence of transferrin receptor type 2(TfR2) mutations. Infusion with Laennec has been done for 84 months as the substitute for the repeated phlebotomy. At the end of the treatment, the serum ferritin level was decreased to 428.4ng/ml (significantly lower than the started level). HbA1c also improved with the same or lower dose of insulin

(8.8→6.8%). Plural liver biopsies revealed remarkable improvements in the grade of both iron deposition and fibrosis (F3→F1) of the liver tissue.

The discovery of hepcidin and its role in iron metabolism could lead to novel therapies for H.H. The placenta-derived Laennec (parenteral)and Porcine (oral) which act as the 'hepcidin inducer' actually improved iron overload of H.H patient without utilizing sequential phlebotomy, which suggests the possibility of not only improving the prognosis of H.H (type 1,2,3 most common) but also ameliorating the complications such as T2DM, liver fibrosis (LC) and hypogonadism (ED).

Laennec and Porcine can completely replace the continuous venesection for H.H and may also improve other iron-overloading disorders such as NASH complicating with T2DM, which showed hyperferritinemia, insulin resistance and iron deposition in the hepatocytes.

Biography

Yuki HAMADA completed his graduation from School of Medicine in 1975 at Hokkaido University. He is a Medical trainee at Osaka Medical Center for Cancer and Cardiovascular Disease, Japan. From 1977-1989 he worked as a lecturer from Department of Gastroenterology and Hepatology at Hokkaido University. He is a research Fellow from Faculty of Life Science under (Prof. F. L. Bygrave) from Australian National University. From 1989-1998 he is a Manager for Gastroenterology section at National Nishi-Sapporo hospital. Currently he is working as a President at HAMADA Clinic for Hepatology and Gastroenterology.



Alterations in Eosinophil's and $\gamma\delta$ T cells in the GI tract during peanut OIT

Sharon Chinthrajah

Stanford University, USA

Background & Aims: Gastrointestinal side effects including eosinophilic esophagitis (EoE) are common during oral immunotherapy (OIT). $\gamma\delta$ T cells play a significant role in gastrointestinal tissue homeostasis and repair and have been IgE and Th2-mediated effects suggesting their involvement in allergy. We aimed to characterize gastrointestinal eosinophilic and $\gamma\delta$ T cell responses to peanut OIT.

Methods: Twenty adults with IgE-mediated peanut allergy were randomly assigned to receive peanut OIT (n = 15) or placebo (n = 5); 1 additional subject withdrew before randomization. Serial gastrointestinal biopsies were collected at baseline (n = 21, 0 weeks), following dose escalation (n = 10, 52 weeks), and during the maintenance phase (n = 11, 104 weeks). We performed immunohistochemical analyses of eosinophil peroxidase deposition, quantified using automated image analysis. $\gamma\delta$ T cells were isolated from 3 patients and RNA was extracted with Trizol for RNA-Seq

Results: At baseline, no subjects reported current gastrointestinal symptoms. OIT induced

or exacerbated esophageal eosinophilia (EE) at 52 weeks in most subjects. EE in the OIT group corresponded with significant increases in EoE histologic scoring system scores and deposition of eosinophil peroxidase. In 4 of 6 participants (67%), OIT-induced EE and gastrointestinal eosinophilia resolved by the end of the maintenance phase. Gastrointestinal symptoms were not clearly associated with EE or gastrointestinal eosinophilia. OIT induced the expression of genes related to Notch, B-cell receptor, and TGF- β signaling pathways in $\gamma\delta$ T cells.

Conclusions: In this pilot study, we found that peanut OIT-induced EE and gastrointestinal eosinophilia are usually transient and are not always associated with gastrointestinal symptoms. Peanut OIT also induced transcriptional changes in $\gamma\delta$ T cells, suggesting that $\gamma\delta$ T cells are located at the intersection of OIT-induced barrier function and immune regulation. Clinicaltrials.gov no: NCT02103270.

Biography

Sharon Chinthrajah joined the Sean N. Parker Center for Allergy & Asthma Research at Stanford in August 2013 and established herself as a translational researcher investigating immune mechanisms in food allergy and asthma under the mentorship of Dr. Kari Nadeau. She is the Director of the Clinical Translational Research Unit of the Sean N Parker Center for Allergy and Asthma Research where she leads the team to conduct novel and impactful Phase 1-3 studies in food allergy, asthma, allergic rhinitis, and atopic dermatitis. She received her MD from Drexel University College of Medicine, completed her Internal Medicine training and a chief residency at California Pacific Medical Center, and subspecialized in Pulmonary/Critical Care and Allergy/Immunology at Boston Medical Center.

Physicians' perceptions about collaborating with speech-language pathologists for dysphagia treatment

Mitzi S. Brammer
Saint Louis University, USA

Swallowing disorders affect over 15 million people across the United States. Dysphagia is a complex disorder and occurs co-morbidly with other diagnoses. As such, there is frequent collaboration amongst healthcare professionals, including speech-language pathologists, to appropriately assess and manage the dysphagia. The objective was to explore the collaboration between speech-language pathologists and physicians who work with patients diagnosed with dysphagia. To meet this objective, the researchers surveyed otolaryngologists and gastroenterologists about their collaborative relationships and

interprofessional practice in general as it relates to the assessment and management of dysphagia. The researchers used frequency data analysis and content analysis to analyze the data collected. Physicians surveyed who treat patients with dysphagia do see benefit in interprofessional practice. They also find value in the presence of a speech-language pathologist on the interprofessional team. However, respondents report either the absence of or uncertainty about training and expectations of medical professionals to participate on interprofessional teams.

Biography

Mitzi S. Brammer is a certified speech-language pathologist. She is an associate professor in the Speech, Language & Hearing Sciences department at Saint Louis University as well as the graduate program director. Her research interests include interprofessional practices, inclusive practices in higher education regarding equity and diversity, language and literacy, and generational differences/resilience. She has published numerous articles and presented across the country and the world on these topics.



Vasopressin use in pediatric transplantation

Olga. Wolke and J. Mendoza

Stanford University School of Medicine, USA

Introduction: Vasopressin is a potent vasoconstrictor used in treatment of the adult septic shock. Its use in paediatric transplantation remains controversial.

Arginin-Vasopressin (AVP) facilitates vasoconstriction by stimulating primarily V1 receptors on vascular smooth muscles. Vasopressin acts on V1a receptors that are more prevalent in the portal vein compared to the hepatic artery. This leads to reduced blood flow in the portal vein while flow in the hepatic artery remains unchanged. In an adult study of the cirrhotic patients animal model of portal hypertension, AVP increased hepatic vascular resistance resulting in a 30% reduced reduction in hepatic flow (1cite reference) by30% by increasing intrahepatic vascular

resistance. Since increased high portal blood flow impairs liver regeneration and adversely affects graft survival, we propose that the d that use of AVP may be beneficial in the setting of the liver transplantation.

Method: We retrospectively reviewed 183 charts records of the pediatric patients who underwent liver transplantation at in our institution from 2014-2020. 84 Eighty-four of these patients had received AVP administration during the perioperative period, and 99 patients did not. We compared 30-days and 1-year graft survivals in between these 2 groups.

Results: Twelve of 183 patients for liver transplant experienced graft loss within 1-year post transplant. Nine of 84 patients who received vasopressin perioperatively

	TOTAL	30-day Graft Loss	1-year Graft Loss
Vasopressin Group	84	5 (0.6%)	4 (0.5%)
No Vasopressin Group	99	1 (0.1%)	2 (0.2%)

12 of the patients had graft loss.

Vasopressin Group

Total = 84 Graft loss in 30 days-9, Graft loss in 1 year-4

30d graft survival = 84 -5 = 79 (of 5 with 30d graft loss - only 1 had patient survival > 30d: graft loss at pod 13 and death within 60 days)

had graft loss within 1 year compared to 3 of 99 patients who did not receive vasopressin perioperatively. In the vasopressin group, 7 of 9 patients lost the donor graft due to patient death as compared to the no vasopressin group, where 3 of 3 patients lost the donor graft due to patient death.

1 yr. graft survival - $79 - 4 = 75$ (of 4 with 1 yr. graft loss - only 1 survived > 1 yr., graft loss was from chronic rejection and he was retransplanted).

No vasopressin group:

Total = 99 Graft loss in 30 days - 1 Graft loss in 1 year - 2

30d graft survival - $99 - 1 = 98$ (1 from PGNF with death within 30d of transplant)

1 yr. graft survival - $98 - 2 = 96$ (2 graft losses at 1 yr. associated with patient death - 1 recurrent hepatoblastoma, 1 leukemia after OLT).

Discussion: High portal flow impairs liver regeneration and could lead to a graft loss. One of the strategies to protect graft survival is to minimize blood inflow through portal vein while maintaining flow through portal artery. AVP maybe better agent to do so than traditionally used epinephrine and norepinephrine, since they reduce flow in both

portal vein and hepatic artery. Vasopressin acts on V1a receptors that are more prevalent on a portal vein side, thus its effect on a portal vein is more pronounced than on a hepatic artery. This leads to decreased of the blood flow through the portal vein while flow through hepatic artery remains unchanged.

Conclusion: Initial use of Vasopressin AVP in pediatric liver transplantations at in our institution was reserved for to significantly sicker higher acuity patients. Over time with understanding of its potential benefits on a graft survival its use has become more frequent. More recently, AVP use has been used for most patients. Thought While there was more graft loss in the an AVP group in at 30 days and 1 year, it was not statistically significant and, it this could be attributed to the severity of patient's illness at the presentation and none to the use of AVP time of transplantation. Our data indicates suggests that use of AVP in a pediatric liver transplantation is not inferior to the traditional therapy with Dopamine and Epinephrine not associated with increased graft loss within the first year after transplantation. Further study is warranted to explore if perioperative use of AVP improves graft and patient outcomes in pediatric liver transplantation.

Biography

Olga Nella Wolke is a Pediatric Anesthesiologist at Lucille Packard Children's Hospital at Stanford. She provide Anesthesia for children with various diseases. Her main work is clinical with special interest is in Anesthesia for a patients undergoing solid organ transplantation.



Liver and Kidney shortage. Alternatives for organ procurement: The market model and the automatic model

Marina Morla-González
University of León, Spain

Organ transplantation is one of the most effective therapies after organ failure. The most commonly post mortem transplanted organs in Europe and in the United States are liver and kidneys. Despite the fact that liver and kidneys can be removed not only on the basis of brain death criteria but also on the basis of circulatory death criteria, a higher mortality rate is still observed in liver or kidney waiting lists in most of the countries. It has been suggested that organs harvested on circulatory death criteria may have inferior graft and be less successful for recipient survival than those harvested on brain death criteria. Thus, the scientific community continues to explore ways to bridge the gap between organ demand and supply in order to reduce the deaths, especially on liver and kidney waiting lists. There are many factors affecting the rate of organs procured for transplantation: the implemented organ

procurement model, individual beliefs, lack of understanding, decisional capacity of the family in the practice against the individual's expressed will, etc. In the literature, it is been suggested that the implemented organ procurement model is one of the key factors in actual organ donation rates, since it can allow for a higher consent rate, thus increasing the potential donor pool. This contribution explores the results of the current organ donation model when comparing it with the potential results provided by a market model as well as those provided by a hypothetical confiscatory or automatic organ procurement model. Between these two alternatives, the automatic organ procurement model seems to be the one that proposes a potentially more appropriate solution to narrow the gap between the demand and supply of liver and kidney. However, this model raises legal and ethical issues that are difficult to address.

Biography

Marina Morla González is an assistant lecturer in the Department of Public Law and a PhD candidate in Law at the University of León (Spain). Marina completed her legal training with a Master's Degree in Health Law and a Master's Degree in Law, where she was awarded for the best Master's thesis on legal and ethical issues on organ transplantation.

She teaches subjects in the Bachelor's Degree in Law, Master's Degree in Cybersecurity Law and Bachelor's Degree in Biotechnology at the University of León. He has also taught several courses on biolaw and bioethics at university level. She has participated in dozens of Conferences as speaker around the globe. She has done several research stays in different Universities and Research Centers, among them, the Radboud University (The Netherlands), or the Oxford Uehiro Center for Practical Ethics (University of Oxford, UK) where she is now developing a research on the application of digital pills for chronic patients.

Essential Oils of wild Algerian fennel: Chromatographic profile, Acute Toxicity, Antioxidant Activity, and Antimicrobial Behaviors

DAHMANI Karima¹, Houria Moghrani¹, Nahla Deghbar¹, Salima Ouarek², Karim Allaf³ and Karim Arab⁴

¹University of Science and Technology Houari Boumediene, Algeria

²Algerian Research and Development Centre, Algeria

³La Rochelle University, France

⁴University of Boumerdes, Algeria

The present study deals with the characterization of essential oils from umbels and seeds of Algerian wild (bitter) fennel (*Foeniculum vulgare Mill. Var vulgare*) by determining the chromatographic profile, lethal dose (LD50), and the antioxidant and antimicrobial activities of the seed-based essential oils. We performed the extraction of essential oils (EOs) through hydrodistillation using Clevenger for 3.5 and 6 h for the umbels and seeds, respectively. GC/MS analyses of fennel EOs showed that fennel was rich in different oxygenated monoterpenes compounds. However, while fenchone was the main compound in fennel seed EOs (FSEO), fennel umbel EOs (FUEO) mainly enfold α -pinene, o-cymene, sylvestrene, fenchone, Endo-fenchyl acetate, and carvacrol. In mice, the acute toxicity study of FSEO showed a lethal dose (LD50) of 4.9085 ± 0.1213 g/kg body weight. The acute

toxicity study of FSEO showed a lethal dose (LD50) of 4.9085 ± 0.1213 g/kg body weight in mice. Based on the free radical scavenging method using BHT as a positive control, the IC50 values were 9.9658 ± 0.057 mg/mL and 0.4570 ± 0.0456 mg/mL for FSEO and BHT, respectively. The study of antimicrobial activity in two gram-negative bacteria: *Escherichia coli* (ATCC 8739), *Pseudomonas aeruginosa* (ATCC 9027), and one gram-positive bacterium *Bacillus subtilis* (ATCC 6633), as well as two fungal strains, *Candida albicans* (ATCC 10,231), *Saccharomyces cerevisiae* (ATCC 9763), revealed that the fungal strains were more susceptible to FSEO and showed a significant fungicidal effect. The results of this study highlight the high quality of Algerian wild fennel and the possibility of recovering it for use in the pharmaceutical, cosmetic, and food industries.

Biography

DAHMANI is a Ph.D. student in Pharmaceutical Process Engineering at the USTHB University of Algiers (Algeria). After his Engineer's graduation in the same discipline at the same university, she got his national exam to access the Magister formation. In this formation, she conducted research work and studied the antimicrobial activities of essential oils (EOs) of two fennel species. She has ensured an education in process engineering for seven months (2013) at the Lycee (Algeria). She ensured a vacation charge at the USTHB University (September 2013-November 2018) and at the UBS University in France (March 2019-March 2021). She participated as a speaker in national and international seminars and contributed to two work publications. Dahmani is well known for her perseverance, high and facile adaptation aptitude, good sense of communication, and scientific and social relationship qualities. Currently, DAHMANI is preparing for the defense of his thesis.

Nano complex based on C60 fullerenes and pyrrole core reduces involvement of immune system in the development and progression of Colorectal Cancer

Iryna Byelinska¹, N. Dziubenko¹, Y. Savych¹,
 M. Kravchenko¹, T. Dovbynychuk¹, T. Rybalchenko¹,
 O. Khilya¹, D. Milokhov¹ and H. Kuznietsova²

¹Taras Shevchenko National University of Kyiv, Ukraine

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Nano complex 3- $\{[4\text{-chloro-1-(4-chlorobenzyl)-2,5-dioxo-2,5-dihydro-1H-pyrrole-3-yl]amino\}$ phenyl 46,6]-phenyl-C61-butanoate (C60-MI-3OH) based on C60 fullerenes and multi-kinase inhibitor pyrrole derivative could be a rationale for treatment of inflammatory and cancer disease because of C60 fullerenes ability to scavenge free radicals, and pyrrole derivative's regulatory activity towards immune cells. Thus, therapeutic potential of C60-MI-3OH as a regulator of immune cells involvement in chemically induced colon carcinogenesis was investigated

Studies were conducted using 48 Wistar male rats. Colon cancer was simulated by 20 weekly injections of 1,2-dimethylhydrazine (DMH, 20 mg/kg) with subsequent tumour development for 7 weeks. C60-MI-3OH was administered intraperitoneally at doses 1, 0.2, 0.04 mg/kg during 21-27 weeks of experiments. 5-fluorouracil was used as a reference.

Rats experienced colon cancer had absolute and relative spleen weight enlargement (by 29% and 31%) and demonstrated direct correlation with tumor number, average and total tumor volume, which could evidence an involvement

of spleen's tissue in disease progression. Blood lymphocytes count decreased by 27% and indirectly correlated with tumor number and total tumor volume, proving immune cells contribution to tumor growth. Furthermore, blood neutrophils and monocytes counts increased twice and correlated with tumor number and the total tumor volume. Along with total nucleated bone marrow cells decrease by 39% it could indicate these cells active migration toward neoplastic tissue.

C60-MI-3OH reduced systemic inflammation in cancer-experienced animals, normalizing blood neutrophils and monocytes number with simultaneous reducing of colonic tumor number (by 200%) and total tumor volume (by 64%). Compound seemed to abolish lymphocytes involvement in tumor progression. On the contrary, C60 fullerenes and pyrrole derivative alone had less expressed effects in higher doses, and 5-fluorouracil while reducing total tumor volume caused development of life threatening neutropenia.

Thus, complexation of multi-kinase inhibitor pyrrole derivative with C60-fullerenes potentiated the efficacy of both components.

Biography

Iryna Byelinska graduated from Taras Shevchenko National University of Kyiv, Kyiv, Ukraine (Master's degree in biology, specialization in cytology, histology and embryology). She has 15 years' experience in Haematology Department, Institute of Clinical Radiology, National Research center for Radiation Medicine. From 2006-2017 Researcher, Senior Researcher, Educational and Scientific Center "Institute of Biology and Medicine", Taras Shevchenko National University of Kyiv, Kyiv, Ukraine. In 2017 she got Doctor Degree for Biological Sciences, specialty cytology, cell biology, histology. Her thesis is on "Hematological effects of antitumor and ant anemic compounds maleimide derivative and heteropolynuclear complexes". From 2017 till now she is working as an Associate Professor in the Department of Fundamental Medicine, Educational and Scientific Center "Institute of Biology and Medicine" Taras Shevchenko National University of Kyiv, Kyiv, Ukraine.

Anti-inflammatory and antitumor effect of Tyrosine kinase inhibitor C60-MI-3OH nanocomplex against chemically-induced Colon Cancer in rats

Nataliia Dziubenko¹, I. Byelinska¹, T. Dovbynchuk¹, I. Golub¹, O. Khilya¹, D. Milokhov¹, H. Kuznietsova² and A. Kryvosheiev³

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Inflammatory bowel disease (IBD), including ulcerative colitis, is one of the most common pathologies of the digestive system. Complexes of C60 fullerenes with cytostatics have a stronger biological effect than cytostatics themselves and, importantly, lower overall toxicity. That is, it is suggested that the nanostructure based on C60 fullerenes and MI-1 - C60-MI-3OH - may combine anti-inflammatory and anti-tumor properties with low overall toxicity.

Methods: Colonic acute inflammation was simulated in female Wistar rats by intrarectal instillation of 5% acetic acid (AA), C60-MI-3OH was administered in dose range 0.2-5 mg/kg per os or intraperitoneally daily during 3 days starting in 24h after AA application. Colon cancer was simulated in male Wistar rats by 20 weekly injections of 1,2-dymethylhydrazine (DMH), C60-MI-3OH was administered during following 7 weeks daily in dose range 0.04-1.0 mg/kg daily intraperitoneally.

Results: It was shown that C60-MI-3-OH revealed anti-inflammatory properties against

acute colonic inflammation, as evidenced by the reducing the colon injury score and decreasing the permeability of colon mucosa down to control level. It should be noted, that C60-MI-3OH anti-inflammatory activity was dose-dependent in case of per os administration, but reversed in case of intraperitoneal one. Antitumor activity against colon cancer was suggested by decreasing the number of tumor nodes (by 34-64%) and tumor lesions total area (by 54-72%). Then, we demonstrated that C60-MI-3OH partially restored liver function, as evidenced by normalization of most liver enzymes in blood serum and liver morphology in case of both colonic acute inflammation and carcinogenesis.

That is, complex nanostructure C60-MI-3OH could inhibit acute colonic inflammation and colon carcinogenesis and partially restore liver state, however demonstrating adverse effects and skin toxicity in high doses. The main mechanisms of C60-MI-3OH action could include its ability to block EGFR and VEGFR and to realize antioxidant properties.

Biography

Nataliia Dziubenko did his fellowship from 2004-2008 from Taras Shevchenko National University of Kyiv (Educational scientific center "Institute of Biology"), Ukraine. She has done his PhD in Biological Sciences in specialization of Physiology of human and animal. From 2008 to Present she is working as a department assistant in the department of molecular biotechnology and bioinformatics of Taras Shevchenko National University of Kyiv, Ukraine. She has done 88 publications in scientific journals, more than 30 abstracts published in journals and conference proceedings with 5 patents of invention.

Synthesis and biological properties of new purine isostere derivatives: Oxazolo [4, 5-d]-pyrimidines and pyrazolo[1,5-a] [1,3,5]triazines

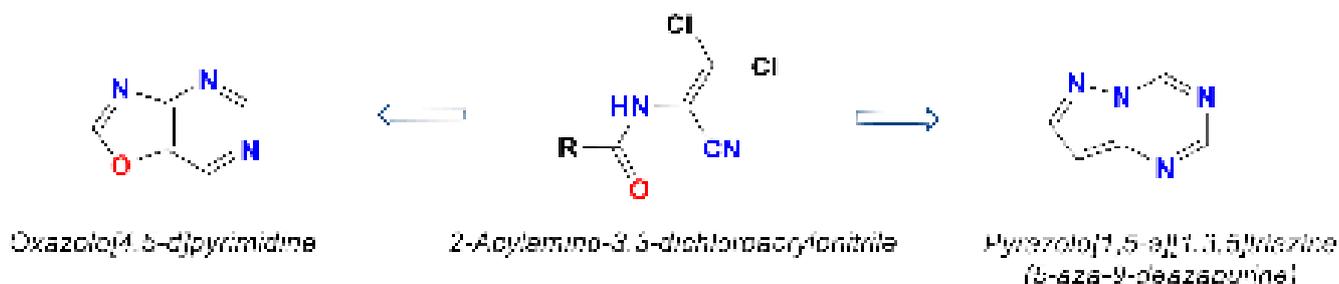
Yevheniia Velihina^{1,2}, S. Pilyo¹, V. Zhyrnov¹ and V. Brovarets¹

¹V. P. Kukhar Institute of Bioorganic Chemistry and Petrochemistry, Ukraine

²Institut National des Sciences Appliquées Rouen Normandie, France

Oxazolopyrimidines and pyrazolotriazines are purine bioisosteres, so their synthesis and research are of great interest in the field of medicinal chemistry. Due to their purine-like structure, they are able to act as co-factors, substrates or mediators in the functioning of many proteins, which cover half of the drug targets, primarily enzymes and receptors.

We have proposed convenient synthetic approaches for obtaining individual representatives of oxazolo[4,5-d]pyrimidines and pyrazolo[1,5-a][1,3,5]triazines based on original acyclic reagents, which ensures their availability and the possibility of introducing pharmacophore groups during the design of potentially bioactive compounds of a certain structure. Thus, the synthesis of new oxazolo[4,5-d]pyrimidine derivatives is based



on the conversion of 2-acyl-amino-3,3-dichloroacrylonitriles into the corresponding oxazolones, which interacting with amidines give imidazolones. Their recyclization leads to cyclocondensation with the formation of oxazolopyrimidine framework. Its subsequent functionalization gives products with the desired properties.

For the synthesis of pyrazolo[1,5-a][1,3,5]triazine derivatives, the strategy of annelation the 1,3,5-triazine ring onto a pyrazole cycle was used. Within the framework of this approach, we have developed an original

method for the synthesis of previously unknown 2-dichloro-methyl-substituted pyrazolo[1,5-a][1,3,5]triazines based on the cyclocondensation of dichloroacrylonitriles with 5-aminopyrazoles.

Among the synthesized oxazolopyrimidine and pyrazolotriazine derivatives, compounds with anticancer and antiviral potential were found. Success in the development of new bioactive compounds constructed using these heterocyclic scaffolds is expected to grow steadily.

Biography

Yevheniia Velihina was born in Chernivtsi, Ukraine (1994) and obtained a Master degree Chemistry at Yuriy Fedkovych Chernivtsi National University. She performed research on Biginelli-products synthesis as antioxidant compounds under the supervision of Prof. O. Liavynets in 2017. Subsequently, she joined a Ph.D. project on medicinal scaffolds with Prof. V. Brovarets as promoter at V.P. Kukhar Institute of Bioorganic Chemistry and Petrochemistry NAS of Ukraine. Her research interests include heterocyclic chemistry – mainly oxazoles, oxazolopyrimidines and pyrazolotriazines – with medicinal relevance. She is currently working as postdoctoral researcher in the COBRA laboratory under guidance of Prof. P. Jubault and Prof. T. Poisson (INSA Rouen Normandie). Yevheniia's work encompasses the Rh-catalyzed asymmetric synthesis of fluorine-containing cyclopropanes.

Role of antibiotic prophylaxis on surgical site infection prevention in a low-risk population undergoing laparoscopic cholecystectomy: A randomized controlled study

Zaka Ullah Jan¹, Kaleem Ullah², Abdul Wahab Dogar², Hafiz Bilal², Ameer Hamza², Muhammad Junaid Tahir³, Muhammad Sohaib Asghar⁴ and Zohaib Yousuf⁵

¹Khyber Teaching Hospital, Pakistan

²Pir Abdul Qadir Shah Jilani Institute of Medical Sciences, Pakistan

³Lahore General Hospital, Pakistan

⁴Dow University of Health Sciences, Pakistan

⁵Hamad Medical Corporation, Qatar

Objective: To compare the incidence of surgical site infections (SSIs) in low-risk patients undergoing laparoscopic cholecystectomy (LC) with pre-operative antibiotics versus no pre-operative antibiotics administration.

Study design: Randomized controlled study.

Setting: Hepatobiliary department, Pir Abdul Qadir Shah Jeelani Institute of Medical Sciences, Pakistan, from July 1, 2018, to Jun 30, 2021.

Methods: This is a prospective, open-label, randomized study. Individuals scheduled for laparoscopic cholecystectomy who met the inclusion requirements were randomly assigned to two groups. Group A patients received pre-operative antibiotics (intravenous cefazolin 2-g), and group B patients were operated on without administration of pre-operative antibiotics.

Post-operatively, patients were studied for the occurrence of SSIs for 30 days.

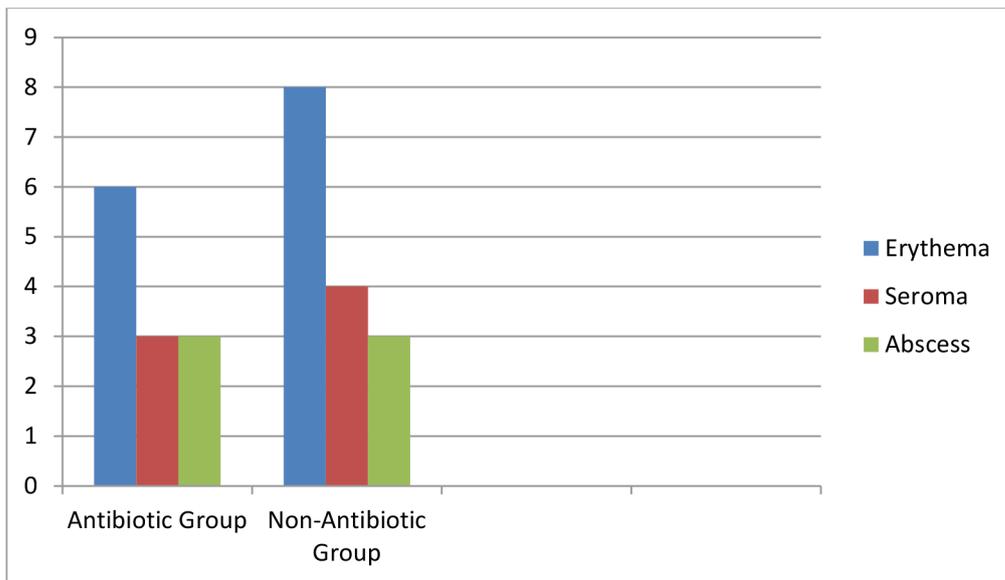
Results: The mean age of patients in group A was 40.6 + 5.2 years, while group B was 41.04 + 5.03. The male to female ratio was 1:3. Gender distribution showed female dominance in both groups, i.e., 78.74% in group A and 76.80% in group B. The incidence of SSI in group A was 3.98%, while in group B was 4.9% (p-value = 0.584). No statistical significance was found while comparing both groups' age, gender, operative duration, and hospital stay.

Conclusion: This study showed comparable results between both groups, and prophylactic antibiotics have no impact in preventing SSIs. In low-risk individuals undergoing laparoscopic cholecystectomy, the incidence of SSIs is quite low, and prophylactic antibiotics can be avoided.

Table showing comparison of SSIs in both groups

SSI	Group A(Antibiotic Group)	Group B(Non Antibiotic Group)	P-Value
Erythema	6 (1.99%)	8 (2.61%)	0.584
Seroma	3 (0.99%)	4 (1.30%)	
Abscess	3 (0.99%)	3 (1.17%)	
Total	12 (3.98%)	15 (4.9%)	

Fig: Showing comparison of SSIs in both groups



Biography

Zaka Ullah Jan completed his MBBS at the age of 24 years from Khyber Medical College (Khyber Medical University) Peshawar, Pakistan. He completed his FCPS General Surgery residency from the department of General Surgery, Khyber Teaching Hospital Peshawar, a tertiary care hospital. He is member of the Royal College of Surgeons Edinburgh, UK. He has interests in research work related to general surgery apart from clinical work and has published articles in national & international journals.

ORAL PRESENTATIONS

DAY 2



3rd Edition of GLOBAL Congress on Advances in Gastroenterology and Hepatology

**JULY 11-12, 2022
PARIS, FRANCE**

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**Multi-modality imaging of Splenic Masses:
A rare case of inflammatory Pseudotumor-
like Follicular Dendritic cell tumor and
approach to differential diagnosis**

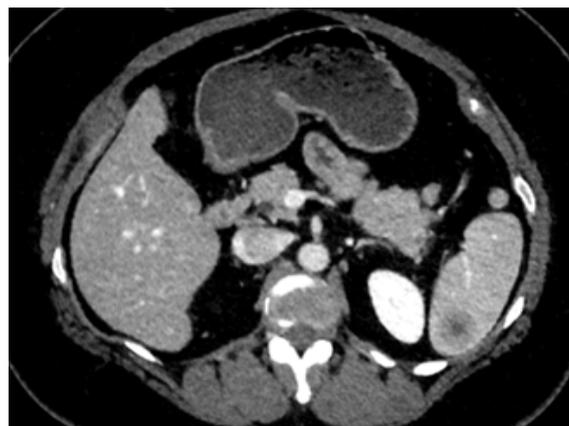
**Luyao Shen¹, Philip Bulterys¹, Lindsey Negrete¹
and Andrew Nguyen²**

¹Stanford University, USA

²Lake Erie College of Osteopathic Medicine, USA

We will introduce the lecture with a rare case of an inflammatory pseudotumor-like follicular dendritic cell tumor of the spleen in a 44-year-old woman who presented with nonspecific abdominal pain (image below). We will discuss multi-modality imaging evaluation of this splenic mass, which included CT, MRI, and PET/CT. The differential diagnosis of a splenic mass on imaging includes benign masses such as hemangioma, hamartoma, lymphangioma, abscess,

sclerosing angiomatoid nodular transformation (SANT) and simple cyst. Often it is difficult to differentiate benign masses from malignant tumors such as angiosarcoma and metastasis. When there are multiple splenic masses, the differential diagnosis includes sarcoidosis, lymphoma, and metastases. The purpose of the lecture is to showcase different pathology of splenic masses on imaging and discuss approach to develop a differential diagnosis.



Biography

Luyao Shen, graduated from University of Cincinnati College of Medicine (Doctor of Medicine), was trained at University of California Los Angeles Medical Center in diagnostic radiology (residency) and in abdominal imaging and cross-sectional interventions (fellowship). She started her academic career at the Stanford University College of Medicine in 2018 after finishing fellowship. She is currently a clinical assistant professor in body imaging (department of Radiology) and the co-medical director of point of care ultrasound. One of her expertise is ultrasound and ultrasound-guided procedures. Genitourinary and gynecologic imaging are her areas of clinical interest and research. Besides being an excellent clinician, Dr. Shen is also an active educator, a member of multiple national radiology societies, and serves on multiple national committees.



Endoscopic retrograde appendicitis therapy in the management of Chronic Fecalith appendicitis in a patient with ulcerative colitis. The first human case report

Muhammad Zulqarnain¹ and LYU. WEN²

¹Zhejiang Chinese Medical University, China

²Hangzhou First people's Hospital, China

Aims: To evaluate the diagnostic and treatment value of Endoscopic Retrograde Appendicitis Therapy (ERAT) for chronic fecalith appendicitis complicated with active ulcerative colitis disease. The purpose of this procedure was to preserving the appendix and its function. According to the previous research on ERAT, It has been proved to be effective and safe in managing acute appendicitis and chronic appendicitis. In patients with ulcerative colitis, once they develop appendicitis. It's uncertain whether appendectomy is suitable for such patients. Until so far, relevant research is limited. Many studies have shown that surgery cannot bring benefit for a patient with ulcerative colitis, due to the fact that surgery can cause higher risks of complications such as fistula, infection etc.

Methods: This procedure was performed on a patient who suffered Ulcerative colitis complicated with chronic fecalith appendicitis which was treated by endoscopic retrograde appendicitis therapy (ERAT) at Gastroenterology

Department of Hangzhou First People Hospital in China in December, 2021.

Result: In this case, the patient had sudden and persistent right lower abdominal pain for 6 days. Abdominal enhanced CT scan and ultrasonography both showed obviously dilated appendix considered chronic fecalith appendicitis in a patient with ulcerative colitis. Which had an indication for the ERAT procedure. In this case, the ERAT procedure was performed to manage chronic fecalith appendicitis. The patient was discharged after abdominal pain was relieved and inflammatory indexes were normal.

Conclusion: We consider that ERAT procedure is effective and safe in patients with ulcerative colitis combined with chronic fecalith appendicitis. Because of ERAT procedure, such cases can avoid surgery and its related complications. Further research are needed to be carried out to prove efficacy and safety of ERAT in patient with UC.

Biography

Muhammad Zulqarnain is working in the department of Gastroenterology and Hepatology affiliated with Hangzhou First People's Hospital at Zhejiang Chinese Medical University, China. His research is Endoscopic retrograde appendicitis therapy. The first human case report.



Spinal cord stimulation & Intrathecal therapy with Ziconotide: A solution for painful diabetic neuropathy?

Georgios K. Matis

University of Cologne, Germany

Spinal cord stimulation is one of the many available neuromodulation options to treat patients with chronic pain. Ziconotide is a synthetic, water-soluble cone snail venom-derived peptide. It is a nonopioid analgesic that selectively binds to N-type voltage-sensitive calcium channels on primary nociceptive afferent nerves in the dorsal horn of the spinal cord. This mechanism releases analgesic neurotransmitters into the synaptic gap and subsequently blocks pain signal transmission. Ziconotide does not easily cross

the blood-brain barrier, instead revealing its highly potent antinociceptive effect only after intrathecal administration. Because it has a narrow therapeutic window, careful dose titration, and a lag time to allow for onset (and offset) of analgesia and adverse effects are required. The presentation will focus on a recently published consensus proposal and publications and highlight the potential of this drug and of spinal cord stimulation as well as the areas where additional experience is needed.

Biography

Georgios K. Matis is a senior consultant for neurosurgery. He leads the chronic pain / spasticity sector of the Department of Stereotactic & Functional Neurosurgery in the University Hospital of Cologne. He has been trained in Greece (General University Hospital of Alexandroupolis, G. Papanikolaou General Hospital of Thessaloniki & 417 Army Equity Fund Hospital of Athens), USA (Department of Neurosurgery, Weill Cornell Medical College, New York, NY), Switzerland (Department of Neuroradiology, University Hospital of Zurich, Zurich) and Germany (Department of Stereotactic & Functional Neurosurgery, University Hospital Cologne, Cologne).

He is a member of two medical associations (Thessaloniki, Greece & North Rhine, Germany) and also a member of the German Neuromodulation Society (DGNM) and the International Neuromodulation Society (INS). He serves as reviewer for many international journals and is Editorial Board member for Neuromodulation: Technology at the Neural Interface and Interventional Pain Medicine and Neuromodulation. He holds the position of Editor-in-Chief of the Internet Journal of Neurosurgery. He has published many articles in Greek and international Pubmed-indexed journals and hold many lectures as invited speaker in numerous international congresses and webinars. At the same time, he is Public Education Committee member of the International Neuromodulation Society.

He involved in many international clinical studies and has been active as instructor for many colleagues in Germany and abroad. He is also an active member of the medical advisory board of the German CRPS Support Group and member of several online consultation platforms. He is actively involved in social media trying to raise awareness about spinal cord stimulation and neuromodulation.



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