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SCIENTIFIC PROGRAM

INTEGRATED HEALTH CONFERENCE

Hotel SB BCN Events, Barcelona, Spain

CSRM -2025
Sept 08-09, 2025 | Spain

Cell Science & Regenerative Medicine

ISBN: 978-1-917892-16-2

WGDD-2025
Sept 08-09, 2025 | Barcelona, Spain

Gastroenterology & Digestive Diseases

ISBN: 978-1-917892-17-9

ISHR 2025
September 08-09, 2025 | Barcelona, Spain

Hepatology & Nephrology Research

ISBN: 978-1-917892-20-9

INTEGRATED HEALTH CONFERENCE

REGISTRATIONS (08:30 - 09:00)

09:00 - 09:30 WELCOME ADDRESS BY MODERATOR

HEYNOTE FORUM (09:30 - 11:00)

09:30 - 10:00

Total Pancreatectomy and Autoislet Transplantation for Chronic Pancreatitis

Daniel Joyce, Cleveland Clinic, USA

10:00 - 10:30

New Generation Ektacytometry for the Diagnosis of Hereditary Hemolytic Anemias

Joan-Lluís Vives-Corrons, University of Barcelona, Spain

10:30 - 11:00

Insights of lifestyle in Lipid Metabolism and Cardiovascular Disease Progression in Diabetic Patients

Josep Julve, Institut de Recerca SANT PAU & CIBERDEM, Spain

GROUP PHOTO & REFRESHMENT BREAK (11:00 - 11:20)

TECHNICAL SESSION-I

11:20 - 11:40

Portal venous repopulation of decellularised rat liver scaffolds with syngeneic bone marrow stem cells

Emmanuel Huguet, University of Cambridge, UK

11:40 - 12:00

Liver-first approach to the treatment of patients with synchronous colorectal liver metastases: a systematic review and meta-analysis

Bruno Mirandola Bulisani, RR Médicos Cirurgiões, Brazil

12:00 - 12:20

Regulation of Hippo/TAZ signaling by phase separation

Kunxin Luo, University of California, Berkeley, USA

12:20 - 12:40

Endometriosis Presenting as a Rectal Stricture in a Patient with Ulcerative Colitis and Primary Sclerosing Cholangitis: A Case Report

Daniel Chorley, Gold Coast University Hospital, Australia

12:40 - 13:00

Mesenchymal Stem Cells and Their Extracellular Vesicles as a Future Treatment Strategy for Equine and Human Asthma? – A Literature Review

Hannah Julia Stage, Equine Clinic, Freie Universität Berlin, Germany

LUNCH @ RESTAURANT (13:00 - 14:00)

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TECHNICAL SESSION II

14:00 - 14:20

Decellularisation barotrauma in rat liver scaffolds compromises scaffold quality and recellularisation capacity

Zeeshan Afzal, University of Cambridge, UK

14:20 - 14:40

Management of IBD in Pregnancy

Cuckoo Choudhary, Thomas Jefferson University Hospital (Philadelphia, PA), USA

14:40 - 15:00

The Link Between Metabolic Syndrome and Cellulite -¬ Our Clinical Experience from Athens Medical Center Lifestyle Medicine Program

Sotirios Adamidis, Athens Medical Center, Greece

15:00 - 15:20

Advances in Chronic Kidney Disease Management

Brian Rayner, University of Cape Town, South Africa

15:20 - 15:40

The role of PARP1 in reprogramming transcription upon genotoxic stress

Qiang Zhou, The University of Hong Kong, Hong Kong

REFRESHMENT BREAK (15:40-16:00)

16:00 - 16:20

Hypothetical Pathogenetic Model of Membranous Nephropathy

Irina Zdravkova, Medical University of Plovdiv, Bulgaria

16:20 - 16:40

Flexible metallic nanostructured electrodes for implanted neural interfaces

M. Teresa González, Fundación IMDEA Nanociencia, Spain

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TECHNICAL SESSION-III

10:00 - 10:20

Comparative Analysis of COVID-19 Outcomes in Type 1 and 2 Type 2 Diabetes: A Three-Year Retrospective Study

Flavius Cioca, Victor Babes University of Medicine and Pharmacy, Romania

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10:20 - 10:40

Long-Term Outcomes of Laparoscopic Sleeve Gastrectomy: A 9-Year Follow-Up Study

Ines ARI, Université Libre de Bruxelles, Belgium

10:40 - 11:00

Use of frozen native feces for fecal microbiota transplantation in recurrent Clostridioides difficile infection : a simple way to improve the efficiency of donor feces preparation

Anne Christine Joly, Saint Antoine, France

11:00 - 11:20

Navigating Clinical Implementation of AI in Gastroenterology: Regulatory, Economic, and Skills Development Challenges

Kateryna Nechypurenko, Radimeds, Ukraine

REFRESHMENT BREAK (11:20-11:40)

11:40 - 12:00

Therapeutics with β-caryophyllene nanoemulsions for pulmonary arterial hypertension

Adriane Belló-Klein, UFRGS, Brazil

12:00 - 12:20

Submucosal tunneling endoscopic resection of a rare gastric hemangioma

Sze Ka Kin, Tuen Mun Hospital, Hong Kong

12:20 - 12:40

Tumor relaps and alarmins

Irina V Guzhova, Institute of Cytology of Russian Academy of Sciences, Russia

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12:40 - 13:00

Antimalarial Drugs at the Intersection of SARS-CoV-2 and Rheumatic Diseases:Potential Opportunities

Saule Abisheva, Astana Medical University, Kazakhstan

LUNCH @ RESTAURANT (13:00 - 14:00)

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POSTER VIEWING (14:00 - 14:40)

Poster - 1

Single-Cell Sequencing for the Characterization of Mesenchymal Cell Therapy Products: A Tool to Assess Batch-to-Batch Variability in Allogeneic Manufacturing

Roberto-Moreno, Takeda, Spain

Poster - 2

Development an iPSC-Derived Mesenchymal Product: Toward a Consistent Allogeneic Cell Therapy Product with Reduced Donor Variability

Celia-Martnez, Takeda, Spain

Poster - 3

Optimizing Cell Therapy Manufacturing: Transcriptomic Insights from Single-Cell RNA Sequencing

Nuria-Rocha-Alcubilla, Takeda, Spain

Poster - 4

Transcriptomic Platform for Donor Characterization in Cell Therapies

Julia Casado Gomez-Pallete, Alten, Spain

Poster - 5

Expression of O-GlcNAcylation in pulp tissue and dental pulp stem cells of healthy dental organs

Maria Cristina Franco Arellanes, Universidad Autónoma Benito Juárez de Oaxaca, Mexico

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Poster - 6

Isolation of CD133 positive cells from rat bone marrow by immune-magnetic beads and Fluorescence-activated cell sorting

Zeeshan Afzal, University of Cambridge, UK

Poster - 7

State-of-the-art innovation in flow cytometry analytical method development

David Perez Cabrera, Takeda, Spain

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TECHNICAL SESSION-III

14:40 - 15:00

Minimal Requirements for Cancer Initiation: A Comparative Consideration of Three Prototypes of Human Leukemia

Toshiyuki Hori, Ritsumeikan University, Japan

15:00 - 15:20

Exploring Athlete Perceptions and Nutritional Supplement Marketing: Preliminary Insights from the IRIS Project

Ana Tavares, ESTeSL-IPL, Portugal

15:20 - 15:40

Lipidomic Profiling of Non-Cirrhotic MAFLD-Associated Hepatocellular Carcinoma

Liang Qiao, Westmead Institute for Medical Research, Australia

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15:40 - 16:00

Serotonin 1 A (5-HT 1A) Receptor Constitutes a Potential Therapeutic Target for Treating Diabetic Neuropathic Pain

Milad S. Bitar, Kuwait university, Kuwait

REFRESHMENT BREAK (16:00-16:20)

END OF DAY 2 - CONFERENCE CONCLUDES

INTEGRATED HEALTH CONFERENCE

Virtual Scientific Program

Join Zoom Meeting

Meeting ID: 880 8746 0251

Passcode: URF@2025

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09:30 - 09:35

Overexpression of Oct4B1 induces epithelial mesenchymal transition in colorectal cancer SW480 cells

Yilin Chen, Department of Chest Surgery, Chongqing General Hospital & University, China

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09:35 - 09:40

The Application of Botulinum Toxin Type A After Plastic and Aesthetic Incision Surgery and Its Impact on Patients' Complication Risks

Hangli Wu, Department of Plastic & Aesthetic Surgery, Shaanxi Provincial Peoples Hospital, China

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09:40 - 09:45

let-7a Inhibits Cell Apoptosis in Hypoxic-Ischemic Neonatal Rat Brain Tissue by Inhibiting Fas/FasL

Yifeng Liu, Chongqing Jiulongpo District People's Hospital, China

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09:45 - 09:50

Upgrade Combination Response Is Limited by Prolonged Nucleos(t)ide Analogue Therapy in HBeAg-positive Chronic Hepatitis B: A Real-life Study

Qiaohe Wang, Chongqing General Hospital, Chongqing University, China

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09:50 - 09:55

Clinical Application of Laparoscopic Natural Orifice Specimen Extraction Surgery (NOSES) for Radical Resection of Colorectal Tumors

Jianping Wan, People's Hospital Affiliated to Chongqing Three Gorges Medical College, China

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09:55 - 10:00

Evaluation of the Effectiveness of Microbiome-Directed Dietary Intervention in Improving Gut Microbiota and Reducing Diarrhea in Colorectal Cancer Patients Undergoing Chemotherapy

Hui Yuan, The First Hospital Affiliated to TMMU（Southwest Hospital), China

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10:00 - 10:20

Nutrition and Developmental Origins of Kidney Disease

Sonia Saad, Kolling Institute, Australia

10:20 - 10:40

Clinical study on microscopic syndrome differentiation and traditional Chinese medicine treatment for liver-stomach disharmony in chronic gastritis

Shisheng Cao, Wushan county peopleâ€™s hospital, China

10:40 - 11:00

Sequential visual stimuli increase high frequency power in the visual cortex

Jeremie Sibille, Charite, Germany

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11:00 - 11:20

Dynamic Nanocarriers for RNA Delivery and Genome Editing

Ernst Wagner, University of Munich, Germany

11:20 - 11:50

Open abdomen and negative pressure wound therapy for acute peritonitis especially in the presence of anastomoses and ostomies

Orestis Ioannidis, Aristotle University of Thessaloniki, General Hospital "George Papanikolaou", Thessaloniki, Greece

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11:50 - 12:10

The Importance of Nutrigenetics and Microbiota in Personalized Medicine: From Phenotype to Genotype

Gulsen meral, Epigenetic Coaching, UK

12:10 - 12:30

Combined Analytical-Statistical Metrics/Strategy for the Quantification of Volatile Compounds in Oily Matrices

Enrique-Jacobo-Daz-Montaa, University of Seville, Seville, Spain

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12:30 - 12:50

Single focal hepatic lesions: keep in mind lymphoma and myeloma

Daniela Tirotta, Internal Medicine, Morgagni Pierantoni Hospital, Italy

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12:50 - 13:10

Microbial next generation material for betterment of human life

Ratnakar Chitte, School of Science and Technology, VVW University Surat, India

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13:10 - 13:30

Longitudinal assessment of cardio-respiratory fitness among Indian patients with type 2 diabetes mellitus

Mounish Reddy & Madhurika Jalakam, Junior Clinical Fellow in Emergency Medicine, UK

13:30 - 13:50

Targeting the CCL24 Pathway with nebokitug in Primary Sclerosing Cholangitis: Safety and Biological Activity from a Phase 2 Study

Adi Mor, Chemomab Therapeutics, Israel

13:50 - 14:10

Photobiomodulation Speeds Up Wound Healing via the JAK/STAT and PI3K/AKT Signalling Pathway

Nicolette N Houreld, Laser Research Centre, University of Johannesburg, South Africa

INTEGRATED HEALTH CONFERENCE

14:10 - 14:30

Targeting KEAP1 in Colorectal Cancer: Integrative Genomic and Pharmacological Analysis Identifies Dimethylfumarate as a Promising Therapeutic Molecule

Allal Badr-Eddine, University of Sciences and Technology Houari Boumediene, Algeria

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14:30 - 14:50

Indicators of diabetes mellitus after liraglutide, sitagliptin/metformin, linagliptin, and sitagliptin

Beatriz Atonal Flores, Community health, Mexico

14:50 - 15:10

Novel Placenta-Derived Artificial ECM Platform for Bioengineered Organ Construction

Xiao Yi & Xiaomei Liang, Southern Medical University, China

15:10 - 15:30

A novel isoform of Tensin1 promotes actin filament assembly for efficient erythroblast enucleation

Velia M. Fowler, University of Delaware, USA

15:30 - 15:50

Trends in Vascular Disorders of Intestine Mortality in the United States (1999–2024): Disparities by Sex, Race/Ethnicity, Region, and Urbanization

Mohamed Elnaggar, Hartford Healthcare, USA

15:50 - 16:10

IMPACT CKD: The Significant Societal and Environmental Impact Of Chronic Kidney Disease Over The Next Decade In Brazil

Talita Gobbi, AstraZeneca, Brazil

16:10 - 16:30

Modulation of Wound Healing by Pulsed Radiofrequency Electromagnetic Fields

Erica Costantini, University G.d'Annunzio, Italy

CONFERENCE CONCLUDES

2ND WORLD CONGRESS OF GASTROENTEROLOGY & DIGESTIVE DISEASES

Daniel Joyce, MD

Surgical Oncology/HPB Surgery, Cleveland Clinic, USA

Total Pancreatectomy and Autoislet Transplantation for Chronic Pancreatitis

Abstract:

The underlying principle for total pancreatectomy islet with cell auto-transplant (TPIAT) is to remove the chronically inflamed pancreas while preserving the intact islet cells to minimize the risk of brittle diabetes mellitus. Although a complex and irreversible procedure, with continue surgical innovation, it is a viable option in select children and adults with impaired quality of life from chronic or recurrent acute pancreatitis of varying etiologies. Benefits of TPIAT include modification of pancreatic cancer risk and improvements in quality of life and pain which have been repeatedly demonstrated in multiple studies.

The decision for TPIAT is an individualized one, based on the patient's etiology, anatomy, comorbidities including diabetes, symptom burden, rate of disease progression, and thorough evaluation by a multidisciplinary committee, including primary treating physicians, surgeons, endocrinologists, gastroenterologists, psychologists, and pain specialists. A key factor in selecting patients for TPIAT is assessing the extent of islet cell dysfunction to predict future islet yields. The components of a TPIAT are total pancreatectomy (TP), islet cell isolation and perfusion, and islet infusion into the portal system. During the TP, warm ischemia time must be limited, with ligation of the vascular flow of the pancreas only after complete mobilization and preparation for removal, which can be performed open, laparoscopically, or robot-assisted. The islets are prepared onsite or remotely using enzymatic and mechanical digestion of pancreatic tissue and successive purification cycles. After surgery, lifelong pancreatic enzymatic supplementation and screening for diabetes is required, although 20%-40% of patients after surgery will not require insulin. Continued advances in this technique is expanding acceptance and improving outcomes of this procedure since first reported in 1977.

doi.org/10.51219/URForum.2025.Daniel-Joyce

Bruno Mirandola Bulisani (1), Milena Arruda de Oliveira Leite (1), Jaques Waisberg (1)

Centro Universitário FMABC - Faculdade de Medicina do ABC, Santo André, Brazil

Liver-first approach to the treatment of patients with synchronous colorectal liver metastases: a systematic review and meta-analysis

Abstract:

Objective: The optimal approach to the treatment of colorectal carcinoma and synchronous liver metastases remains controversial. The objective of this review was to analyze the outcomes of adopting the liver-first approach for the treatment of patients with colorectal cancer with synchronous hepatic metastases who initially underwent systemic chemotherapy and/or resection of the metastatic lesions and primary colorectal carcinoma.

Methods: This review was conducted in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses guidelines. The MEDLINE, EMBASE, LILACS, and Cochrane Central Register of Controlled Trials databases were searched for the identification and retrieval of eligible studies. Studies that included details of using the liver-first approach for the treatment of synchronous liver metastases of colorectal cancer and its outcomes, including the patients' survival data, were included. Proportional meta-analysis was performed using the random-effects restricted maximum likelihood method to summarize the three- and five-year overall survival and recurrence rates of the patients.

Results: Eight hundred and fifty-five articles describing the results of studies on the liver-first approach were identified. Three independent reviewers screened the titles and abstracts of the articles and excluded 750 articles. Thereafter, 29 retrospective and comparative studies that met the inclusion criteria were included. No randomized controlled trials were identified in the database search.

Conclusion: Neoadjuvant treatment with systemic chemotherapy for hepatic metastasis can prepare the patient for resection of liver metastases, offering the opportunity for potentially curative treatment of synchronous hepatic metastases initially considered unresectable. The decision regarding the resection of primary colorectal carcinoma and liver metastases should be based on individualized patient response. Prospero database registration ID: CRD42022337047 (www.crd.york.ac.uk/prospero).

Keywords: Colorectal neoplasms; Neoplasm metastasis; Liver neoplasms; Liver surgery; Hepatectomy

Biography: Bruno Mirandola Bulisani, MD, PhD, is a Brazilian surgeon specializing in Minimally Invasive and Robotic Digestive Surgery. He holds a PhD in Health Sciences from Faculdade de Medicina do ABC (2023), with research focused on laparoscopic and robotic surgery. A member of SOBRACIL (Brazilian Society of Minimally Invasive Surgery), he has published in several international journals, with expertise in colorectal liver metastases and rare pelvic tumors. Currently a professor at USCS, he trains residents and pioneers robotic techniques, having presented at international congresses. Certified in robotic surgery by IDOR, he combines clinical innovation with academic leadership.

2ND WORLD CONGRESS OF GASTROENTEROLOGY & DIGESTIVE DISEASES

Shisheng Cao

Wushan County People's Hospital, Chongqing, China

Clinical study on microscopic syndrome differentiation and traditional Chinese medicine treatment for liver-stomach disharmony in chronic gastritis

Abstract:

Background: Chronic gastritis (CG) is a common gastrointestinal disorder characterized by inflammation of the stomach lining. Liver-stomach disharmony (LSD) syndrome is believed to contribute to CG symptoms.

Aim: To evaluate the efficacy and safety of microcosmic syndrome differentiation and Chinese herbal medicine (CHM) treatment in patients with CG and LSD syndrome.

Methods: Sixty-four patients with CG and LSD syndrome were randomly divided into two groups: The treatment group received CHM based on microcosmic syndrome differentiation and the control group received conventional Western medicine. The treatment course lasted 12 weeks. The primary outcome was improvement in dyspeptic symptoms, measured using the Nepean Dyspepsia Index. The secondary outcomes included the improvement rate of endoscopic findings, histopathological findings, and microcosmic syndrome scores and the incidence of adverse events.

Results: After 12 weeks of treatment, the treatment group showed significantly greater improvement in dyspeptic symptoms than the control group (93.75% vs 65.63%, $P < 0.01$). The treatment group also showed a significantly higher improvement rate in endoscopic findings than the control group (81.25% vs 53.13%, $P < 0.05$). The improvement rates of histopathological findings and microcosmic syndrome scores were not significantly different between the two groups ($P > 0.05$). No serious adverse events were observed in either group.

Conclusion: Microcosmic syndrome differentiation and CHM treatment can effectively improve dyspeptic symptoms and endoscopic findings in patients with CG and LSD syndrome and have a good safety profile.

Keywords: Chinese herbal medicine; Chronic gastritis; Liver-stomach disharmony; Microcosmic syndrome differentiation; Microcosmic syndrome scores; Randomized controlled trial.

2ND WORLD CONGRESS OF GASTROENTEROLOGY & DIGESTIVE DISEASES

Sze Ka Kin

Tuen Mun Hospital, Hong Kong Sar, China

Submucosal tunneling endoscopic resection of a rare gastric hemangioma

Abstract:

Gastric subepithelial lesion (SEL) is not uncommonly detected during upper endoscopy. Endoscopic ultrasonography is the usual next step of investigation to determine the layer of the stomach that the lesion is situated at. SELs that are from submucosal layer and muscularis propria can be removed by endoscopic technique if expertise is available. Gastric hemangioma, which is originated from the submucosa, is a rare finding in upper endoscopy. Despite its benign nature, it can cause gastrointestinal bleeding. Conventionally, symptomatic hemangioma is resected by surgery. Endoscopic resection of the gastric hemangioma is a novel approach to manage this condition. We present a case of gastric hemangioma that was resected by submucosal tunneling endoscopic resection (STER). The technique of STER involves creating a mucosal incision proximal to the lesion followed by constructing a submucosal tunnel towards the lesion. The lesion can then be resected and removed throught the tunnel. This technique results in small mucosal defect that can be closed easily and preserve the integrity of the stomach. Our case had the STER done uneventfully and the histology of specimen confirmed hemangioma.

Keywords: Endoscopy, endoscopic submucosal dissection, subepithelial lesion.

Biography: Dr. Sze KK is currently Associate Consultant in the Gastroenterology and Hepatology team, Department of Medicine and Geriatrics in Tuen Mun Hospital in Hong Kong SAR. Dr. Sze has special interests in early detection and treatment of gastrointestinal cancers, and advanced interventional endoscopy.

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2ND WORLD CONGRESS OF GASTROENTEROLOGY & DIGESTIVE DISEASES

Rachel Sintes [1 2 3 4 5 6], Paul McLellan [2 3 4 5 7], Gabriele Navelli[1 2 4], Cécilia Landman [2 3 4 5 7], Sandrine Delage [1 2 3 4], SandrineTruong [2 3 4 7], NicolasBenech [4 8], Nathalie Kapel [2 3 4 5 9], Alicia Moreino Sabater [3 4 10], Aurélie Schnuriger [3 4 11], Catherine Eckert [3 4 12], AlexandreBleibtreu [2 3 4 13], **Anne- Christine Joly** [1 2 3 4 5 6], Harry Sokol [2 3 4 5 6 7]

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doi.org/10.51219/URForum.2025.Anne-Christine-Joly

2ND WORLD CONGRESS OF GASTROENTEROLOGY & DIGESTIVE DISEASES

Abstract:
Fecal microbiota transplantation (FMT) is effective in the treatment of recurrent Clostridioides difficile infection (rCDI), and its use is recommended in this setting.FMT is also performed in France as part of several ongoing clinical trials.

The pharmaceutical preparation status in France requires the preparation of microbiota transplants for FMT to be carried out under the responsibility of the hospital pharmacist.

Since 2015, a specialised preparation unit has been set up in our hospital. It was expanded in 2020 with the creation of the donor center and will be relocated and designed to be even more functional next year.

The transplant preparation process has evolved over the last 10 years. The addition of a cryoprotectant allowed the storage at −80°C for up to 2 years, solving many practical and safety issues and providing ready-to-use transplants for each route of administration.

However, the process of preparing fecal transplants immediately after donation remains complex and time-consuming. A proportion (up to 50%) is destroyed following abnormal screening results.

We retrospectively compared two processes, frozen fecal preparation (FFP) and fresh native frozen preparation (FNFP), for clinical efficacy in the treatment of rCDI. FFP and FNFP were similarly effective with clinical success rates of 76.7% and 86.7% respectively (P = 0.32). FNFP is an efficient procedure that saves resources while maintaining clinical efficacy in rCDI.

Keywords: fecal microbiota transplantation, Clostridioides difficile, preparing process, frozen preparation

Biography: Dr Anne-Christine Joly is a pharmacist in charge of the pharmacotechnics department at Saint Antoine Hospital. Since 2014, she has been actively contributing to the development of faecal microbiota transplantation as a medicine, in the overall management of faecal donation, including reception, preparation, release, and storage. This activity ranges from clinical practice for cases of recurrent Clostridioides difficile infection to participating in clinical trials involving the transplantation.

2ND WORLD CONGRESS OF GASTROENTEROLOGY & DIGESTIVE DISEASES

Cuckoo Choudhary, MD.

Dorrance Hamilton Professor of Medicine,
Division of Gastroenterology, Thomas Jefferson University,
Philadelphia, PA 19107, USA

Management of IBD in Pregnancy

Background: Inflammatory bowel diseases (IBD), including Crohn's disease and ulcerative colitis, disproportionately affect women during their reproductive years. Active disease during conception and gestation increases risks for miscarriage, preterm birth, low birth weight, and perinatal complications.

Objectives: To synthesize current evidence-based approaches for managing IBD in pregnant patients, focusing on medication safety, timing, and multidisciplinary care frameworks.

Methods: Comprehensive review of guidelines and population-based registries—including PIANO, CONCEIVE, EPI-MERES—addressing therapeutic classes: Aminosalicylates, corticosteroids, thiopurines, anti-TNF agents, Vedolizumab, Ustekinumab, newer IL-23 agents, and small molecules.

Results:

- Preconception & Remission Goals: Remission prior to conception is essential; fecal calprotectin monitoring is recommended each trimester and during the postpartum period.
- Aminosalicylates & Steroids: Generally safe; budesonide/prednisone may carry slight cleft palate risk in the first trimester
- Thiopurines: Azathioprine/6-MP maintenance is safe; monitor hepatic function and fetal hematology; initiation during pregnancy not recommended
- Biologics – Anti-TNF: Adalimumab, infliximab, golimumab are low-risk; continued throughout pregnancy, with possible scheduling near delivery
- Vedolizumab & Ustekinumab: Emerging safety data show no significant increase in adverse outcomes compared to anti-TNFs, though vigilance for small-for-gestational-age and preterm birth is advised
- Newer Agents & Small Molecules: Limited pregnancy data for IL-23 agents; JAK inhibitors (Tofacitinib, Upadacitinib) and Ozanimod are contraindicated—discontinue ≥3 months before conception

Conclusions: Maintaining remission through pregnancy is paramount. Most traditional therapies, including biologics and thiopurines, are safe for use during pregnancy and lactation. Newer biologics (vedolizumab, ustekinumab) demonstrate reassuring safety profiles, though ongoing surveillance remains important. Emerging therapies and small molecules currently lack sufficient data, necessitating avoidance during gestation. Multidisciplinary preconception counseling, routine inflammatory monitoring, and personalized, risk-benefit discussions are essential to optimizing maternal and fetal outcomes.

doi.org/10.51219/URForum.2025.Cuckoo-Choudhary

2ND WORLD CONGRESS OF GASTROENTEROLOGY & DIGESTIVE DISEASES

Biography: Cuckoo Choudhary, MD, FACP, AGAF, FAMWA, FCPP, is the Dorrance H. Hamilton Professor of Medicine in the Division of Gastroenterology and Hepatology at Thomas Jefferson University, where she also leads the division's efforts in Women, Diversity, Equity, and Inclusion. A general gastroenterologist with deep interest in inflammatory bowel disease (IBD), Dr. Choudhary has earned fellowships from the American College of Physicians, the American Gastroenterological Association, the American Medical Women's Association, and the College of Physicians of Philadelphia.

Dr. Choudhary received her MBBS from Guwahati Medical College in India, completed her internal medicine residency at Lankenau Hospital in Pennsylvania, and pursued her fellowship in gastroenterology and hepatology at Thomas Jefferson University. Her clinical and academic work spans a wide range of topics, including IBD, gender differences in GI disorders, and gastrointestinal conditions disproportionately affecting women. She has delivered invited lectures at major international conferences such as the Euro Heart Failure Conference in Paris, the World Congress of Digestive Diseases in Rome, and the Biennial Advances in GI and Hepatology in San Juan.

A passionate educator, Dr. Choudhary is the founder and director of the Jefferson GI and Women's Health Symposium and co-director of the Annual Advances in Gastroenterology conference, now in its 43rd year. She is also spearheading a new Jefferson GI Enterprise course launching in June 2025. Her leadership in education and mentorship extends to organizing major national meetings, guiding trainees, and serving as a Visiting Professor at Gemelli Hospital in Rome in 2023.

Dr. Choudhary has authored numerous peer-reviewed publications and book chapters on IBD and GI diseases in women and the elderly. In 2025, she attended ACG's "Train the Trainers" program in Manila, Philippines—further solidifying her role as a leader in medical education and innovation.
Currently, she co-leads the newly launched Women's Task Force Committee at Thomas Jefferson University, reaffirming her longstanding commitment to advancing gender equity, inclusion, and excellence in healthcare. She is also a member of AGA's Women's Committee, and is looking forward to participating in the Northeast regional workshop in Boston in November this year.

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Mohamed Elnaggar(1), Ibrahim Hassan(2), Zainab Bahdar(3), Mohamed Abd El Aziz(4), Murali Dharan(5)

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(2) Faculty of Medicine, Suez Canal University. Ismailia. Egypt
(3) Faculty of Medicine, Al-Yarmouk University, Irbid, Jordan.
(4) Internal Medicine department, Deaconess Health System. Henderson, KY. USA
(5) Director, Advanced Endoscopy Program, Gastroenterology Department, University of Connecticut. Farmington, CT. USA

Trends in Vascular Disorders of Intestine Mortality in the United States (1999–2024): Disparities by Sex, Race/Ethnicity, Region, and Urbanization

Background: Vascular disorders of the intestine remain important contributors to gastrointestinal mortality in the United States. Although advances in diagnostic imaging and endovascular therapy have improved outcomes, national trends in age-adjusted mortality rates (AAMR) and disparities across demographic and geographic groups have not been fully characterized.

Methods: We obtained mortality data for vascular intestinal disorders from the CDC WONDER database for 1999–2024 using the ICD-10 code (K55). Annual mortality rates were age-adjusted to the 2000 U.S. standard population and expressed per 100,000 persons. Analyses were stratified by sex (male, female), race/ethnicity (Non-Hispanic Black or African American, Non-Hispanic White, Hispanic), U.S. Census region (Northeast, Midwest, South, West), and urbanization status (rural vs. urban). Joinpoint regression identified periods with distinct trends and estimated annual percent changes (APC); the average annual percent change (AAPC) summarized the overall trend.

Results: From 1999 to 2024, 214,372 deaths from vascular intestinal disorders were recorded. The overall AAMR declined from 3.27 (95% CI: 3.20–3.34) in 1999 to 1.82 (1.78–1.86) in 2024 (AAPC: –2.33%). Among females, rates fell from 3.53 to 1.97 (AAPC: –2.35%), and among males from 2.84 to 1.63 (AAPC: –2.21%). By race/ethnicity, Black or African American individuals decreased from 3.95 to 2.35 (AAPC: –2.16%), Hispanics from 2.60 to 1.58 (AAPC: –2.49%), and Whites from 3.25 to 1.88 (AAPC: –2.17%). Regionally, the Northeast declined from 3.05 to 1.79 (AAPC: –2.50%), West from 3.19 to 1.69 (AAPC: –2.47%), South from 3.40 to 1.88 (AAPC: –2.34%), and Midwest from 3.37 to 1.97 (AAPC: –2.11%). Urban areas fell from 3.26 to 1.70 (AAPC: –3.16%) and rural from 3.39 to 2.43 (AAPC: –1.58%).

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Conclusions: Mortality from vascular intestinal disorders declined substantially from 1999 to 2024 across all demographic and geographic subgroups, with the fastest declines in urban populations and the Northeast. Persistent disparities by race/ethnicity and setting underscore the need for targeted prevention, timely diagnosis, and equitable access to advanced vascular interventions.

Keywords: Vascular intestinal disorders, mortality trends, disparities, CDC WONDER, AAMR

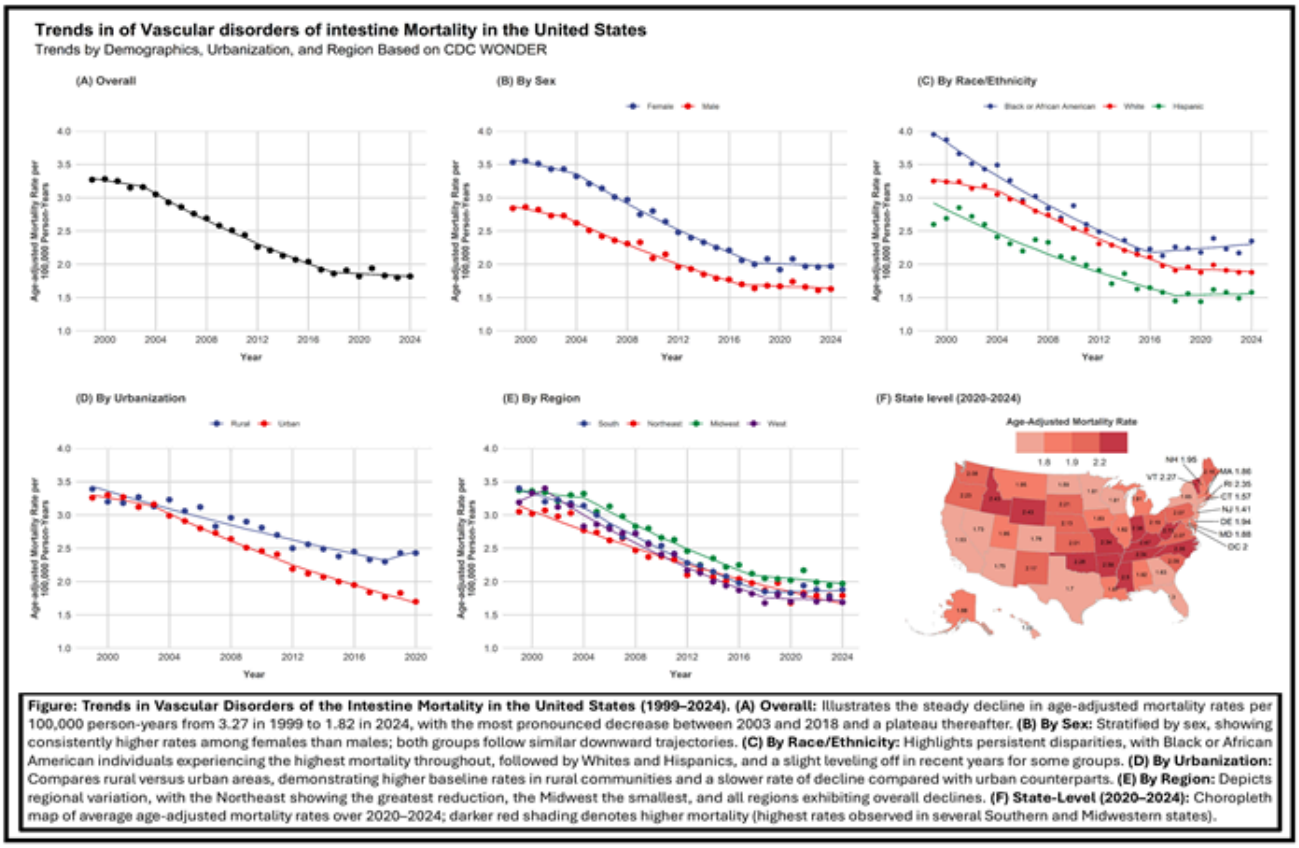

Figure: Trends in Vascular Disorders of the Intestine Mortality in the United States (1999–2024). (A) Overall: Illustrates the steady decline in age-adjusted mortality rates per 100,000 person-years from 3.27 in 1999 to 1.82 in 2024, with the most pronounced decrease between 2003 and 2018 and a plateau thereafter. **(B) By Sex:** Stratified by sex, showing consistently higher rates among females than males; both groups follow similar downward trajectories. **(C) By Race/Ethnicity:** Highlights persistent disparities, with Black or African American individuals experiencing the highest mortality throughout, followed by Whites and Hispanics, and a slight leveling off in recent years for some groups. **(D) By Urbanization:** Compares rural versus urban areas, demonstrating higher baseline rates in rural communities and a slower rate of decline compared with urban counterparts. **(E) By Region:** Depicts regional variation, with the Northeast showing the greatest reduction, the Midwest the smallest, and all regions exhibiting overall declines. **(F) State-Level (2020–2024):** Choropleth map of average age-adjusted mortality rates over 2020–2024; darker red shading denotes higher mortality (highest rates observed in several Southern and Midwestern states).

2ND WORLD CONGRESS OF GASTROENTEROLOGY & DIGESTIVE DISEASES

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The Link Between Metabolic Syndrome and Cellulite - Our Clinical Experience from Athens Medical Center Lifestyle Medicine Program

Objectives: To explore the potential association between Metabolic Syndrome (MetS) and cellulite, focusing on shared pathophysiological mechanisms.

Scope: MetS significantly increases the risk of cardiovascular disease and Type 2 diabetes mellitus. Subcutaneous adipose tissue (SAT) distribution, in certain locations, is also a risk factor for cardiometabolic disease. Cellulite is a common condition affecting mostly women's skin texture. Despite being considered primarily a cosmetic issue, cellulite shares multiple common features with MetS.

Methods: Shared clinical and pathogenetic features between MetS and cellulite are discussed.

Results: Common pathophysiological processes between MetS and cellulite are outlined in Table 1.

Pathophysiological process	MetS	Cellulite
Inflammation	Systemic inflammation from adipose tissue dysfunction	Local inflammation from adipose hypertrophy and fibrosis
Hormonal imbalance	Estrogen affects fat distribution	Estrogen affects fat distribution and connective tissue structure
Adipose tissue dysfunction	Visceral adiposity contributing to insulin resistance and inflammation	Subcutaneous fat hypertrophy and altered extracellular matrix, leading to typical skin changes
Microcirculatory changes	microcirculation impairment, affecting blood flow and lymphatic drainage, contributing to tissue edema and fibrosis.	

Table 1. Shared pathophysiological processes between MetS and cellulite

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We have observed tirzepatide's beneficial effects in women with polycystic ovarian syndrome and increased androgens; apart from improving insulin resistance and reducing inflammation, tirzepatide treatment also led to improved skin appearance with less cellulite, skin tags, and discolored patches, all of which are also signs of insulin resistance.

Conclusions: MetS and cellulite share several pathophysiological processes.Our hypothesis is that the association between SAT and cardiometabolic risk may also apply to SAT in areas where cellulite appears, independent of location. Further research is essential to elucidate the pathophysiology of these conditions and their common processes, identify clinically relevant biomarkers, and develop targeted therapies.

Biography: Sotiris Adamidis is the Director of Internal Medicine in Athens Medical Center, President of the European Society of Diabetes, Metabolic Syndrome and Obesity (EsoDiMeSO), and Director of the newly established Lifestyle Medicine Department in Athens Medical Center.

He received his MD from Athens University School of Medicine. He is board-certified in Internal Medicine with a special interest in metabolism, diabetes, obesity, and related conditions. He is a member of the American Diabetes Association and the Southern Medical Association. He is well published in medical journals, lay press, and serves on the editorial board of numerous journals. He is invited as a medical expert on television, often commenting on health and other matters, commenting on conditions such as hypercholesterolemia, Cardiometabolic diseases, and COVID-19-related conditions.

He has authored two books, "Metabolic Syndrome, Obesity and Diabetes" and "From Metabolic Syndrome to Cellulite: The Medical Solution", as well as 2 poetry books.

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Navigating Clinical Implementation of AI in Gastroenterology: Regulatory, Economic, and Skills Development Challenges

Abstract: Artificial intelligence (AI) is rapidly transforming gastroenterology, with endoscopic and radiologic applications achieving regulatory approval, yet clinical implementation faces significant barriers requiring strategic solutions. This analysis examines current challenges in AI deployment across gastroenterological practice, with emphasis on emerging physician deskilling concerns and new competency requirements. A comprehensive review of regulatory pathways, approved AI devices, implementation barriers, and recent clinical evidence was conducted, incorporating practical insights from AI development coaching experience. Currently, over 20 AI devices have received FDA or EU approval for gastroenterological applications, including 10 radiologic tools primarily targeting liver assessment and 6 endoscopic systems for polyp detection. While endoscopic AI required randomized controlled trials for FDA approval, radiologic applications achieved clearance through less stringent 510(k) pathways. Major implementation barriers include evolving regulatory frameworks struggling with AI's adaptive nature, limited real-world evidence demonstrating patient outcomes, unclear cost-effectiveness and reimbursement models, ethical concerns regarding data governance and algorithmic bias, and critically, newly documented physician deskilling effects. A 2025 multicentre study demonstrated that adenoma detection rates in standard colonoscopy decreased significantly from 28.4% to 22.4% after endoscopists were exposed to routine AI use, representing the first evidence of AI-induced performance degradation. Successful AI implementation requires developing AI-specific regulatory pathways, generating robust real-world evidence, establishing transparent bias mitigation strategies, creating value-based reimbursement models, and implementing new competency frameworks to prevent deskilling while enhancing clinical capabilities through strategic human-AI collaboration.

Keywords: Artificial Intelligence, Medical Imaging, Implementation Science, Human-AI Interaction, Clinical Decision Support, Gastroenterology.

Biography: Dr. Kateryna Nechypurenko is a radiologist with over 15 years of clinical experience and Founder/Business Development Director at Radimeds LLC, specializing in general radiology, trauma, and multimodality imaging across X-ray, CT, CBCT, MRI, and sonography. Since 2017, she has been coaching AI developers internationally, providing expertise in data quality management, annotations, use case development, and clinical implementation strategies. Her educational background spans Gorky National Medical University (Ukraine), Vilnius University (Lithuania), and Stanford University School of Medicine. Dr. Kateryna focuses her research on AI implementation in healthcare and serves as a consultant for hospitals, clinics, and AI companies worldwide, bridging the gap between clinical practice and artificial intelligence innovation in medical imaging

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Combined HIFEM and Synchronized RF Heating in MASLD: A Non-Invasive Strategy to Reduce Hepatic Fat and Improve Metabolic Parameters

Abstract:

Background: Metabolic-associated liver disease (MASLD) is driven by excess visceral/ectopic fat and low muscle mass. Simultaneous high-intensity focused electromagnetic stimulation (HIFEM) with synchronized radiofrequency (RF heating) reduces adipose thickness and increases skeletal muscle thickness in controlled MRI/ultrasound studies.

Objective: By decreasing visceral/subcutaneous adiposity and improving muscle mass/function, HIFEM+RF may reduce hepatic steatosis and improve metabolic markers in MASLD.

Methods: This pilot study included 56 patients (mean age 46 ± 7 years, BMI 32.3 ± 1.7 kg/m^2) with MRI-spectroscopy–confirmed MASLD. Participants underwent 4 sessions over 3–4 weeks combining RF heating with HIFEM. Assessments before and after treatment included liver fat content (US-spectroscopy/MRI-PDFF), ALT, AST, HOMA-IR, QUICKI, waist circumference, US-derived VAT, and safety at week 12.

Results: By three months, abdominal fat was reduced by 28.3 % and muscle thickness increased by 24.2 %. At week 12: ≥4 cm waist reduction and ≥15 % VAT decrease. Hepatic fat reduction: ≥15 % relative decrease in MRI-PDFF. Biochemical/metabolic improvements included normalization of ALT/AST and GGT. Reductions in visceral fat and increases in muscle mass correlated with steatosis regression, HOMA-IR reduction ≥20 %, and QUICKI increase ≥30 %. Patient comfort and satisfaction were high; side effects were mild and transient (temporary erythema, muscle soreness).

Conclusion: Synchronous HIFEM and RF heating appears to be a safe, non-invasive modality that may reduce fat accumulation and enhance muscle adaptation, with potential relevance for MASLD management. Controlled trials are warranted to confirm specific effects on hepatic steatosis and metabolic outcomes. HIFEM+RF may represent a non-pharmacologic adjunct for MASLD by targeting ectopic fat and the muscle–liver metabolic axis.

Keywords: Metabolic-associated liver disease, HIFEM, high-intensity focused electromagnetic stimulation, RF heating

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Targeting KEAP1 in Colorectal Cancer: Integrative Genomic and Pharmacological Analysis Identifies Dimethylfumarate as a Promising Therapeutic Molecule

Abstract:

Introduction: Kelch-like ECH-associated protein 1 (KEAP1) is a key regulator of cellular redox homeostasis through its interaction with NRF2, and its aberrant expression has been implicated in various cancers. This study investigates the expression profile, regulatory mechanisms, and mutational landscape of KEAP1 in COAD, and evaluates the efficacy of a KEAP1-targeting compound, dimethylfumarate (DMF), an FDA approved treatment for multiple sclerosis, as a potential antitumor compound.

Methods: KEAP1 expression in COAD was analyzed using The Cancer Genome Atlas (TCGA) database. Regulatory mechanisms were assessed by evaluating promoter methylation levels and KEAP1-targeting miRNAs profiling. Candidate therapeutic molecules were extracted from the ChEMBL database, leading to the selection of DMF. TCGA mutational data and maftools package, identified mutations within the BTB domain of KEAP1, which is critical for DMF binding. The structural implications of these mutations were explored by AlphaFold and molecular docking, respectively. The antitumor activity of DMF was evaluated (assessed) ted in vitro on HCT-116 colorectal cancer cells by the MTT assay.

Results: KEAP1 was found to be significantly overexpressed in COAD despite hypermethylation of its promoter, suggesting alternative regulatory mechanisms. The hsa-miR-140, a microRNA predicted to target KEAP1, was downregulated in COAD, potentially contributing to KEAP1 overexpression. On the gene itself, we identified a missense mutation, I125V, within the BTB domain, which may alter KEAP1's interaction with DMF. Treatment with 50 µM DMF reduced HCT-116 cell viability ($P < 0.001$), supporting its antitumor potential.

Conclusion: These findings highlight the multifaceted regulation of KEAP1 in COAD and propose DMF as a promising therapeutic agent, warranting further preclinical and clinical investigations.

Keywords: Colon adenocarcinoma, Dimethylfumarate, KEAP1, miRNA, AlphaFold

2ND WORLD CONGRESS OF GASTROENTEROLOGY & DIGESTIVE DISEASES

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Comparative Analysis of COVID-19 Outcomesin Type 1 and Type2 Diabetes: A Three-Year Retrospective Study

Abstract:

Background and Objectives: This comprehensive retrospective study assesses COVID-19 17 outcomes in type 1 and type 2 diabetes patients across three years, focusing on how these outcomes 18 variedwith the evolving pandemic and changes in diabetes management. The study aims to deter- 19 mine if COVID-19 outcomes, including severity, ICU admission rates, duration of hospitalization, 20 and mortality, are significantly different between these diabetic subtypes.

Materials and Methods: 21 The study analyzed data from patients admitted to the Victor Babes Hospital for Infectious Diseases 22 and Pulmonology with confirmed COVID-19 and pre-existing diabetes, from the years 2020, 2021, 23 and 2022.

Results: Among 486 patients (200 without diabetes, 62 with T1DM, 224 with T2DM), 24 T2DM patients showed notably higher severity, with 33.5% experiencing severe cases, comparedto25 25.8% in T1DM. Mortality rates were 11.6%in T2DM and 8.1% in T1DM. T2DM patients had longer 26 hospitalstays (11.6±7.0 days) compared to T1DM (9.1±5.8days) and were more likely to require ICU 27 admission (OR: 2.24) and mechanical ventilation (OR: 2.46). Hyperglycemia at admission was significantly higher in diabetic groups 28, particularly in T2DM (178.3±34.7 mg/dL), compared to T1DM 29 (164.8±39.6 mg/dL).

Conclusions: The study reveals a discernible difference in COVID-19 outcomes 30 between T1DM and T2DM, with T2DM patients having longer hospital admissions, mechanical 31 ventilation necessities, and mortality risks.

Keywords: Diabetes Mellitus; COVID-19; SARS-CoV-2.

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2ND WORLD CONGRESS OF GASTROENTEROLOGY & DIGESTIVE DISEASES

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Single focal hepatic lesions: keep in mind lymphoma and myeloma

Abstract:

Background: A solitary liver mass with negative solid-tumor markers (AFP/CEA/CA19-9) and no chronic liver disease should raise suspicion for hematologic malignancy, especially primary hepatic lymphoma (PHL) or, far less commonly, hepatic plasmacytoma (MM) in the setting of multiple myeloma. Imaging (abdomen CT, abdomen MRI and liver CEUS) is often suggestive, but not specific; biopsy is mandatory for a definitive diagnosis.

Methods: A narrative literature review was performed to summarize the epidemiology, imaging features, histopathology, and management of single focal hepatic lesions associated with lymphoma and multiple myeloma. We presented, also, two of our cases.

Clinical Presentation of Hematological Liver Lesions:

Most patients were asymptomatic or with non-specific symptoms such as abdominal discomfort or weight loss. Often, the patients are middle-aged men; the majority of cases of PHL are diffuse large B-cell type. Laboratory tests were often unremarkable, with AFP, CEA, and CA 19-9 typically within normal limits. In hepatic plasmacytoma, a history of MM or elevated serum paraprotein levels can aid diagnosis. These lesions are usually hypovathe scular on CT, MRI, and CEUS, but documented hypervascular cases exist; do not over-rely on enhancement pattern.

Conclusions: MM e PHL can masquerade as HCC or cholangiocarcinoma, including periportal "soft-tissue cuffing." Maintain suspicion when markers are negative and the liver is otherwise "healthy." Ancillary clues are: splenic lesions, hepatosplenomegaly, vessel encasement without thrombosis, and minimal biliary obstruction favor hematologic malignancy. PHL and MM lesions are a special alert from the doctors taking care of the patient with single hepatic lesion, especially without cirrhosis. Probably in the future, diagnostics with artificial intelligence will be able to support these unusual diagnoses.

Keywords: solitary liver mass, primary hepatic lymphoma, hepatic plasmacytoma, CEUS, MRI, CT abdomen.

Biography: Dr. Daniela Tirotta studied Internal Medicine at the Ancona University, Italy. She worked as an internist in the Rimini AUSL, then in the Forlì AUSL. She attended the Clinical Governance master's degree in Internal Medicine, at the Carlo Cattaneo University, Milan. She has published more than 25 research articles in SCI (E) journals, HI 15.

2ND WORLD CONGRESS OF GASTROENTEROLOGY & DIGESTIVE DISEASES

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Combined Analytical-Statistical Metrics/Strategy for the Quantification of Volatile Compounds in Oily Matrices

Abstract: The quantification of volatile compounds in virgin olive oil (VOO) is a complex task due to the wide range of concentrations and chemical families present, as well as interferences from the oily matrix. Obtaining reliable results in an analytical quality environment necessitates the use of appropriate methodological calibration.

This study implements statistical and analytical metrics/strategies for the quantification of volatile compounds in oily matrices. This task was performed comparing four calibration procedures for quantifying volatile compounds in VOO: external matrix-matched standard (EC), external standard with internal standard (IS), standard addition (AC), and standard addition with IS. Volatile compounds were analysed using Dynamic Headspace - Gas Chromatography (DHS-GC-FID).

For EC and EC with IS calibrations, a single calibration curve was generated, and sample signals were interpolated. In contrast, AC and AC with IS involved incrementally adding standards to each sample, creating a calibration curve per sample, and extrapolating to determine the sample concentration.

The results indicated that AC and AC with IS methods exhibited higher variability compared to EC-based approaches. The EC method proved to be the most effective for quantifying volatile compounds in virgin olive oil within the context of this study. This suggests that for routine analysis and quality control of VOO volatile profiles, external matrix-matched standard calibration offers a more reliable and less variable approach. The use of an internal standard alongside external calibration can further enhance the accuracy and precision of the quantification by correcting for potential variations in sample introduction and instrument response.

The findings of this research contribute to the ongoing efforts to standardize and improve the analytical methods used to assess the quality and authenticity of virgin olive oil, where the volatile profile plays a crucial role in defining its sensory characteristics and overall quality.

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Comparative Analysis of COVID-19 Outcomesin Type 1 and Type2 Diabetes: A Three-Year Retrospective Study

Abstract: Microorganism is important human integration to society as a number next next-generation products get synthesized from microorganism for health, environment, and agriculture. Microorganism produces the therapeutic product as well biomaterials such as bioplastic, agriculture products, plant growth hormones, biofertilizers, and biopesticides. But these biocells and biomaterials need to link to a nanoparticle for their efficient target delivery to the appropriate range system.

The next generation of microbial materials is poised to revolutionize industries ranging from healthcare to construction. These innovations promise more sustainable, efficient, and eco-friendly solutions to some of humanity's most pressing challenges. By harnessing the power of microbes, we can improve human health, reduce our environmental footprint, and create new materials that were once thought impossible.

Keywords: Biomaterials, Microbes, Next-generation materials

2ND INTERNATIONAL CONFERENCE ON CELL SCIENCE AND REGENERATIVE MEDICINE

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Mesenchymal Stem Cells and Their Extracellular Vesicles as a Future Treatment Strategy for Equine and Human Asthma? – A Literature Review

Abstract: Asthma is a chronic, inflammatory, non-infectious respiratory disease with high prevalence in humans and horses. Severe equine asthma (EA) exerts strong similarities to human asthma (HA). In both species, treatment success is not always successful and includes bronchodilators, mucolytics and corticosteroids, whereas the latter can cause systemic side effects, underlying the need for new treatment strategies. Multipotent mesenchymal stem cells (MSCs) mainly act through their extracellular vesicles (MSC-EVs) with promising antiinflammatory and immunomodulatory paracrine effects and could therefore be used as new treatment option for lung diseases. The study´s aim was to compare the therapeutic effects of MSCs and MSC-EVs in EA and HA based on the `One Medicine, one Health´ approach.

The research question addressed whether asthmatic human patients could benefit from new treatment approaches of asthma affected horses and vice versa. An extensive literature search was carried out, including publications between 2010 and 2025. In EA and HA first clinical studies investigated the safety and clinical efficiency of MSCs, whereas, to the best of the author´s knowledge, MSC-EVs have not yet been used in these patients clinically. In horses with severe EA a first study showed that intrabronchial applicated autologous adipose tissue-derived MSCs significantly improved long-term clinical symptoms after one year. In 2022, the first human asthmatic patient benefited significantly from intravenously applied allogenic umbilical cord-derived MSCs two and six months after treatment, as demonstrated by reduction in nebulizer usage. Further single clinical studies followed. In conclusion, the horse represents a suitable model for allergic neutrophilic HA. Further studies investigating the clinical efficiency of MSCs and especially their MSC-EVs will lead to better treatment options for both, humans and horses.

Keywords: asthma, equine, human, mesenchymal stem cells, extracellular vesicles, regenerative medicine

Biography: Dr. Hannah Julia Stage is a research assistant and veterinarian at the Equine Clinic of the Freie Universität of Berlin, Germany (Department of Equine Internal Medicine). In her thesis she focused on the characterisation and multilineage differentiation potential of mesenchymal stem cells derived from equine adipose tissue. Her special interest lies in stem cells and potential new treatment strategies, especially in equine internal medicine.

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2ND INTERNATIONAL CONFERENCE ON CELL SCIENCE AND REGENERATIVE MEDICINE

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A novel isoform of Tensin1 promotes actin filament assembly for efficient erythroblast enucleation

Abstract: Mammalian red blood cells are generated via a terminal erythroid differentiation pathway culminating in cell polarization and enucleation. Actin filament polymerization is critical for enucleation, but the molecular regulatory mechanisms remain poorly understood. We utilized publicly available RNA-seq and proteomics datasets to mine for actin-binding proteins and actin-nucleation factors differentially expressed during human erythroid differentiation and discovered that a focal adhesion protein—Tensin-1—dramatically increases in expression late in differentiation. Remarkably, we found that differentiating human CD34+ cells express a novel truncated form of Tensin-1 (eTNS1; M_r ~125 kDa) missing the N-terminal half of the protein, due to an internal mRNA translation start site resulting in a unique exon 1. eTNS1 localized to the cytoplasm during terminal erythroid differentiation, with no apparent membrane association or focal adhesion formation. Knocking out eTNS1 had no effect on assembly of the spectrin membrane skeleton but led to impaired enucleation and absent or mis-localized actin filament foci in enucleating erythroblasts. We conclude that eTNS1 is a novel regulator of actin filament assembly during human erythroid terminal differentiation required for efficient enucleation.

Keywords: Actin Polymerization / Enucleation / Enucleosome / Erythroid Differentiation / Tensin1

Biography: Velia M. Fowler received a B.A. from Oberlin College (1974), Ph.D. from Harvard University (1980), and a Jane Coffin Childs Postdoctoral Fellowship at the NIH and Johns Hopkins University School of Medicine (1980-82). Her research investigates how actin dynamics and myosin contractility provide stability and exert forces to shape membrane curvature, cell & tissue morphology, biomechanics and physiology in red blood cells, eye lens, and striated muscle. She has published >140 articles, chapters and reviews, and mentored >30 graduate students and postdoctoral fellows. She served as Associate Editor for Journal of Biological Chemistry and Program Chair for many international conferences.

2ND INTERNATIONAL CONFERENCE ON CELL SCIENCE AND REGENERATIVE MEDICINE

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Flexible metallic nanostructured electrodes for implanted neural interfaces

Abstract: Neural interfaces have become essential tools for the diagnosis and treatment of many neurological disorders, offering new strategies when phamacological approaches are unsuficient or produce serious side effects. Despite their good results, the main challage of present implanted neural interfaces is their poor performance stability in the medium/long term that, in many cases, leads to the need of replacing the device or stopping the treatment. Broad research is taking place with the aim of developing new interfaces with softer materials that have a better mechanical compliance with the neural tissue, reducing foreign body responses. In addition, there is a need to improve the performance of the electrodes themselves, specially when their size is to be reduced for more spatial resolution when recording, or avoiding being unspecific when stimulating. To this aim, efforts have been made toward the use of new materials and coatings, as well as the modification of the electrode superficial structure.

In this work, we present our work in providing nanostructure to the surface of the neural electrodes with networks of vertical metallic nanowires prepared by template-assisted electrodeposition. These structural modifications lead to an increase of the electrode effective area and, hence an impedance decrease. In addition, the nanostructure favours the intimate neuron-electrode contact, reducing the foreign-body response. We compare different surfaces using electrochemical impedance spectroscopy and study their biocompatibility in rat embryonic cortical cells cultures. Our studies contribute to advance in the achivement of less invasive and more reliable implanted neural interfaces for a safer diagnosis and treatment of neurological disorders.

Keywords: Neural interfaces, nanostructured electrodes, templated-assisted electrodeposition, metallic nanowires, electrochemical impedance spectroscopy

Biography: M. Teresa González is an expert in the electrical properties of matter and has work in different fields including superconductivity, during is PhD research, molecular electronics, and the fabrication and caracterization of nanostructured electrodes for neural interfacing. Since 2016, she is head of the Neural Interfaces Laboratory at Fundación IMDEA Nanociencia. She has been PI of several national and European research projects focused on the development of neural interfaces. Presently, she is coordinator of the MSCA doctoral network NeuroNanotech (Grant Agreement number: 101169352).

2ND INTERNATIONAL CONFERENCE ON CELL SCIENCE AND REGENERATIVE MEDICINE

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Sequential visual stimuli increase high frequency power in the visual cortex

Abstract: Today, 40 Hz flickering full-field visual stimulation is used to entrain neuronal oscillations for a variety of therapeutic purposes. We here propose spatially organized sequential visual flickering stimulation as a newer tool to entrain the visual system. We show that sequential visual flickering can evoke increased power in high frequencies (100 to 190 Hz) in the visual cortex of mice. Consequently, sequential sensory stimulation should be regarded as a putative new way leading to power increases in high frequency domains.

Keywords: Visual sensory processing, Neuronal entrainement, Neuropixels

Biography: I'm a research scientist at Charite. Defended my PhD in 2013 on neuroglial interaction and have been specializing in in vivo physiology since. Currently presenting some murine application from these new stimulations apradigm developped by the start-up Nuuron aimed at curing Alzhheimer.

2ND INTERNATIONAL CONFERENCE ON CELL SCIENCE AND REGENERATIVE MEDICINE

Ernst Wagner

Pharmaceutical Biotechnology, Department of Pharmacy,
University of Munich (LMU), Germany

Dynamic Nanocarriers for RNA Delivery and Genome Editing

Abstract: By end of 2024, 33 gene therapies and 35 RNA therapies are approved as medical drugs. Dynamic and targeted intracellular delivery of RNA still remains a key requirement. We focus on a bio-inspired chemical evolution strategy of delivery carriers. By incorporation of artificial amino acids such as tetraethylene pentamino succinic acid or lipo amino fatty acids (LAF) into xenopeptides (XPs), double pH-responsive nucleic acid carriers have been designed for potent intracellular delivery of mRNA in vitro and in vivo. Enhanced endosomal escape turned out to be a key factor for RNA delivery.

An pH-dependent polarity of LAF was implemented by a central tertiary amine, which disrupts the hydrophobic character once protonated, resulting in drastic pH-dependent change in the distribution from lipid phase (physiological pH 7.4) to lipid/water interface (endosomal pH 5.5). Unique dynamic ultrastructures assemblies are revealed by SAXS and molecular dynamics calculations. Activity was maintained even in full serum and at extremely low dosage of only ~2 nanoparticles/cell. Applications include mRNA expression in several organs upon systemic administration, in vivo gene silencing by siRNA-LNPs with superior activity in liver endothelial cells or, when including targeting ligand cRGDfk, in tumor endothelial cells. Furthermore, chemical evolution of lipo-XPs resulted in potent carriers for CRISPER mediated genome editing, either via Cas9 mRNA/sgRNA or Cas9 protein/sgRNA RNPs, triggering therapeutic genome editing of immune check-point genes in cancer or in vivo editing of dystrophin. Up to >50% homology directed repair (HDR) was obtained in cell cultures treated with Cas9/dsgRNA in combination with donor DNA template.

Keywords: Cas9, Genome Editing, LNP, mRNA, Nanoparticle, Polyplex

Biography: Prof. Ernst Wagner is Chair of Pharmaceutical Biotechnology, Department Pharmacy, LMU Munich (since 2001). He was Director Cancer Vaccines, Boehringer Ingelheim 1992-2001 (world-wide first polymer-based gene therapy in 1994), 1987-1995 Group Leader at IMP Vienna and Vienna University Biocenter, 1985-1987 postdoc at ETH Zurich, 1985 PhD (TU Vienna). He is Academician of European Academy of Sciences, Controlled Release Society (CRS) College of Fellows, Honorary Professor at U of Sichuan. He authored ≥ 524 publications, with ≥ 54 800 citations, h-index 117 (GS).

2ND INTERNATIONAL CONFERENCE ON CELL SCIENCE AND REGENERATIVE MEDICINE

Adriane Belló-Klein, Cristina Campos Carraro, Patrick Türck, Alex Sander Araujo, Alexandre Luz de Castro, Letícia Koester

Universidade Federal do Rio Grande do Sul (UFRGS), Porto Alegre, Brazil

Therapeutics with B-Caryophyllene nanoemulsions for Pulmonary Arterial Hypertension

Abstract: Our research group has studied animal models of pulmonary arterial hypertension (PAH), which is an incurable disease characterized by increased pulmonary vascular resistance (PVR), right ventricular failure, and premature death. Compounds with vasodilatory characteristics, such as β-caryophyllene, extracted from the essential oils of many plants, could be promising therapeutics for PAH. We studied the effects of free and nanoemulsion of β-caryophyllene in the redox state and heart function of rats with PAH. Male Wistar rats (170g, n=6/group) were divided into four groups: control (CO), monocrotaline (MCT), monocrotaline + β-caryophyllene (MCT-Bcar) and monocrotaline + nanoemulsion with β-caryophyllene (MCT-Nano). PAH was induced by MCT (60 mg/kg i.p.) and, 7 days later, treatment with β-caryophyllene or nanoemulsion (by gavage, 176 mg/kg/day), or vehicle was given for 14 days. Echocardiographic and hemodynamic measurements were performed and after, rats were killed by decapitation. Right ventricle (RV) was removed for morphometry, and lungs to evaluate oxidative stress (lipid peroxidation, xanthine oxidase, NADPH oxidase), antioxidant enzymes, total sulphydryl groups, nitric oxide synthase (NOS) activity and endothelin-1 receptors A (ETA-R) and B (ETB-R) expression. It was observed RV hypertrophy, accompanied by an increase in PVR and RV diastolic and systolic pressures (RVSP and RVEDP, respectively) and in mean pulmonary arterial presure (mPAP) in the MCT group. Treatment with both, free and in nanoemulsion β-caryophyllene significantly ($P < 0.05$) reduced RV hypertrophy, mPAP, RVSP and lung lipid peroxidation. The reduction in RVSP was more pronounced in the MCT-Nano group. Moreover, RVEDP decreased only in the MCT-Nano group. These treatments also increased superoxide dismutase, catalase and NOS activities and decreased ETA-R and ETB-R expressions. Both free and nanoemulsion of β-caryophyllene improved mPAP, PVR and oxidative stress parameters. However, β-caryophyllene in nanoemulsion was more effective in attenuating PAH effects, which might represent a promising strategy to treat patients with PAH.

Keywords: β-caryophyllene, nanoemulsion, pulmonary hypertension, endothelial dysfunction

Biography: I am a biologist, with Masters and PhD in the Physiology (UFRGS, Brazil), and post-doctoral fellowship in the University of Manitoba, Canada. I am full professor of Physiology in Brazil. My research interests are on the participation of oxidative stress in the pathogenesis of heart failure, using animal models of myocardial infarction, right ventricle failure, arterial hypertension. I have studied the effect of antioxidant compounds, such as β-caryophyllene, sulforaphane, pterostilbene, boldine, melatonin, in models of heart failure. We have studied the efficacy of nanoemulsions and nanocapsules formulations for the treatment of heart diseases.

2ND INTERNATIONAL CONFERENCE ON CELL SCIENCE AND REGENERATIVE MEDICINE

Kunxin Luo

Department of Molecular and Cell Biology, University of California, Berkeley, California, USA

Regulation of Hippo/TAZ signaling by phase separation

Abstract: Transcription regulation involves the coordination of a large number of transcription factors and complexes on specific DNA regions in response to a diverse array of signals. liquid-liquid phase separation (LLPS) has been shown to play a critical role in transcriptional initiation, elongation and super-enhancer-driven transcription activation. However, it is not clear whether pathway-specific transcription factors also employ LLPS to regulate gene expression. Using Hippo signaling pathway as a model, we demonstrated for the first time that pathway-specific transcription factors also engage the phase separation mechanism for efficient and specific transcription activation. These LLPS condensates may serve as scaffolds to concentrate proteins with similar functions, or to insulate protein complexes that act in different signaling pathways to generate specificity.

Keywords: Hippo signaling, phase separation, TAZ

Biography: Dr. Kunxin Luo is a Professor of Cell and Developmental Biology in the Department of Molecular and Cell Biology at University of California, Berkeley.

2ND INTERNATIONAL CONFERENCE ON CELL SCIENCE AND REGENERATIVE MEDICINE

Toshiyuki Hori

Ritsumeikan University Kusatsu/Japan

Minimal Requirements for Cancer Initiation: A Comparative Consideration of Three Prototypes of Human Leukemia

Abstract: Even if its completed form is complex, cancer originates from one or two events that happened to a single cell. A simplified model can play a role in understanding how cancer initiates at the beginning. The pathophysiology of leukemia has been studied in the most detailed manner among all human cancers. In this review, based on milestone papers and the latest research developments in hematology, acute promyelocytic leukemia (APL), chronic myeloid leukemia (CML), and acute myeloid leukemia (AML) with RUNX1-RUNX1T1 are selected to consider minimal requirements for cancer initiation. A one-hit model can be applied to the initiation of APL and CML whereas a two-hit model is more suitable to the initiation of AML with RUNX1-RUNX1T1 and other AMLs. Even in cancer cells with multiple genetic abnormalities, there must be a few mutant genes critical for the mutant clone to survive and proliferate. Such genes should be identified and characterized in each case in order to develop individualized target therapy.

Keywords: cancer initiation, two-hit model, AML, APL, CML

Biography: 1980 Graduate of Kyoto University (MD), 1988 PhD of Kyoto University, 1988-1991 DNAX Research Institute, 1991-1998 Institute for Virus Research, Kyoto University, 1998-2008 Lecturer at Graduate School of Medicine, Kyoto University, 2008- Professor at Ritsumeikan University.

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The role of PARP1 in reprogramming transcription upon genotoxic stress

Abstract: Genotoxic stress triggers a genome-wide transcriptional reprogramming, which involves an initial transcriptional shutdown followed by a recovery phase. While these processes are crucial for DNA repair and cell survival, the underlying molecular mechanisms remain poorly understood. In this talk, I will first present our recent work uncovering the role of PARP1-P-TEFb signaling in mediating the rapid transcriptional shutdown in response to DNA damage. This shutdown is essential for maintaining genome stability and ensuring cell survival during genotoxic stress. I will then discuss our findings that highlight PARP1's critical role in the recovery phase of transcription, where we discovered that PARP1 activity stabilizes key transcription factors necessary for optimal transcriptional restart after DNA damage. Together, these findings reveal the multifaceted role of PARP1 in orchestrating transcriptional reprogramming in response to genotoxic stress.

Keywords: Transcriptional reprogramming, DNA damage, PARP1, genotoxic stress

2ND INTERNATIONAL CONFERENCE ON CELL SCIENCE AND REGENERATIVE MEDICINE

Irina V.Guzhova

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Tumor relaps and alarmins

Abstract: Cancer recurrence is regulated by a variety of factors, among which is the material of dying tumor cells; it is suggested that remaining after anti-cancer therapy tumor cells receive a signal from proteins called damage-associated molecular patterns (DAMPs), one of which is heat shock protein 70 (Hsp70). We found that conditioned medium (CM) of dying tumor cells contains tumor regrowth-initiating factors and the removal of one of them, Hsp70, caused a reduction in the relapse-activating capacity. The pull out of Hsp70 alone using ATP-agarose had no effect on repopulation, while the immunodepletion of Hsp70 dramatically reduced its repopulation activity. Using proteomic and immunochemical approaches, we showed that Hsp70 in conditioned medium binds and binds another abundant alarmin, the High Mobility Group B1 (HMGB1) protein; the complex is formed in tumor cells treated with anti-cancer drugs, persists in the cytosol and is further released from dying tumor cells. Accordingly, dissociating the complex with Hsp70 chaperone inhibitors significantly inhibited the pro-growth effects of the above complex, in both in vitro and in vivo tumor relapse models. These data led us to suggest that the abundance of the Hsp70-HMGB1 complex in the extracellular matrix may serve as a novel marker of relapse state in cancer patients, while specific targeting of the complex may be promising in the treatment of cancers with a high risk of recurrence.

Keywords: tumor relapse, alarmins, Hsp70, HMGB1, protein complex

Biography: Irina Guzhova was born and graduated from Leningrad State University in Leningrad (now St. Petersburg), Russia. From 1989 PhD, Cell Biology, from 2005 - Dr.Sci, Doctor of Biology (Cell Biology), equivalent of professorship. In 1992-1993 worked as Visiting Scientist in Department of Pathology, University Hospital, Uppsala, Sweden, in 1994-1997 was an Associate Professor, Department of Biology of Recognition, State University of Northern Fluminense, Campos/RJ, Brazil. Currently she is Head of Department in the Institute of Cytology of Russian Academy of Sciences, St.Petersburg, Russia. She works in the field of cellular proteostasis system and its functions in cancer and neurodegenerative diseases.

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Roberto Moreno, Natalia Escabias, Irene Zamora Marmol, Julia Casado Gómez-Pallete, Nuria Rocha, Laura M. Pérez, Alvaro Avivar-Valderas, Olga de la Rosa.

Takeda Madrid Cell Therapy Technology Center (former TiGenix), Madrid, Spain

Single-Cell Sequencing for the Characterization of Mesenchymal Cell Therapy Products: A Tool to Assess Batch-to-Batch Variability in Allogeneic Manufacturing

Abstract: Comprehensive characterization of cell therapy products is crucial to ensure product consistency, quality, and safety, particularly in the context of allogeneic manufacturing. In this study, we implemented a single-cell RNA sequencing (scRNA-seq) platform that integrates the Chromium system (10x Genomics) with Illumina sequencing to enable transcriptomic profiling of mesenchymal stromal cells (MSCs) at single-cell resolution. This approach enables the identification of transcriptionally distinct subpopulations within MSC products and provides insights into their functional heterogeneity. The platform was applied to multiple production batches of allogeneic MSCs to investigate inter-batch variability. Our results reveal differences in cell composition and gene expression signatures between batches, highlighting the presence of variable proportions of subpopulations potentially associated with immunomodulatory capacity, proliferation, or differentiation potential.

Our findings demonstrate the value of scRNA-seq as a high-resolution tool for batch comparability assessments and the identification of critical quality attributes (CQAs) in MSC-based products. The integration of this technology into manufacturing workflows supports the development of robust quality control strategies, facilitates more predictable production outcomes, and contributes to more cost-effective manufacturing of allogeneic cell therapies.

Keywords: Cell therapies, donor-variability and Single-cell Sequencing.

Biography: Roberto Moreno Vellisca is a Cell Therapy Production Technician at Takeda, with a titulation as a Histopathology and Cytology Technician. He has extensive experience in biomedical research and specializes in Next Generation Sequencing, with a particular focus on single-cell RNA sequencing (scRNA-Seq). His work centers on optimizing sequencing workflows and applying cutting-edge technologies to support the development of advanced cell-based therapies. He brings a strong combination of technical expertise and a deep interest in innovation and translational science.

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Celia Martinez, Natalia Escabias, Irene Zamora Marmol, Alberto Vazquez, David Perez, Laura M. Pérez, Alvaro Avivar-Valderas, Olga de la Rosa

Takeda Madrid Cell Therapy Technology Center (former TiGenix), Madrid, Spain

Development an iPSC-Derived Mesenchymal Product: Toward a Consistent Allogeneic Cell Therapy Product with Reduced Donor Variability

Abstract: The intrinsic heterogeneity of donor-derived mesenchymal stromal cells (MSCs) presents a significant challenge for the manufacturing of standardized allogeneic cell therapy products. To address this limitation, we established and characterized an induced pluripotent stem cell (iPSC) bank as a renewable, well-defined material for the generation of MSCs with reduced donor variability.

iPSC lines were generated under xeno-free conditions and subjected to rigorous quality control, including karyotype analysis, pluripotency marker expression, and genomic integrity. Selected iPSC clones were then differentiated into MSCs using a defined, scalable protocol. The resulting iPSC-derived MSCs (iMSCs) underwent a release testing panel commonly applied in cellular therapies, including identity ($CD73^+$, $CD90^+$, $CD105^+$, $CD45^-$, $CD34^-$), potency (through immunomodulatory assays), and purity (via flow cytometry and residual pluripotency marker exclusion).

Beyond standard release testing, comparative analyses were performed to assess the mechanistic functionality of iMSCs versus donor-derived MSCs in relation to their known modes of action in vivo. These included assays for cytokine secretion profiles and modulation of inflammatory signalling pathways. iMSCs demonstrated consistent and reproducible functional activity.

These findings support the possible use of iPSC-derived MSCs as a reliable and mechanistically active allogeneic cell therapy platform, with potential for improved manufacturing control and predictable in vivo performance.

Keywords: iPSC, MSC, allogeneic, donor-variability and manufacturing.

Biography: Celia Martínez Prieto is currently working as a Cell Therapy Production Technician at Takeda, with an academic background in Clinical Laboratory Science and Biomedical Science. He has extensive experience in biomedical research and a strong focus on cell culture.
Throughout his career, he has worked with various cell types, especially induced pluripotent stem cells (iPSCs), including their culture, differentiation, and characterization. He brings solid technical expertise and a proactive, innovative mindset, always looking to implement new techniques to optimize and advance current processes in the field of regenerative medicine.

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Alberto Vazquez Sanz, David Pérez Cabrera & Irene Zamora Marmol

Takeda, Madrid, Spain

Role of PGE-2 in the Immunomodulatory Function of ASC

Abstract: The immunomodulatory role of ASC (Adipose-derived Stem Cells) on different immune system cell types has been extensively described. Depending on the stimuli present in the microenvironment, ASC can guide the immune response toward a pro-inflammatory pathway to combat injury or resolve inflammation by polarizing cells into an anti-inflammatory phenotype, thereby preventing prolonged damage.

One of the key molecules is PGE-2 (Prostaglandin E2), whose expression is induced in presence of a inflammatory environment and released into the medium. PGE2 play a critical role in the survival of MSC (Mesenchymal Stem Cells), enhances their immunosuppressive capabilities, and promotes tissue repair. In our previous work, we have demonstrated that PGE-2 secreted by ASC modulate monocyte differentiation and drive macrophage polarization toward an anti-inflammatory M2 phenotype, contributing to the resolution of inflammation and tissue repair.

A PGE2 KO (knockout) ASC line has been generated to study the effect of ASC-conditioned medium on various leukocyte subpopulations. We now aim to expand the study of PGE-2's role using this KO model, examining, for example, how the absence of PGE2 affects the cytotoxicity of PBMCs toward ASC.

Keywords: ASC, PGE-2, Knockout, Immune response, conditioned medium.

Biography: Quality Control Technician at Takeda with solid expertize in quality within the biopharmaceutical sector. As part of the Global Quality team at Quality Control Madrid CTTC, I focus on achieving excellence in regulated manufacturing operations and ensuring rigurous standards. I actively contribute to the sustainable development and continuos improvement of innovative biological therapies, which are essencial for advancing healthcare.

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2ND INTERNATIONAL CONFERENCE ON CELL SCIENCE AND REGENERATIVE MEDICINE

David Pérez Cabrera, Alberto Vazquez Sanz & Irene Zamora Marmol

Takeda, Madrid, Spain

Advancing Identity and Purity Testing Methods for Cellular Therapies

Abstract: The design and development of robust identity and purity tests is essential for the safe commercialization of cellular therapies. These analytical methods play a pivotal role in ensuring product consistency during routine quality control testing, reducing unforeseen issues and contributing to long-term operational efficiency. Guidance documents such as ICH Q14 provide a foundation for developing efficient and compliant methods tailored to quality control needs.

Identity and purity tests are conventionally performed as separate assays, often generating greater costs due to elevated consumption of reagents, materials, and time. Combining these assays into a unified method represents a promising avenue to optimize resource utilization, while maintaining precision, reliability, and compliance. Such a strategy requires careful consideration of assay design principles to ensure successful validation and reproducible results during routine application.

To contribute to this evolving analytical landscape, ou our company developed a practical excersice consisting on setting to practice an adequate development strategy for testing cellular therapy products. This effort not only streamlines the testing process but also lays the foundation for a smooth transition to subsequent validation stages.

As part of this initiative, we focused on the characterization of T-cell-based products, with an emphasis on applications in CAR-T therapies. By evaluating the critical specifications required for identity and purity assessments, we established methodological criteria that allow accurate and reproducible characterization of T-cell identity and measure purity levels. These findings enabled us to design a combined analytical approach that meets quality control demands while addressing operational bottlenecks often encountered in separate assay methodologies.

This work exemplifies an innovative step toward advancing state-of-the-art quality control methods for cellular therapies, reinforcing their reliability, efficiency, and applicability in routine manufacturing environments.

Keywords: Identity, Purity, Cellular, Therapies, CAR-T, T-Cell

Biography: Production Technician at Takeda, part of the Manufacturing Operations team, specializing in biologics within GMS Biologics OpU. With a background in the pharmaceutical industry, my role focuses on ensuring operational excellence in highly regulated production processes, contributing to the quality and sustainability of innovative therapies.

2ND INTERNATIONAL CONFERENCE ON CELL SCIENCE AND REGENERATIVE MEDICINE

Julia Casado Gómez-Pallete,
Nuria Rocha Alcubilla

Takeda, Madrid, Spain

Transcriptomic Platform for Donor Characterization in Cell Therapies

Abstract: Cell therapies use living cells to repair or treat damaged tissues, with the cells' origin playing a crucial role in the effectiveness of the treatment. The manufacturing process follows common steps shared across cell therapy production, typically including the generation of a master stock, a drug substance, and ultimately the final drug product.

We have developed an in-house transcriptomic platform with three main goals: (1) to build a library of all batches used in clinical and commertial , (2) to identify transcriptomic signatures associated with favorable efficacy outcomes in order to guide the selection of intermediate products for expansion into the final product, and (3) to study transcriptomic changes throughout the manufacturing process. Variability in batch performance suggests that higher remission rates may be linked to specific characteristics of the source material or specific cell types or subpopulations.

To address these aims, we have conducted transcriptomic analyses in different scenarios: baseline projects, where we assess batch differences; stimulation projects, designed to replicate in vitro the inflammatory conditions where the therapy will act and evaluate batch-specific responses; and longitudinal projects, which track cellular changes across manufacturing stages.

Single-cell RNA sequencing is performed using 10x Genomics and Illumina platforms. Count matrices are generated with the Cell Ranger pipeline. Downstream analyses focus on identifying cell subpopulations, characterizing their functions, evaluating changes under stimulation, and finding differentially expressed genes and pathways.

Striking observations have been identified using this platform, for example, the impact of geographical origin on transcriptomic profiles, the effect of inflammatory stimuli in mimicking patient conditions, and the homogenizing effect of the manufacturing process, with MCS samples showing greater diversity than their corresponding DS products.

Keywords: Cell therapy, transcriptomics, bioinformatics, single-cell RNA-seq, batch variability, inflammatory stimulation

2ND INTERNATIONAL CONFERENCE ON CELL SCIENCE AND REGENERATIVE MEDICINE

Joan-Lluis Vives Corrons.MD.PhD

Emeritus Prof. University of Barcelona
Leukaemia Research Institute Josep Carreras
CATALONIA (Spain)

New-Generation Ektacytometry Study of Red Blood Cells in Different Hemoglobinopathies and Thalassemia

Abstract: Next-generation ektacytometry, as provided by the osmoscan module of the Laser Optical Rotational Red Cell Analyser (LoRRca) MaxSis, is currently one of the most advanced complementary diagnostic tools for congenital rare anemias associated with red blood cell (RBC) defects. Osmotic gradient ektacytometry (OGE) is considered the gold standard for diagnosing RBC membrane disorders, particularly hereditary spherocytosis (HS). A hallmark of hereditary hemolytic anemias is impaired RBC deformability, which leads to reduced cell survival and is generally attributed to abnormal cell shape, increased rigidity, or dehydration.

To date, next-generation ektacytometry has been primarily employed for the differential diagnosis of RBC membranopathies, while its application in structural hemoglobinopathies and thalassemia remains limited. However, with the recent development of novel therapeutic strategies for hemoglobinopathies, particularly sickle cell disease and β-thalassemia, there is growing clinical interest in ektacytometry, warranting further exploration.

In this study, we evaluated the OGE profiles obtained using the osmoscan module of the LoRRca ektacytometer in 96 patients with different hemoglobinopathies, including both structural variants and thalassemia. Our objective was to assess the utility of OGE for the early diagnosis of these disorders, either in isolation or in co-inheritance with other hereditary RBC defects. Furthermore, we aimed to enhance our understanding of the contributions of RBC deformability, osmotic fragility, and intracellular viscosity to the pathophysiology of hemolysis, particularly in the context of rare anemias.

Our findings indicate that the osmoscan profile provides valuable complementary insights into RBC deformability and hydration homeostasis, which may improve our understanding of the mechanisms underlying reduced RBC survival and hemolysis in affected patients.

Biography: Prof. Joan Lluís Vives Corrons is Professor Emeritus at the University of Barcelona and an honorary researcher at the Josep Carreras Institute for Leukaemia Research (IJC). He specializes in rare anemias, focusing on the molecular and genetic mechanisms of red blood cell (RBC) disorders, including enzymopathies, membranopathies, and hemoglobinopathies.

For over 30 years, he led the Haematology Laboratory Department (1976-1997) and the Red Blood Cell Pathology Unit (1998-2016). As principal investigator of 35+ projects, his research has centered on erythroenzymopathies (e.g., G6PD and PK deficiencies), hemoglobinopathies (e.g., sickle-cell disease and thalassemia), and hereditary hemolytic anemias.

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Decellularisation barotrauma in rat liver scaffolds compromises scaffold quality and recellularisation capacity

Abstract: Liver transplantation remains the only life-saving treatment for end-stage liver failure, but is limited by organ shortage, and transplanted patients face significant immunosuppression-related pathologies. Bioengineering neo-organs by repopulation of decellularised scaffolds with candidate cells offers the possibility of recipient-specific, immunosuppression-free transplantation. Scaffold preparation requires cell removal whilst minimising damage to extra-cellular matrix (ECM), which provides biophysical/biochemical cellular fate-defining instructions.

Portal vein perfusion with decellularisation solution is an established method of generating liver scaffolds, but flow rate effects on scaffold characteristics are poorly defined. We therefore studied effects of decellularisation flow rates on scaffold properties by light-microscopy, immunofluorescence, residual DNA, glycosaminoglycan and hepatocyte growth factor content, structural ECM proteins, and scaffold recellularisation quality with vascular progenitor stem cells.

We show that decellularisation solution flow rate is a determining factor of scaffold physical and biochemical quality and report the appearance of previously undescribed disruptions within scaffold ECM with 3D structure consistent with false passages distinct from vascular lumina. Compared to sub-physiological flow rates (5mL/min), disruptions were 20-fold more frequent ($p=0.0022$) at physiological and higher flow rates (15 and 30 mL/min). Disruptions resulted in poor decellularisation with 5-fold higher levels of remnant DNA ($p=0.0045$), out-with established quality criteria. Disruptions were also associated with poor scaffold recellularisation, with 2-fold reduction in sinusoidal repopulation ($p=0.0066$), 7-fold imbalance in peripheral to central scaffold cellular engraftment ($p=0.0049$), 3-fold and 4-fold reduction in portal and hepatic venous recellularisation efficiency ($p=0.0001$).

This is the first report demonstrating barotrauma to ECM resulting from flow rate variations, with associated poor decellularisation and recellularisation parameters. These results inform future decellularisation techniques to optimise scaffold repopulation with the objective of regenerative bioengineering.

Keywords: Scaffolds, Biomaterial-cell interaction, Materials structure, Stem cells, Vascular, Perfusion

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Biography: Zeeshan Afzal is a specialty registrar in the run-through General Surgery training program at Addenbrooke's Hospital, University of Cambridge, and a member of the Royal College of Surgeons of England. He completed his medical degree at the University of Leicester, followed by further clinical and surgical training in Cambridge.

He is currently working in the Department of Transplant Surgery at Addenbrooke's Hospital and is pursuing a PhD at the University of Cambridge, focusing on bioengineering liver tissue using bone marrow progenitor cells. Zeeshan aspires to become a consultant in Hepato-Pancreato-Biliary and Transplant Surgery, with a special interest in regenerative medicine.

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Isolation of CD133 positive cells from rat bone marrow by immune-magnetic beads and Fluorescence-activated cell sorting

Abstract: In the rat model, following liver injury, a significant proportion of liver sinusoidal endothelial cells (LSECs) proliferating in regenerating liver are derived from CD133+ bone marrow (BM) progenitors, which proliferate in the BM, migrate into the blood stream and engraft into the liver, where they differentiate into mature LSECS, and express high levels of Hepatocyte Growth Factor, thus promoting hepatocyte proliferation. The study aim was to isolate CD133+ cells from rat BM using (1) direct magnetic bead separation with human CD133 antibody conjugated magnetic beads, (2) indirect magnetic bead separation using FITC-labelled rat specific CD133 antibody and anti-FITC conjugated magnetic beads and (3) Fluorescence-activated cell (FACS) sorting with FITC labelled rat specific CD133, and compare efficacy and practicality of these techniques.

Rat BM cells were labelled with FITC conjugated rat specific anti CD133 antibody and further processed for either method 1, 2 or 3. Direct magnetic bead separation produced poor enrichment of rat CD133+ cells. This is likely due to poor affinity of human magnetic beads towards rat CD133 molecule resulting in loss of cells. In contrast, indirect magnetic bead separation with rat specific FITC-labelled CD133 antibody and anti FITC magnetic beads, or FACS sorting both resulted in enhanced rat CD133+ cell enrichment. Although similar in amino acid sequence, the differences between human and rat CD133 molecules are may be sufficient to result in poor binding of the human CD133 antibody to the rat homolog molecule. Consequently,whilst effective in enriching human CD133+ cells, magnetic beads conjugated to human CD133 do not produce effective enrichment of rat CD1133+ cells. In contrast, rat specific CD133 antibody-based methods result in effective CD133+ cell enrichment from rat BM.

Keywords: Regenerative; Bioengineering; Liver; Decellularisation; CD133, magnetic beads, Fluorescence-activated cell sorting

Biography: Zeeshan Afzal is a specialty registrar in the run-through General Surgery training program at Addenbrooke's Hospital, University of Cambridge, and a member of the Royal College of Surgeons of England. He completed his medical degree at the University of Leicester, followed by further clinical and surgical training in Cambridge. He is currently working in the Department of Transplant Surgery at Addenbrooke's Hospital and is pursuing a PhD at the University of Cambridge, focusing on bioengineering liver tissue using bone marrow progenitor cells. Zeeshan aspires to become a consultant in Hepato-Pancreato-Biliary and Transplant Surgery, with a special interest in regenerative medicine.

2ND INTERNATIONAL CONFERENCE ON CELL SCIENCE AND REGENERATIVE MEDICINE

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Portal venous repopulation of decellularised rat liver scaffolds with syngeneic bone marrow stem cells

Abstract: Liver transplantation is the only life-saving treatment for end-stage liver failure but is limited by the organ shortage and consequences of immunosuppression. Repopulation of decellularised scaffolds with recipient cells provides a theoretical solution, potentially allowing reliable and timely organ sourcing without immunosuppression. Recellularisation of the vasculature of decellularised liver scaffolds was investigated as an essential prerequisite to the survival of other parenchymal components,and with a focus on Liver Sinusoidal Cells (LSECs) given their central role in global hepatic function.

Rat liver decellularisation was carried out by portal vein (PV) perfusion using a detergent-based solution. Scaffolds were perfused via the PV with culture medium at 37°C and infused with primary bone marrow (BM) stem cells. BM stem cells were assessed for key marker expression using fluorescence-activated cell sorting (FACS), and recellularised scaffolds analysed by light (LM), electron (EM) and immunofluorescence (IF) microscopy. Recellularised scaffolds changed in macroscopic appearance from a translucent to an opaque structure by day 30. Stem cells engrafted in portal, sinusoidal and hepatic vein compartments on LM with cell alignment reminiscent of endothelium on EM. Engrafted cells expressed LSEC endocytic receptors (mannoseR, FcR and stabilinR), and cell surface marker expression altered following engraftment from a haematopoietic (CD31- CD45+) to an endothelial phenotype (CD31+ CD45−) on FACS and IF.

This is the first report of BM stem cells used to repopulate decellularised liver. This approach is clinically relevant as the cells are recipient specific, sourceable in relevant numbers, and not subject to oncogenic concerns that relate to cell lines or induced pluripotent stem cells. These results represent a step towards complete recellularisation of liver vasculature and progress towards generation of transplantable neo-organs.

Keywords: Bone marrow stem cell, decellularisation, liver, recellularisation, scaffold, vasculature

Biography: Emmanuel Huguet is a Consultant Liver Transplant and Hepato-Pancreato-Biliary surgeon at Addenbrookes Hospital, Cambridge University, a fellow of the Royal College of Surgeons of England, and International Hepato-Pancreato-Biliary Association member. He completed his medical degree in Bristol, and subsequently undertook a PhD in cancer molecular biology at Oxford University in the Institute of Molecular Medicine, John Radcliffe Hospital. He carried out surgical training in Oxford, the Centre Hepatobiliaire Paul Brousse Hospital in Paris, and Cambridge, where he now leads liver metastasis surgery. Alongside clinical duties, he has an interest in regenerative medicine and directs research in decellularised liver scaffolds repopulation.

2ND INTERNATIONAL CONFERENCE ON CELL SCIENCE AND REGENERATIVE MEDICINE

Xiao Yi, Xiaomei Liang

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Novel Placenta-Derived Artificial ECM Platform for Bioengineered Organ Construction

Abstract: Human organ construction holds immense potential for regenerative medicine, offering strategies to replace damaged tissues and treat refractory diseases. The extracellular matrix (ECM) serves as the fundamental for constructing functional organ units, however, developing strategies for artificially regulating the ECM to synthesize tissue-specific microenvironments to construct functional organ units remains a critical challenge.

We conduct research focused on the development of placenta-derived artificial ECM:

1) By systematically studying of the core ECM components and structural features across different placental layers and employing multidimensional data analysis and high-throughput screening, we elucidated the regulatory mechanisms of artificial ECM that guiding its structural design and performance adjustment and finally developed an efficient and precise synthesis strategy for placenta-derived artificial ECM.

2) By revealing the regulation mechanisms underlying the molecular assembly and adaptation of biological functions, a biomimetic culture system was established through multi-scale molecular assembly. This system enabled the production of function-enhanced stem cells and organoids, notably increasing extracellular vesicle (EV) secretion by 70-fold, and facilitated the culture of autologous endometrial organoids from patients with severe intrauterine adhesions (IUA).

3) A biomimetic carrier was engineered to carry diverse organ functional units, matching human tissue architecture to promote integration upon transplantation. And the system enabled precise adaptation of biointerface microstructures and adhesion sites across diverse organ functional units, which facilitated modular assembly and thereby constructed biomimetic organs.

For example, the bioengineered endometrium demonstrates structural and functional restoration after transplantation for effective severe IUA therapy, paralleled by the generation of mimetic ovary exhibiting both gametogenesis and endocrine functionality. This novel artificial ECM-based organ construction technology demonstrates robust translational potential for applications in organ repair and regenerative therapies.

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Keywords: extracellular matrix, biomimetic organ, in vitro organ construction, stem cell, tissue engineering

Biography: Prof. Xiao Yi is a professor in the Translational Medicine Research Center, Zhujiang Hospital, Southern Medical University. She works on stem cells/organoids and tissue engineering. She published 10 papers as the first/corresponding author in Science Advances, Advanced Materials, Biomaterials etc., and obtained approval for Investigational New Drug (IND) and inspection of Class III medical device registrations. Prof. Yi was elected into the Outstanding Youth Program of Guangdong Basic and Applied Basic Research in 2023, acquired supporting by National Key Research and Development Program of China in 2024 and won the gold award in the China Postdoctoral Innovation and Entrepreneurship Competition in 2021.

2ND INTERNATIONAL CONFERENCE ON CELL SCIENCE AND REGENERATIVE MEDICINE

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Expression of O-GlcNAcylation in pulp tissue and dental pulp stem cells of healthy dental organs

Abstract: O-GlcNAcylation is a reversible post-translational modification in which a molecule of N-acetyl-D-glucosamine is added to a serine or threonine residue. It is regulated by O-N-acetylglucosaminyltransferase (OGT) and N-acetyl-β-D-glucosaminidase (OGA). This modification has already been reported in various tissues and cell types; however, it has not been reported in healthy pulp tissues nor in dental pulp stem cells (DPSC). The main objective of this research was to identify O-GlcNAc and its enzymes in different regions of healthy pulp tissues and in DPSCs both in situ and in vitro, respectively.

Materials and Methods: Twenty-four pulp tissue samples were obtained, and the expression of O-GlcNAc, OGT, and OGA was analyzed by immunofluorescence using specific antibodies, exploring their presence in different regions of the dental pulp. DPSCs were isolated from healthy dental organs and identified in vitro using the anti-STRO-1 antibody. O-GlcNAc expression in DPSCs was confirmed in vitro by Western blot.

Results: O-GlcNAc and its enzymes were expressed in different regions of the pulp tissue and in DPSCs. OGT and O-GlcNAc were more abundantly expressed in the odontoblastic zone, the cell-rich zone, and the central pulp zone. OGA was distributed throughout the different zones of the pulp tissue with lower intensity compared to OGT.

Conclusions: Our results suggest that O-GlcNAcylation could be relevant to the homeostasis of human dental pulp and DPSCs. Our results suggest that O-GlycNAcylation could be relevant for the homeostasis of human dental pulp and DPSCs and could have a role in future regenerative treatments in the teeth and oral cavity.

Keywords: Dental Pulp, Dental pulp stem cells (DPSC), O-GlcNAcylation, OGT, OGA, IHC.

2ND INTERNATIONAL CONFERENCE ON CELL SCIENCE AND REGENERATIVE MEDICINE

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Open abdomen and negative pressure wound therapy for acute peritonitis especially in the presence of anastomoses and ostomies

Abstract: Acute peritonitis is a relatively common intra-abdominal infection that a general surgeon will have to manage many times in his surgical carrier. Usually it is a secondary peritonitis caused either by direct peritoneal invasion from an inflamed infected viscera or by gastrointestinal tract integrity loss. The mainstay of treatment is source control of the infection which is in most cases surgical. In the physiologically deranged patient there is indication for source control surgery in order to restore the patient's physiology and not the patient anatomy utilizing a step approach and allowing the patient to resuscitate in the intensive care unit. In such cases there is a clear indication for relaparotomy and the most common strategy applied is open abdomen. In the open abdomen technique the fascial edges are not approximated and a temporarily closure technique is used. In such cases the negative pressure wound therapy seems to be the most favourable technique, as especially in combination with fascial traction either by sutures or by mesh gives the best results regarding delayed definite fascial closure, and morbidity and mortality.

In our surgical practice we utilize in most cases the use of negative pressure wound therapy with a temporary mesh placement. In the initial laparotomy the mesh is placed to approximate the fascial edges as much as possible without whoever causing abdominal hypertension and in every relaparotomy the mesh is divided in the middle and, after the end of the relaparotomy and dressing change, is approximated as much as possible in order for the fascial edges to be further approximated. In every relaparotomy the mesh is further reduced to finally allow definite closure of the aponeurosis. In the presence of ostomies the negative pressure wound therapy can be applied as usual taking care just to place the dressing around the stoma and the negative pressure can be the standard of -125 mmHg. However, in the presence of anastomosis the available date are scarce and the possible strategies are to differ the anastomosis for the relaparotomy with definitive closure and no further need of negative pressure wound therapy, to low the pressure to -25 mmHg in order to protect the anastomosis and to place the anastomosis with omentum in order to avoid direct contact to the dressing. The objective should be early closure, within 7 days, of the open abdomen to reduce mortality and complications.

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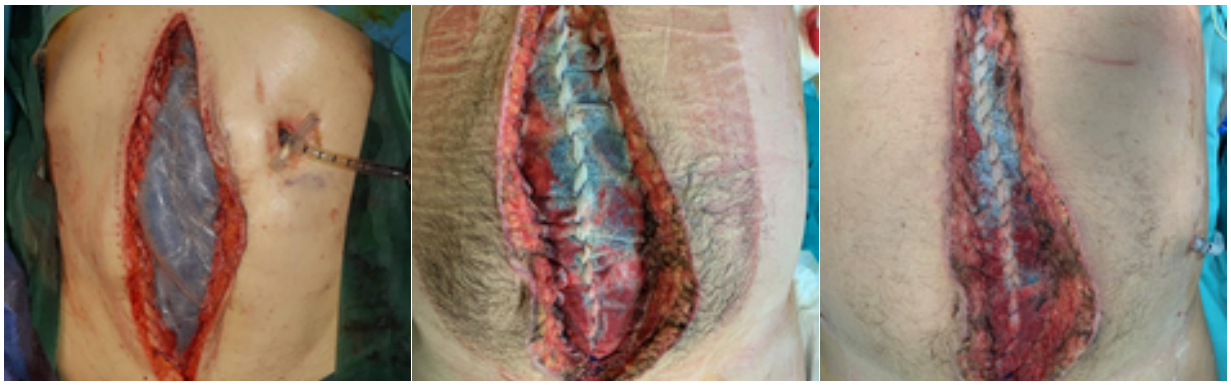

What will audience learn from your presentation?

•Open abdomen should be carefully tailored to each single patient taking care to not overuse this effective tool

•Every effort should be exerted to attempt abdominal closure as soon as the patient can physiologically tolerate it

•All the precautions should be considered to minimize the complication rate

•Negative pressure wound therapy in peritonitis seems to improve results in terms of morbidity and mortality and definitive abdominal closure

•When an ostomy is present there are only subtle differences in management

•When an anastomosis is present consider:

•Placing the anastomosis remotely to visceral protective layer and thus the negative pressure

•Place the omentum over the anastomosis

•Decrease the negative pressure to even as low as -25 mmHg

•Perform a sutured anastomosis rather than a stapled one

Biography: Dr. Ioannidis is currently an Assistant Professor of Surgery in the Medical School of Aristotle University of Thessaloniki. He studied medicine in the Aristotle University of Thessaloniki and graduated at 2005. He received his MSC in “Medical Research Methodology” in 2008 from Aristotle University of Thessaloniki and in “Surgery of Liver, Biliary Tree and Pancreas” from the Democritus University of Thrace in 2016. He received his PhD degree in 2014 from the Aristotle University of Thessaloniki as valedictorian for his thesis “The effect of combined administration of omega-3 and omega-6 fatty acids in ulcerative colitis. Experimental study in rats.” He is a General Surgeon with special interest in laparoscopic surgery and surgical oncology and also in surgical infections, acute care surgery, nutrition and ERAS and vascular access. He has received fellowships for EAES, ESSO, EPC, ESCP and ACS and has published more than 180 articles with more than 3000 citations and an H-index of 28

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2ND INTERNATIONAL CONFERENCE ON CELL SCIENCE AND REGENERATIVE MEDICINE

Gulsen meral

Epigenetic Coaching Company UK

The Importance of Nutrigenetics and Microbiota in Personalized Medicine: From Phenotype to Genotype

Abstract: Precision medicine, also known as 4P medicine (Predictive, Preventive, Personalized, and Participatory), emphasizes integrating phenotypic, genotypic, and environmental factors to develop individualized health strategies. The one-carbon metabolism pathway plays a critical role in cellular methylation, a process that involves the transfer of methyl groups for various biological functions. Genetic polymorphisms within genes encoding enzymes involved in this pathway can significantly impact methylation efficiency, epigenetic regulation, and disease susceptibility. In this context, targeted supplementation is crucial for individuals with genetic variants affecting one-carbon metabolism, including choline, active folate, B12, and B6. Additionally, Vitamin D receptors (VDR) play a dual role in immune modulation and microbiota regulation. VDR variants not only influence the immune response but also have a significant impact on gut microbiota composition, further linking genetics, immunity, and metabolic health.

Translating nutrigenetic and nutrigenomic research into multidisciplinary clinical practice remains one of the most challenging aspects of precision medicine. It is now well established that integrating genotype and phenotype data, along with tailored nutrition, lifestyle, and supplement strategies, enhances clinical success. If we aim to adopt an epigenomic approach, it is essential to base personalized nutrition and supplementation recommendations on nutrigenetics, microbiota composition, and individualized risk analyses derived from genetic and microbiota test results.

Our study aimed to highlight the impact of genetic variants in one-carbon metabolism genes, VDR polymorphisms, and microbiota composition on phenotype. This investigation explored the potential association between genetic polymorphisms within genes encoding enzymes of the one-carbon metabolism pathway and susceptibility to various diseases, emphasizing the intricate interplay between nutrigenetics, microbiota, and epigenetic regulation in personalized health strategies.

Biography: Associate Professor Gülsen Meral graduated from Istanbul University Cerrahpaşa School of Medicine in 1994. She became a specialist in paediatrics in 2001 . She is Associate Professor in Pediatrics and worked as a specialist as well as deputy chief physician and chief physician at several hospitals. She was the Rector's advisor between 2019-2021 at the Northern Cyprus ITU. She is also an Acupuncture instructor. She worked as a Nutrigenetics graduate course and lecturer and gave undergraduate and graduate courses on child development. She has many national and international publications, and worked on editorial boards and as reviewers. She has a Master's Degree in Hospital Management.

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INTERNATIONAL SUMMIT ON HEPATOLOGY AND NEPHROLOGY RESEARCH

Adi Mor

Chemomab Therapeutics, Israel

Targeting the CCL24 Pathway with nebokitug in Primary Sclerosing Cholangitis: Safety and Biological Activity from a Phase 2 Study

Abstract:

Introduction: Nebokitug (CM-101) is an anti-CCL24 monoclonal antibody with anti-inflammatory and anti-fibrotic activities. This phase 2 study aimed to assess the safety, tolerability, and biological activity of nebokitug in patients with primary sclerosing cholangitis (PSC).

Methods: SPRING is a randomized, double-blind (DB), placebo-controlled trial with an open-label extension phase. Patients with large-duct PSC and ALP >1.5× ULN were randomized to receive intravenous nebokitug (10 mg/kg or 20 mg/kg) or placebo every 3 weeks for 15 weeks (five doses total). Following the DB period, eligible participants could enter a 33-week open-label treatment phase and a subsequent 15-week follow-up. The primary endpoint was safety and tolerability. Secondary endpoints included changes from baseline to week 15 in liver stiffness measurement (LSM), enhanced liver fibrosis (ELF) score, liver biochemistry, and pharmacokinetic (PK)/pharmacodynamic (PD) parameters. Biological activity and responder analyses were conducted in a prespecified subgroup with baseline LSM >8.7 kPa.

Results: Seventy-six patients received at least one dose (placebo n=20; nebokitug n=56). Sixty-six patients (placebo n=16; nebokitug 10 mg/kg n=22; 20 mg/kg n=28) completed the DB period, received all five doses, and had baseline and at least one post-baseline measurement for ALP and ELF. Baseline characteristics were comparable: mean age 52 years (range 23–75), 74% male, 71% with IBD, and 72% on UDCA. Treatment-emergent adverse events (TEAEs) were similar between groups (nebokitug: 82%; placebo: 75%). Most frequent TEAEs included fatigue, headache, and pruritus. Serious TEAEs occurred in three patients (1 placebo, 2 nebokitug), none of which were treatment related. PK analysis demonstrated dose-proportional increases in nebokitug levels and target engagement. Patients treated with nebokitug 20 mg/kg showed consistent reductions in liver biochemistries compared to nebokitug 10 mg/kg and placebo. Biomarkers including PRO-C3, IL-6, IL-8, and TGFβ improved in a dose-dependent manner, especially among patients with baseline LSM >8.7 kPa. In this subgroup, patients receiving nebokitug 10 mg/kg and 20 mg/kg had mean LSM reductions of 1.5 and 1.4 kPa, respectively, compared to a 3.0 kPa increase in placebo (p=0.01 for both groups). Majority of nebokitug 20mg/kg treated patients in this subgroup had ELF scores that did not increase > 0.19, a threshold predictive of worse clinical outcomes.

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Conclusions:

Nebokitug was well tolerated and demonstrated a safety profile comparable to placebo. After 15 weeks of treatment, nebokitug showed anti-fibrotic, anti-inflammatory, and anti-cholestatic biological effects in PSC patients. These phase 2 data support the progression of nebokitug to more advanced clinical trials in PSC.

Biography:

Chief executive Officer, Chief Scientific Officer and Co-founder at Chemomab Therapeutics

Adi Mor founded Chemomab at 2011 and has been leading Chemomab as its CEO and CSO from early discovery stage and into Phase 2/3 clinical trials. She has extensive knowledge and experience in immunology focusing on autoimmune and inflammatory-fibrotic diseases and broad experience in designing, promoting and patenting a novel class of monoclonal antibodies to treat inflammatory and fibrotic diseases. Dr. Mor is a senior executive with a track record of strong cross functional leadership with deep understanding of drug development, business development, corporate strategy and clinical operations. Dr. Mor earned her PhD in immunology from Tel Aviv University in the Department of Neurobiochemistry and is the lead author of numerous scientific journal publications in immunology and inflammatory disorders

Beatriz Atonal-Flores, María de la Luz León-Vázquez, Armando Barranco-Juarez

Instituto Mexicano del Seguro Social, Tlaxcala, México

Indicators of diabetesmellitus after liraglutide, sitagliptin/metformin, linagliptin, and sitagliptin

Abstract:

Introduction: The management of diabetes mellitus requires a comprehensive approach, and the different therapeutic options make it necessary to compare their effectiveness with prior treatment regimens.

Objective: To analyze the control indicators of diabetes mellitus after the incorporation of liraglutide, sitagliptin/metformin, linagliptin, and sitagliptin.

Materials and Methods: Observational, analytical, longitudinal study. The control indicators reported in the months of October, November, and December of 2020 were compared with those of 2021. Measurements of glucose, glycated hemoglobin, and blood pressure were selected before and after the use of new drugs in patients with diabetes mellitus over 20 years of age. A descriptive analysis was performed, and for the analysis of repeated measures, the Wilcoxon and McNemar tests were applied, with a p-value ≤ 0.05 considered significant, and a confidence level of 95%, using the IBM-SPSS 24 software.

Results: A total of 352 records were analyzed, 59% of which corresponded to women, aged 26 to 88 years. The control percentage decreased after the change of regimen (38.4% compared to 35.8%) with no statistical difference (p = 0.503). There was no statistical difference in glucose levels, glycosylated hemoglobin, weight, and blood pressure before and six months after the change of regimen. The glycemic control indicator for the months of October, November, and December 2020 compared to the same months in 2021 increased(17.2, 18.7, and 16.3, to 41.6, 47.2, and 46.5%). Blood pressure control increased from 64.5, 66.7, and 67 to 82.4, 85.1, and 83.1%.

Conclusions: The control indicators for all patients treated in the unit improved regardless of the treatment provided; however, patients who used the new drugs did not show any difference.

Keywords: Diabetes Mellitus, Pharmaceutical Preparations, Quality Indicators.

Biography: He was born in the state of Tlaxcala and completed his basic education in the same state. He finished his degree as a Surgeon Doctor in his hometown. He completed his medical specialization at the National Institute of Public Health and worked for the ISSSTE and IMSS. He currently serves as the head of epidemiological surveillance in a primary health care unit and is a lecturer for the Family Medicine and Epidemiology residencies.

INTERNATIONAL SUMMIT ON HEPATOLOGY AND NEPHROLOGY RESEARCH

Brian Rayner

University of Cape Town, South Africa

Advances in Chronic Kidney Disease in Africa

Abstract: Africa particularly sub-Sharan Africa (SSA) faces major challenges in respect to chronic kidney disease (CKD). There is a rising prevalence due to the combined effects of hypertension, diabetes and human immunodeficiency virus (HIV) (and the interaction between them), and the effect of apolipoprotein L1 (APOL1) variants on the susceptibility to CKD. Epidemiological data on the prevalence of CKD are of low to medium quality and reliable data are urgently needed for health planning. Furthermore, there are important deficiencies in creatinine-based equations in underestimating the prevalence of CKD in Africa and evidence suggests that cystatin C based equations are more reliable. There is a changing spectrum of HIV related CKD with the greater availability of antiretroviral treatment. Major clinical trials using SGLT2 inhibitors have signalled a major advance in the treatment of CKD, especially in relation to type 2 diabetes, but the affordability, availability and relevance to the African population is not established. The importance of the effects of hypertension in pregnancy and pregnancy related acute kidney injury on CKD and the newer concept of CKD of unknown cause (CKDu) are highlighted. Hypertension remains a dominant cause of CKD in Africa and newer information suggests the most appropriate treatment to control blood pressure and thus prevent CKD is the combination of either amlodipine plus a thiazide diuretic or angiotensin converting enzyme (ACE) inhibitor.

Keywords: chronic kidney disease – Africa - advances

Biography: Brian Rayner is an emeritus Professor and Senior Scholar of the University of Cape Town. He received the World Hypertension League Award for Notable Achievement in Hypertension in 2014. He established the Kidney and Hypertension Research Unit, which is an active training and research centre for Nephrologists from SSA. The ISH endorsed the Division as a Regional Training Centre of Excellence. Brian Rayner's active research interests are therapy of hypertension, CKD, and lupus nephritis, and genetics of severe hypertension in blacks. He has 189 publications in peer reviewed journals. He was/is a principal investigator in 47 major international research studies.

Daniel Chorley, Ibrahim Mian, Deloshaan Subhaharan and Pradeep Kakkadasam Ramaswamy

Department of Digestive Health, Gold Coast University, Australia

Endometriosis Presenting as a Rectal Stricture in a Patient with Ulcerative Colitis and Primary Sclerosing Cholangitis: A Case Report

Abstract: Patients with ulcerative colitis (UC) are at increased risk of colorectal cancer (CRC), particularly when compounded by high-risk features such as primary sclerosing cholangitis (PSC) and colonic strictures. Differentiating between malignant and benign strictures in this setting is crucial but often challenging. We report a case of a woman in her early 40s with longstanding UC and newly diagnosed PSC who developed a persistent rectosigmoid stricture. Despite multiple endoscopic biopsies showing no dysplasia, concern for malignancy remained high due to her dual-risk profile. She subsequently underwent elective total proctocolectomy. Histopathological examination revealed no dysplasia or active inflammation but demonstrated deep infiltrating endometriosis involving the rectal submucosa and muscularis propria—accounting for the stricture.

Endometriosis affecting the bowel is uncommon but can mimic features of IBD and CRC, including strictures, abdominal pain, and altered bowel habits. (1,2) Diagnosis is difficult due to overlapping symptoms and the limited depth of endoscopic biopsies, which may miss submucosal disease. While malignancy must be thoroughly ruled out in high-risk patients, alternative diagnoses such as endometriosis should be considered—especially in women with subtle gynecological symptoms. (3,4) This case underscores the diagnostic complexity of colonic strictures in IBD, especially in patients with additional CRC risk factors. It highlights the need for a broad differential diagnosis, interdisciplinary collaboration, and careful interpretation of clinical, endoscopic, and histological findings to guide management.

Keywords: ulcerative colitis, endometriosis, stricture, primary sclerosing cholangitis, inflammatory bowel disease, colorectal cancer

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INTERNATIONAL SUMMIT ON HEPATOLOGY AND NEPHROLOGY RESEARCH

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Evaluation of the Sanitary Quality of Sales Channels and Transport Equipment for Frozen Poultry Meat Imported into Benin

Abstract: Meat is a highly perishable commodity whose hygienic quality must be strictly maintained to ensure consumer safety. In Benin, the distribution of imported frozen poultry meat faces significant challenges due to diverse sales channels and variable preservation practices. This study aimed to evaluate the distribution networks and transport equipment used for these products. Surveys were conducted among 17 importers, 18 wholesalers, 71 retailers, and 40 consumers across seven municipalities: Cotonou, Abomey-Calavi, Porto-Novo, Lokossa, Aplahoué, Pobè, and Bohicon. The distribution analysis, based on the 5M method, revealed three main groups of distributors: Group 1, mainly educated operators, uses refrigerated trucks; Group 2, less educated traders, relies on ordinary vehicles; and Group 3, literate sellers, employs both simple and refrigerated vehicles. Despite these arrangements, frequent power outages, inadequate packaging, and poor handling compromise the cold chain, often leading to spoilage detected only after purchase. Additionally, 62.5% of importers re-export meat to Nigeria and 11.7% to Niger, frequently without maintaining proper cold chain conditions. More than half of the importers (52.94%) are professional economic operators, suggesting that commercial priorities often outweigh sanitary considerations. These findings highlight the risk of bacterial contamination and emphasize the need for improved cold chain management, stricter hygiene practices, and enforcement of safety regulations to protect public health. Strengthening transport infrastructure and promoting awareness among distributors and consumers are essential for ensuring the quality and safety of imported frozen poultry meat in Benin.

Keywords: Frozen poultry, cold chain, distribution, hygiene, food safety, Benin

Biography: GANIERO Emmanuella Grâce Hermance Adéwalé, from Benin, holds a degree in Food Technology Engineering and a Master's in Standards and Quality Control of Agro-Food Products from the University of Abomey-Calavi. A doctoral candidate at the Regional Center of Excellence in Avian Sciences, University of Lomé, I specialize in food safety and nutrition. My research, conducted at the Beninese Agency for Food Safety, the Ministry of Health, and specialized laboratories in Benin and Togo, focuses on improving the quality, hygiene, and safety of food products, making a tangible contribution to public health protection.

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Long-Term Outcomes of Laparoscopic Sleeve Gastrectomy: A 9-Year Follow-Up Study

Abstract:

Introduction: Laparoscopic sleeve gastrectomy (LSG) is a widely used metabolic-bariatric surgical (MBS) technique, but long-term outcome data remain limited. This study aims to assess the 9-year progression of weight and related comorbidities following LSG.

Methodology: This retrospective study analyzed data from patients who underwent LSG in 2014, with consent to share data. Participants also completed an "ad hoc" questionnaire. Medical data and responses were analyzed using descriptive and inferential statistics.

Results: Of the 96 patients, 56 (23/33 males/females) agreed to participate in the follow-up (66.7%) and were assessed. The average initial weight was 119.7±17.3kg with a median of 117.0 kg (average BMI was 41.1±3.48kg/m^2 – median 40.5 kg/m^2). Preoperatively, comorbidities included arterial hypertension (AHT) in 44.6%, dyslipidemia (DL) in 46.4%, sleep apnea syndrome (SAS) in 33.9%, type 2 diabetes (T2DM) in 21.4% and gastroesophageal reflux disease (GERD) in 53.6% of participants. Nadir BMI was assessed at year 3 (Y3) at a value of 28.2±3.8kg/m2, corresponding to a 31.1 ±8.8% total weight loss (TWL) – median 30.9%. Weight regains occurred post-Y3, with %TWL of 27.3±9.4% at Y6 and 26.4±10.3% at Y9. The regain between Y3-Y6, Y3-Y9 and Y6-Y9 is considered as being significative; excess weight loss (EWL) at Y9 was 68.0±25.8%. All comorbidities improved but GERD significantly increased to 75.0% at Y9 (p=0.0110). Emotional eating significantly impacted weight loss (p=0.03829).

Conclusion: LSG leads to significant long-term weight loss, although some weight regains starting at 3 years postoperatively. LSG also demonstrates lasting benefits for AHT, DL, SAS, and T2DM. However, GERD worsened overtime.

Keywords: Laparoscopic Sleeve Gastrectomy (LSG)

- Long-term Weight Loss
- Comorbidities
- Excess Weight Loss (EWL)

Gastroesophageal Reflux Disease (GERD)

INTERNATIONAL SUMMIT ON HEPATOLOGY AND NEPHROLOGY RESEARCH

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Hypothetical Pathogenetic Model of Membranous Nephropathy

Abstract: Membranous nephropathy (MN) is a disease with an etiology and pathogenesis that are still not fully understood, despite the discovery of over 10 new antigens. Antibodies in serum against them are not always detected, and they can also be positive not only in primary (pMN) but also in secondary membranous nephropathy (sMN). PLA2R still remains the most common antigen corresponding to pMN, which is also episodically detected in cases of sMN. Data of 102 patients with MN and their comorbidities are evaluated in order to establish correlations and it was found that chronic diseases of the thyroid gland, liver and lung are the most common comorbidities found. The patients are separated into three groups in accordance with their immunological and pathomorphological findings, as follows: pMN, idiopathic MN (iMN) and sMN. From another study of 79 patients with MN, it was found that the relative share of patients with diabetes is significantly higher in the iMN. A logical question arose: What do these diseases and MN have in common? The answer is: PLA2R in pMN and chronic subepithelial inflammation in iMN, influenced by the presence of diabetes mellitus and NSAID intake. PLA2R gene is located on Chromosome 2 and the cell type enrichment of the selected gene is found in podocytes; thyroid glandular cells, cholangiocytes and NK cells (lungs). Chronic inflammation at sites that express PLA2R can lead to the formation of antibodies against PLA2R; these antibodies are deposited in the subepithelial space. However, this alone is insufficient, we need conformational changes in the structure of PLA2R in kidney and further epitope spreading in order to establish MN as a new distinct disease entity.

Keywords: Pathogenesis; Epitope spreading; PLA2R; IgG glycosylation

Biography: Born in Ukraine, Odesa, where she lived for more than 10 years and continued her high school education in Bulgaria until 2000. In 2001 began to study medicine in Romania, Cluj-Napoca at Medical University" Iuliu Hatcieganu", in Romanian language until 2004. In 2004 continued her medical education at the Medical University of Plovdiv. Graduated from MU of Plovdiv in 2008. Worked in emergency medical center and as a General Practitioner. From 2009 until now has been working at Nephrology Clinic in University Hospital "Kaspela" in Plovdiv. In 2018 acquired Nephrology specialty. Since 2015 works as an assistant at the Department of Propaedeutics of Internal diseases, Medical Faculty, Medical University of Plovdiv, currently holding the position of chief assistant. For four years has an outpatient practice at the 2nd Diagnostic Consultative Center in Plovdiv. In September 2022 successfully defended her dissertation, entitled: Specific Serum and Deposited Autoantibodies and Immunoglobulins in Membranous Nephropathy and their Significance for the Therapeutic Approach. Member of the Club of Young Scientists of the Union of Scientists in Bulgaria.

INTERNATIONAL SUMMIT ON HEPATOLOGY AND NEPHROLOGY RESEARCH

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Novel role of phytochemical and bioactive compounds in diabetic ulcer/ wound treatment: Current molecular approach

Abstract: Diabetes-related ulcers and slow-healing wounds offer a severe health danger to everyone due to their unknown aetiology. Diabetes foot ulcer (DFU) mortality rates vary from 10% after 16 months to 24% after 5 years. Therefore, using botanical medicines as a therapy technique is one way to address this issue, especially in places where resources are few. The process of repairing injured tissues by substituting malfunctioning wounded cellular components is known as wound healing. Natural materials, phytochemicals, bioactive compounds, and secondary metabolites have been widely utilised for wound care for millennia. Numerous scholarly investigations have examined the potential of natural chemicals in the process of wound healing. The compounds have been categorised in these studies according to their characteristics, bioactivities, and modes of action. However, current study is limited to assessing natural compounds that come from either plants or animals. Macrophages are necessary for tissue repair, the elimination of cell debris, and the lowering of inflammation during wound healing. More research is being done on macrophage activity inside the wound; it may be detrimental if improperly stimulated, as in fibrosis or chronic non-healing wounds. Recent developments in macrophage-specific deletions, in vivo and translational wound models, and methods for differentiating macrophage subsets have shown the wide range of macrophage activation and effector function. To improve wound healing, this research examines organic molecules from plants and animals that target many biological systems. Wound-healing macrophages are triggered by cytokines, apoptotic cells, nucleotides, and mechanical stimulation. Recent study suggests these traits improve wound healing.

Keywords: Diabetic ulcer, phytochemical, miRNA, Nanoparticle, Wound repair

INTERNATIONAL SUMMIT ON HEPATOLOGY AND NEPHROLOGY RESEARCH

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Longitudinal assessment of cardio-respiratory fitness among Indian patients with type 2 diabetes mellitus

Abstract: Type 2 Diabetes Mellitus (T2DM) is associated with many complications, including cardiovascular and autonomic dysfunctions. Cardiorespiratory fitness as estimated by maximal oxygen uptake (VO2 max) is a very powerful predictor of cardiovascular health. Therefore, it is of interest to measure the cardiorespiratory parameters in T2DM patients for diagnosing autonomic dysfunction and to follow the changes over time. Baseline and follow-up cardiorespiratory fitness parameters among patients of Central India suffering from T2DM and its effectiveness to lifestyle modifications for these parameters are done. This hospital-based longitudinal study was conducted on 600 patients between the age group of 30 and 65 years diagnosed with T2DM. Patients were recruited from the Sports Physiology Laboratory, Department of Physiology, Mahatma Gandhi Institute of Medical Sciences, Sevagram, Maharashtra. Baseline measurements of VO2 max, HRV, and other cardiorespiratory variables were taken with a motorized treadmill using Lab Chart. Then, lifestyle counselling was undertaken for the participants and the same parameters were reassessed one year later.

Statistical package SPSS version 23 was used during data analysis. After one year of interventions, the improvements at the end of one year include those of VO2 max and HRV. The mean VO2 max improved from 25.4 ± 5.2 to 30.1 ± 4.8 ml/kg/min while the probability was less than 0.001. The main indices of HRV showed improved autonomic balance along with enhanced parasympathetic activity. Combining lifestyle interventions with regular monitoring of cardiorespiratory fitness and HRV can, indeed significantly improve cardiovascular health in T2DM patients. This study calls for the inclusion of fitness assessments in everyday clinical care for diabetes.

Keywords: Diabetes mellitus; autonomic dysfunction; cardiorespiratory; longitudinal study; sports physiology.

Biography: I am Dr Mounish Reddy, working as clinical fellow in emergency medicine in Leeds teaching hospitals NHS trust.. I am committed to pursuing my career in a speciality that has medicine at core with inclination to train in Internal /Emergency/ Critical care medicine.

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Keywords: Diabetes mellitus; autonomic dysfunction; cardiorespiratory; longitudinal study; sports physiology.

INTERNATIONAL SUMMIT ON HEPATOLOGY AND NEPHROLOGY RESEARCH

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Antimalarial Drugs at the Intersection of SARS-CoV-2 and Rheumatic Diseases: Potential Opportunities

Abstract: The COVID-19 pandemic has become a significant global health emergency, stimulating the search for therapeutic repurposing of agents with established immunomodulatory properties. The objective was to evaluate and compare the efficacy and safety of antimalarial drugs (ADs) in autoimmune rheumatic diseases (AIRDs) and COVID-19. ADs, particularly hydroxychloroquine (HCQ), are widely applied in the management of AIRDs due to their anti-inflammatory, immunomodulatory, and antithrombotic effects. Early in the pandemic, proposed antiviral mechanisms—including interference with endocytic pathways, inhibition of ACE2 receptor glycosylation, blockade of sialic acid receptors, and modulation of cytokine release—suggested potential activity against SARS-CoV-2. Analysis of data from randomized controlled trials, observational studies, and meta-analyses allows for comparison of the pharmacological properties, clinical efficacy, and safety of ADs in AIRDs and COVID-19. While initial studies reported reductions in viral load and clinical improvement with HCQ, large-scale trials (RECOVERY, SOLIDARITY) demonstrated no significant mortality benefit and revealed increased risks, including QT interval prolongation and retinopathy, particularly at the higher doses required for antiviral activity. In contrast, prolonged low-dose administration in AIRDs remains effective and well tolerated, contributing to improved survival, reduced disease activity, and prevention of complications, including during pregnancy. Current evidence does not support the use of ADs for the treatment or prevention of COVID-19, emphasizing the importance of precise patient stratification and optimal dosing strategies in future investigations.

Biography: Head of the department of Family Medicine number 1, JSC "Medical University of Astana". Professor of department of Rheumatology. Member of Scientific society of rheumatology in the Republic of Kazakhstan. The participant of editor's society of Journal of “Rheumatology of Kazakhstan”. The independent consultant of the President's Medical Center. The main research interest is focused on studying the course of rheumatoid arthritis, lupus erithrematosys, ankylosing spondylitis, osteoporosis and osteoarthritis.

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INTERNATIONAL SUMMIT ON HEPATOLOGY AND NEPHROLOGY RESEARCH

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Nutrition and Developmental Origins of Kidney Disease

Abstract: The number of obese women within the reproductive age group is unfortunately increasing. As a consequence, increased chronic disease has been reported in both mothers and offspring. It is well known that the body mass index (BMI) of a child is closely linked to maternal BMI and thereafter their own BMI in adulthood. Mounting evidence suggests that offspring from obese mothers are prone to obesity, hyperglycaemia, dyslipidaemia, diabetes, hypertension and Chronic kidney disease (CKD). We have developed rodent models of maternal obesity in which, similar to humans, offspring develop impaired glucose metabolism and dyslipidaemia as early as at weaning, which are sustained into adulthood. We have additionally found that offspring of obese mothers have increased albuminuria and renal pathological features of CKD in young adulthood. Our data demonstarted that an unbalanced maternal diet in pregnancy is associated with epigenetic changes in offspring. Using an animal model of maternal obesity, we assessed the methylation profile of genes involved in kidney disease early in life and at adulthood when CKD like pathology occurs suggesting the importance of intrauterine epigenetic modifications in the development of CKD.

Keywords: Maternal programing, disease origin, obesity, Kidney disease

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IMPACT CKD: The Significant Societal and Environmental Impact Of Chronic Kidney Disease Over The Next Decade In Brazil

Abstract: Chronic kidney disease (CKD) is a progressive disease that thrives when undetected. Population ageing and increased comorbidities are projected to shift the CKD distribution to later stages that have larger socioeconomic and environmental impacts in Brazil. The significant burden of renal replacement therapy (RRT) suggests the need to prioritize preventive and early detection strategies.

Patient-level simulation model was developed to quantify the burden of CKD on clinical, patient, health system, environmental, productivity, and societal outcomes for the next decade. Yearly societal and economical burden were determined by applying the inputs to the number of diagnosed patients within each stage and aggregating for all patients. Resource burden was determined by multiplying the inputs by the number of diagnosed patients within each stage. To calculate the costing outputs, yearly CKD costs were applied to each patient.

By 2032, the number of Brazilians with CKD is projected to rise by 1.8M (7.2% increase), while the number of patients undergoing dialysis 170.8% (~233K). CKD is projected to result in USD38 billion of lost income.

Freshwater consumption fossil, fuel depletion and CO_2 emissions of patients with CKD are projected to rise 40% by 2032. RRT alone is project to incur the equivalent of the annual water usage of ~370K households, the annual power for 11M lightbulbs and the CO_2 emissions of 1.5M cars.

While overall CKD patient numbers increase by 7%, the distribution towards the later stages of CKD drives significant impact in terms of the epidemiology of CKD, across healthcare system, on patients, caregivers, society and the environment.

Keywords: chronic kidney disease, sustainability, burden, prevention

Biography: Talita Gobbi is the Sustainability and Health Equity Lead at AstraZeneca in Brazil. She holds a degree in Communication from São Paulo State Univerisity and a master's in International Public Affairs from Luiss University in Italy. With over a decade of experience in healthcare, she has worked in policy, government relations, advocacy, and communication across Brazil and Europe. Her career includes global roles at AstraZeneca and the United Nations, World Food Programme (WFP).

2ND GLOBAL CONGRESS ON FOOD AND NUTRITION

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Exploring Athlete Perceptions and Nutritional Supplement Marketing: Preliminary Insights from the IRIS Project

Abstract: Nutritional supplement use has become ubiquitous among athletes at all levels of competition, driven by aggressive marketing campaigns and the promise of enhanced performance. The present research, integrated on the project “Improving athletes' risk appraisal and informed decision-making towards nutritional supplement use in recreational and competitive sport – IRIS”, funded by the European Union through ERASMUS+ Call on Sport Programme, investigates the widespread use of nutritional supplements among athletes across six European countries, highlighting consumption patterns, risk awareness, and regulatory effectiveness amid rising doping violations and health concerns. A mixed-methods approach was used, including surveys of 468 athletes, and interviews with 22 competitors. Findings revealed significant national differences in supplement use, with over 60% of athletes in Finland and Portugal using supplements regularly, while only 45% did so in Greece. The study found a gender disparity, with male athletes showing 23% higher usage rates. Despite high usage, awareness of contamination risks was variable, with only 28% of athletes consistently verifying supplement quality. Misleading marketing was prevalent, with 73% of athletes encountering exaggerated claims. Regulatory challenges were evident, as only 12% of athletes could identify relevant regulatory bodies, and 68% of national markets lacked standardized contamination testing. The study emphasizes the need for enhanced regulation, including mandatory testing, standardized risk disclosures, and clear labelling. It also advocates for consumer protection measures and educational initiatives to raise awareness about supplement risks. The conclusions call for coordinated action among regulators, sports organizations, and public health authorities to safeguard athlete health and uphold competitive integrity.

Keywords: IRIS project, Nutritional supplement, Risk perception, Marketing

2ND GLOBAL CONGRESS ON FOOD AND NUTRITION

Biography: Dr Ana Sofia Tavares, Full Professor at the Department of Diagnostic, Therapeutic and Public Health Sciences and an integrated Member at H&TRC – Health and Technology Research Center of Lisbon School of Health Technology, Polytechnic University of Lisbon. Teacher of several curricular units in the degree in Biomedical Laboratory Sciences, and in the master's in Clinical Laboratory Technologies. As main research interests, the areas of Clinical Chemistry, Epidemiology, Doping, Behaviors, and additions with direct impact in terms of Public Health stand out, highlighting the investigation of attitudes and motivations that lead the individual to consume performance-enhancing substances in the practice of physical activity. She integrates several national and international funded projects and holds several publications as author and co-author. Member of the Human Enhancement Drugs Network.

2ND GLOBAL CONGRESS ON FOOD AND NUTRITION

Josep Julve

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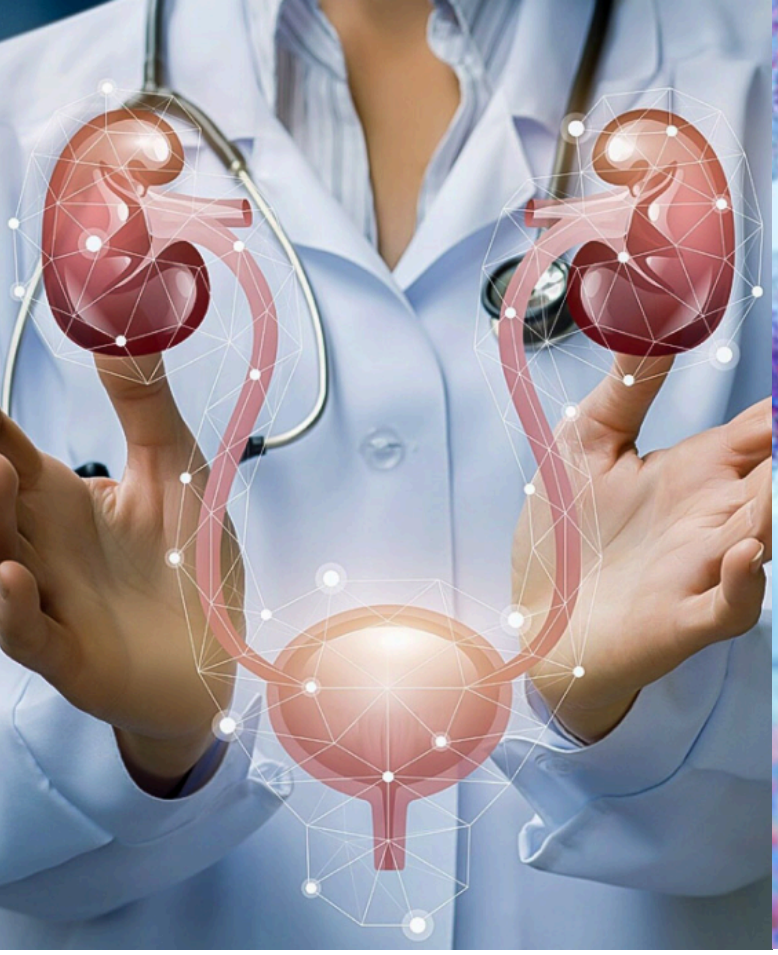
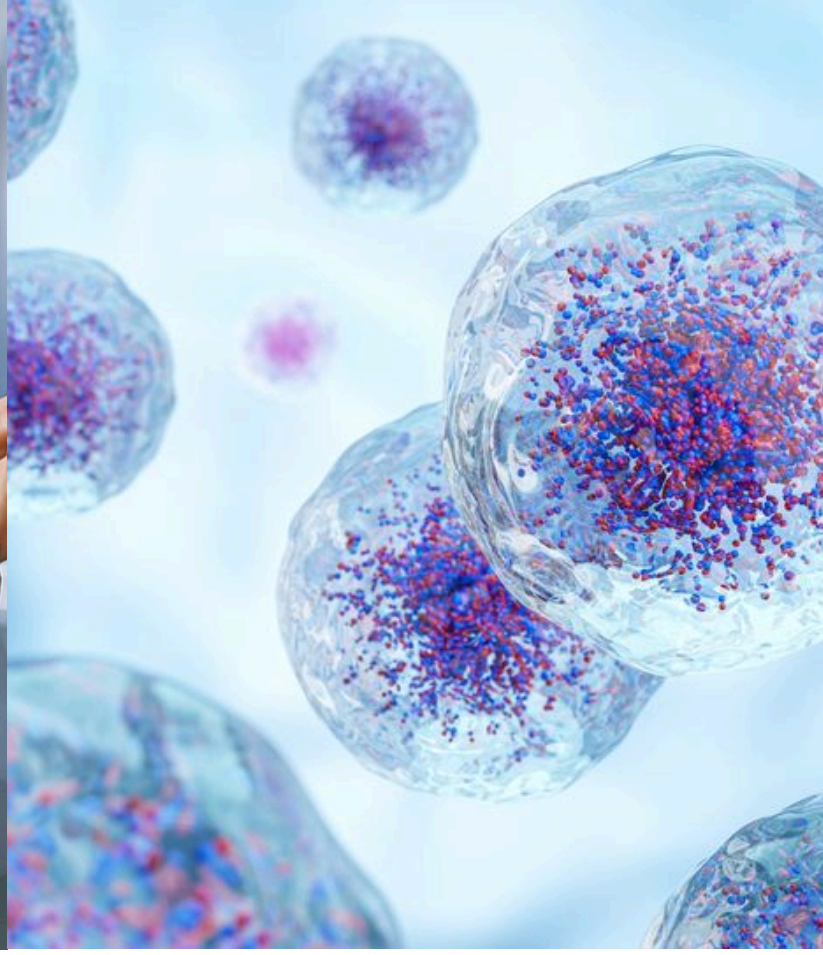
Insights of lifestyle in Lipid Metabolism and Cardiovascular Disease Progression in Diabetic Patients

Abstract: Compelling evidence indicates that low adherence to the Mediterranean diet is associated with a higher prevalence and greater burden of atherosclerotic plaques, as well as accelerated progression of subclinical atherosclerosis. Diabetes represents a major risk factor for cardiovascular disease. Despite the favorable influence of combined lifestyle and lipid-lowering strategies on cardiovascular risk, a residual cardiovascular risk remains in subjects at risk, especially those with diabetes. Because lipid metabolism is profoundly distorted in individuals with diabetes and is positively influenced by lifestyle factors such as dietary habits, current research has focused on studying the contribution of novel lipid biomarkers as indicators of cardiovascular health in diabetic subjects. In this context, our recent work has concentrated on the use of advanced metrics to unveil lipoprotein characteristics related to increased cardiovascular risk. Furthermore, we emphasize the pivotal role of lifestyle factors, including dietary patterns and physical activity, in modulating lipid metabolism and atherosclerotic disease progression in study cohorts. Our analysis draws on recent findings from prospective cohort studies with longitudinal follow-up, highlighting, on the one hand, the potential of advanced lipoprotein characteristics to predict future cardiovascular events, and on the other hand, the dynamic interplay between lifestyle behaviors and cardiovascular outcomes. Finally, we discuss evidence-based nutritional and lifestyle interventions aimed at reducing the burden of cardiovascular disease in diabetic populations, providing insight into targeted strategies for prevention and management.

Keywords: diabetes, lipoprotein metabolism, lifestyle, cardiovascular events, atherosclerosis

Biography: Dr. Josep Julve received his Bachelors (1986-1992), Masters (1994), and PhD (2000) degrees in Biological Sciences, from the Universitat de Barcelona (UB). He developed the experimental work of his PhD at Institut de Recerca SANT PAU in Barcelona. His line of basic and translational research, both in cellular and animal experimental models as well as in humans, is currently focused on the understanding of the metabolic and molecular basis of tissue injury in diabetes. He is committed in deepening in the metabolic basis of diabetes-related conditions, in the evaluation of [i] novel biomarkers of diagnostic/prognostic related to adverse metabolic outcomes (mainly, but not exclusively, affecting the liver and cardiovascular system) and [ii] experimental therapeutic interventions (http://orcid.org/0000-0002-6531-2246).





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