2ND EDITION OF

INTERNATIONAL CONFERENCE ON

COPD AND LUNG DISEASES

14-15, SEPTEMBER, 2022

ONLINE EVENT

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BOOK OF
ABSTRACTS

2ND EDITION OF

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ABOUT MAGNUS GROUP

Magnus Group (MG) is initiated to meet a need and to pursue collective goals of the scientific community specifically focusing in the field of Sciences, Engineering and technology to endorse exchanging of the ideas & knowledge which facilitate the collaboration between the scientists, academicians and researchers of same field or interdisciplinary research. Magnus group is proficient in organizing conferences, meetings, seminars and workshops with the ingenious and peerless speakers throughout the world providing you and your organization with broad range of networking opportunities to globalize your research and create your own identity. Our conference and workshops can be well titled as 'ocean of knowledge' where you can sail your boat and pick the pearls, leading the way for innovative research and strategies empowering the strength by overwhelming the complications associated with in the respective fields.

Participation from 90 different countries and 1090 different Universities have contributed to the success of our conferences. Our first International Conference was organized on Oncology and Radiology (ICOR) in Dubai, UAE. Our conferences usually run for 2-3 days completely covering Keynote & Oral sessions along with workshops and poster presentations. Our organization runs promptly with dedicated and proficient employees' managing different conferences throughout the world, without compromising service and quality.

KEYNOTE FORUM
DAY 01

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Jordan Minov

Institute for Occupational Health, North Macedonia

Asthma and occupational exposures

Occupational exposures may cause new-onset asthma in a healthy subject, aggravate pre-existing asthma in a symptomatic individual or reactivate asthma in an asymptomatic individual. All these disorders are covered by the term work-related asthma (WRA) or work-attributable asthma, i.e. asthma caused or aggravated by workplace agents or conditions. WRA significantly contributes to the overall burden of asthma, i.e. up to 30% of all adult asthma cases are caused or aggravated by workplace agents or conditions. On the other side, WRA is a heterogeneous entity that includes three subtypes, i.e.immunologic occupational asthma (OA), irritant-induced asthma (IIA) and work-exacerbated asthma (WEA). OA encompasses immunologic OA and IIA (non-immunologic OA), i.e. WRA subtypes resulting from an inciting agent or condition only found at the workplace. Immunologic OA is a form of WRA which develops after a sensitization to certain occupational agent that leads to chronic allergic inflammation of the airways. Up to now, 350 to 400 occupational agents that may cause immunologic OA are identified and they are divided into high-molecular-weight (HMW) and low-molecular-weight (LMW) agents. HMW agents, i.e. large molecules, proteins or glycopeptides, are complete sensitizing antigens, while LMW agents are incomplete antigens (haptens) that combine with a body protein to produce a sensitizing antigen. Non-immunological type of OA (occupational IIA) is a form of OA caused by exposure to respiratory irritants. There is a number of irritants that may cause IIA, majority of which are related to certain workplaces. The rapid onset of asthma within a few hours after a single exposure to very high levels of irritant substances, i.e. reactive airways dysfunction syndrome (RADS) or acute-onset IIA, is the best characterized phenotype of IIA. Non-RADS-IIA also referred to as not-so-sudden-IIA and sub-acute IIA is the IIA phenotype that occurs following repeated moderate-to-high level exposures of respiratory irritants over a days or weeks, or even months. Still controversial is the IIA phenotype caused by chronic lower level of exposure to respiratory irritants (low-dose RADS). Work-exacerbated asthma (WEA) is a form of WRA defined as a worsening of asthma due to condition at work, i.e. a pre-existing or concurrent asthma aggravated or reactivated by work agents and conditions. WEA can result by variety of occupational triggers, such as respiratory irritants and allergens, physical factors, behavioral states, etc. As in the case of other workplace related disorders, the development of WRA is a matter of prevention. Activities and measures targeted to elimination or reduction of harmful workplace exposures, as well as to early detection and early intervention in the course of the lung damage, can significantly reduce the burden caused by WRA.

Biography:

Jordan B. Minov, MD MSc PhD, specialist in internal medicine and occupational medicine, sub-specialist in pulmology and allergy, has achieved his graduated and post-graduate degree at the Medical Faculty, University "Sts. Cyrilus and Method" in Skopje. Employed at the Institute for Occupational Health of R.North Macedonia, Skopje, as a Head of the Department for Physiology of Work.Full professor at the Medical Faculty, Skopje, and Chief of the Chair for Occupational Medicine. Obstructive airway diseases, occupationally-related respiratory diseases, respiratory functional diagnostics, and public health aspects of the respiratory diseases are the fields of his special scientific interest. Author of the monographs "Lung and Pleural Diseases Related to Occupational Exposures" (Skopje, 2009), "Spirometry" (Skopje, 2010), "Smoking among Macedonian Workers" (Saarbrucken, 2013), "COPD and the Workplace" (New York, 2016), and "Spirometry in the Diagnosis and Monitoring of the Respiratory Diseases" (Skopje, 2021). Author of the chapter "Work-Related Asthma" in the E-book "Asthma"(www.smgebooks.com).Co-author of the monograph "Occupational Medicine", J. Karadzinska-Bislimovska (Skopje, 2011).Researcher in the Global Allergy and Asthma European Network (GA2LEN) Survey and in the Survey Follow-up Study from the Skopje centre (2007-2010). Team leader of the Skopje Data Collection Centre within the Study EMBARC: The European Bronchiectasis Registry (2015-2019) and in the project "COPD and Occupational Exposures" funded by Medical Faculty, Skopje (2018-2021).

POSTERS
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Effect of six weeks resistance exercise delivered via telerehabilitation in patients with Chronic Obstructive Pulmonary Disease

Po-Ching Huang[*1], Yi-Chu Lin[2], Ching-Hsia Hung[1]
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[2]Chi Mei Medical Center, Taiwan

Chronic obstructive pulmonary disease (COPD) is an irreversible lung disease and exercise intervention in pulmonary rehabilitation is one of the recommended interventions with the benefits of improving the exercise tolerance and the quality of life. Telerehabilitation has the reported vantages of higher satisfaction and better compliance that is consider to solve the low motivation of COPD and improve their engagement in exercise. Therefore, the present study investigated the effect of six-week resistance exercise delivered via telerehabilitation in patients with COPD. Patients diagnosed with COPD gave their consents to participate and chose to join the control (n=12) or telerehabilitation (n=13) group according to their willingness. Ten resistance exercises were designed for the present study and the 4 or 8 pounds of TheraBand were used to provide resistance. Participants in control group received conventional treatment and guidance of resistance exercise in papers. Participants in telerehabilitation group received guidance of resistance exercise in video form. The types and intensity of exercise would be modified weekly according to participants' self- reported exertion. Measures of respiratory muscle force, muscle strength, functional performance and COPDpulmonary exercise test were used for assessment at baseline and post-test. The results revealed the significant improvements of maximal inspiratory pressure (change $[\Delta]=12.28\pm15.58$, p=.015), maximal expiratory pressure ($\Delta=12.41\pm17.90$, p=.028), handgrip strength ($\Delta=1.27\pm1.80$, p=.026) and six minutes walking distance ($\Delta=26.08\pm41.27$, p=.042) in the within-group comparison of telerehabilitation group. While the significant reduction of biceps strength ($\Delta= -2.16\pm3.36$, p=.048) was found in the within-group comparison of control group. No significant difference was found in the result of COPDpulmonary exercise test. The current findings demonstrated that six-week resistance exercise conducting via telerehabilitation in patients with COPD has a sufficiently effect on improving the respiratory muscle strength, muscle strength of handgrip and functional performance. According, telerehabilitation could be considered for implementing into current pulmonary rehabilitation in COPD. Future studies can aim at investigating the effects of supervised or unsupervised telerehabilitation, or the impact of group telerehabilitation, to provide a more comprehensive approach of pulmonary rehabilitation in COPD.

Biography:
Ms. Po-Ching Huang majors in physical therapy and earned the master degree of physical therapy in 2013. She had a 2-year work experience as clinical physiotherapist and 3-year experience as research assistant. With the extended research knowledge and experience, she decided to study for doctoral degree and currently studies at Institute of Allied Health Sciences, College of Medicine, National Cheng Kung University, Tainan, Taiwan since 2018. Her research interests focuses on the breathing investigation and COPDpulmonary physical therapy for respiratory disease.

Treatable traits in COPD: Differences between gold-classes

Daniela Cardoso
CHUC, Portugal

Introduction: The classification and management of COPD are currently based on a patient-centric approach, emphasising the importance of symptoms and exacerbation history (GOLD-classes). Since COPD patients present hight individual heterogeneity, the treatable traits (TT) strategy has been proposed as a further personalized method, identifying therapeutic targets trough treat identification markers (TIM).

Objectives: Identify and compare TT between GOLD-classes on a COPD patients' population.

Methods: 22 TT and respective TIMs were defined. Retrospective study of COPD patients followed in a specialized consultation on a tertiary hospital, during 2021 first semester. Descriptive and comparative analysis was made between different GOLD classes, using SPSS program.

Results: Totally, 128 patients were studied, with a median age of 72.5 years old and male predominance (82%). The majority belonged to Class B (56.3%), followed by classes D (22.7%), A (15.6%) and C (5.5%). There was a statistically significant difference in the mean number of TT found in each GOLD class ($p=0.007$): 7.28 TT in class D, 6.49 in B, 5.1 in A and 4.7 in C. The least researched or registered TT were: osteoporosis (97.7%), GERD (71.9%), SAS (54.7%) and depression (52.3%). In class-D patients (n=29), the TTs found in most patients (>50%) were: desaturation in exertion (88.9%), eosinophilic airway inflammation (79.3%), COPDvascular disease (CVD | 76%), respiratory failure (RF | 72.4%), depression (66.7%), sleep apnea syndrome (SAS | 66.7%), emphysema (65.4%), exercise intolerance (61.1%) and bronchitis (58.6%). Within class B (n=72) were: emphysema (74.6%), SAS (75%), CVD (72.9%), depression/anxiety (72.2%), eosinophilic airway inflammation (62.2%), exercise intolerance (60.8%), gastro esophageal reflux disease (GERD | 55.6%) and desaturation in exertion (54%). In class A (n=20) most patients were found with: SAS (90%), emphysema (80%), eosinophilic airway inflammation (56.3%) and COPDvascular disease (56.3%%). Most class C patients (n=7) presented: depression/anxiety (100%), airway eosinophilic inflammation (85.7%), GERD and SAS (66.7%) and bronchiectasis (BQ | 57.1%). A statistically significant difference between GOLD classes was found in the presence of several TT: respiratory failure ($p=0.003$), desaturation ($p=0.006$) and effort intolerance ($p=0.014$), which were more prevalent in classes B and D, and also, bronchiectasis ($p=0.01$), more prevalent in classes A and C.

Conclusions: The symptomatic GOLD groups (B and D) present a higher number of TT, outlining a wider therapeutic window. These groups showed a higher prevalence of RF, exercise intolerance and desaturation at exertion, with statistical significance. The less symptomatic groups (A and C), showed a statistically significant higher prevalence of BQ. Associated extrapulmonary comorbidities were the least researched or recorded TT.

Biography:
Cardoso J, Ferreira AJ, Guimaraes M, Oliveira AS, Simao P, Sucena M. Treatable Traits in COPD - A Proposed Approach. Int J Chron Obstruct Pulmon Dis. 2021 Nov 18;16:3167-3182. doi: 10.2147/COPD.S330817. PMID: 34824530; PMCID: PMC8609199.

Respiratory rehabilitation program in a cohort of post-COVID-19 patients

Mariana Conde[*1], C. Parra1, S. Dias[2], A. Vale1, D. Dantas[2], P. Simao[2], P. Almeida[2]
[1]Hospital Centerof Tras-os-Montes and Alto Douro -Vila Real, Portugal
[2]Hospital Pedro Hispano, Portugal

The COVID-19 pandemic registered its first case in Portugal in March 2020. Its repercussion on the functioning of respiratory rehabilitation services has been significant, bringing a new population of respiratory patients. We aimed to evaluate the characteristics and evolution in training of a population of patients admitted to a respiratory rehabilitation program after COVID-19 disease. We designed a retrospective observational study including all patients admitted to the program post COVID 19 disease since March 2020 until January 2022.47 patients met the study inclusion criteria; the majority were male (n=32; 68,1%), with a mean age of 63 years. Most patients required admission to an intensive care unit (ICU) due to COVID-19 disease (n=38; 80,9%), with invasive mechanical ventilation (IMV) in 59,6% (n=28) and ECMO in 10, 9% (n=5).Only one patient did not require hospitalization in the acute phase. We observed a significant prevalence of overweight or obese patients (78.7%; n=37), as well as other COPDvascular risk factors (smoking history, arterial hypertension, diabetes, dyslipidemia). Overweight patients were more frequently admitted to the ICU (p=0.029), with a more frequent need for IMV (p=0.024).The median duration of the program was 8 weeks (IQR=7). Comparing the metabolic equivalents (MET) at the third training session with the end of the program, we observed a significant evolution (p<0.001).In conclusion, most patients admitted to the rehabilitation program had severe COVID-19 disease, with important symptomatic and functional repercussions. There was a significant progression in training.

Audience Take Away:

- The present study aimed to evaluate the profile of patients admitted to a respiratory rehabilitation program after COVID-19 disease, as they still experienced limiting respiratory symptoms after this disease
- The usefulness of this investigation lies in the fact that the behavior of patients after COVID-19 disease, namely their symptom burden, is heterogeneous and often disproportionate to the image and pulmonary function tests. Still, the overwhelming majority of patients included had criteria for severe COVID disease
- The approach to rehabilitation for this type of patient is a question that arises after this pandemic. We proved significant improvement in the exercise capacity of this group of patients after completing the rehabilitation program, demonstrating benefit of this approach, particularly in severe patients with maintenance of symptoms after the disease

Biography:
Dr. Mariana Conde studied Medicine at the University of Minho Medical School, completing her Integrated Master's Degree in 2016. In 2017 she started her medical internship at the Hospital Center of Tras-os-Montes e Alto Douro, joining the specific Pneumology training internship at the same institution in January 2018.She is a member of the Portuguese Society of Pulmonology and the European Respiratory Society since 2018; she is a member of the European Society of Medical Oncology since 2019.

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SPEAKERS
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Distinct changes in endosomal composition promote NLRP3 inflammasome activation

Zhirong Zhang

University of Strasbourg, France

Inflammasome complexes are pivotal in the innate immune response to pathogens and other danger signals. The NLRP3 inflammasome is activated in response to a broad variety of cellular stressors, including COVID-19 infection. Most of the stimuli act in a potassium efflux-dependent manner but a primary and converging sensing mechanism by the NLRP3 receptor initiating inflammasome assembly remains ill-defined. Here we show that NLRP3 activators disrupt endosome-TGN retrograde transport (ETRT) and lead to localization of NLRP3 to endosomal vesicles. Genetic and pharmacologic perturbation of ETRT leads to accumulation of phosphoinositol-4-phosphate (PI4P) in endosomes to which NLRP3 is recruited.Disruption of ETRT potentiates NLRP3 inflammasome activation in murine and human macrophages in vitro. Mice with defects in ETRT in the myeloid compartment are more susceptible to LPS-induced sepsis showing enhanced mortality and IL-1β serum levels as compared to control animals. Our study thus uncovers that change in endocytic trafficking mediate NLRP3-dependent inflammatory responses.

Biography:

Dr. Zhirong ZHANG is a senior scientist at the Institute of Genetics and Molecular and Cellular Biology (IGBMC), Strasbourg, France. He obtained his PhD degree under the mentorship of Prof. Jiahuai HAN, who pioneers the MAPK signaling and programmed cell death pathway, at Xiamen University in Xiamen, China. After PhD, he joined the laboratory of Romeo RICCI at IGBMC for post-doctoral training. His current research interest focuses on the understanding of molecular mechanism underlying the activation NLRP3 inflammasome in vitro and in vivo, which has been widely implicated in many human inflammatory diseases, including infectious diseases (COVID-19 infection).

Association between all-cause and COPDvascular mortality and lung function across the full range of distribution: Results from hapiee cohort study

Tatyana Sarycheva
Masaryk University, Czech Republic

Background: Impaired lung function has been established as an independent predictor of mortality but there is less evidence on the mortality risk in persons with preserved lung function. We assessed the pattern of all-cause and COPDvascular mortality across the full distribution of forced expiratory volume in one second (FEV1) of people from four Central and Eastern European countries.

Methods: The prospective population-based HAPIEE cohort includes randomly selected people with a mean age of 59 ±7.3 years from population registers in Czech Republic, Poland, Russia and Lithuania. The baseline survey in 2002-2005 included 36106 persons of whom 24944 met the inclusion criteria. Cox proportional hazards models were used to estimate the dose-response relationship between lung function defined as FEV1 divided by height cubed and all-cause and COPDvascular mortality over 11-16 years of follow-up.

Results: Mortality rate increased in a dose-response manner from highest to lower FEV1/height3 deciles. For both all-cause and COPDvascular mortality, we observed approximately linear and statistically significant trends (p<0.001). Adjusted hazard ratios (HR) of all-cause mortality for persons in the 8th best, the 5th and the worst deciles were 1.27 (95% CI: 1.08–1.49), 1.37 (1.18-1.60) and 2.15 (1.86–2.48), respectively; for COPDvascular mortality, the respective HRs were 1.84 (1.29-2.63), 2.35 (1.67-3.28) and 3.46 (2.50–4.78). Patterns were similar across countries, with some statistically insignificant variation.

Conclusions: FEV1/height3 is a strong predictor of all-cause and COPDvascular mortality, across full distribution of values, including persons with preserved lung function. The strongest association seen with deaths from COPDvascular causes.

Characterising a role for extracellular vesicles in cystic fibrosis and COPD

Judith Coppinger

Royal College of Surgeons in Ireland, Ireland

Cystic Fibrosis and chronic obstructive pulmonary disease (COPD) are chronic lung disease characterised by progressive reduced lung function, inflammation associated with underlying genetic defects in the CF trans membrane conductance regulator (CFTR) channel. In our studies, we have been studying the role of extracellular vesicles (EVs) a heterogenous group of nanoparticles exchanged among cells that play a role in maintaining lung homeostasis.EVs are emerging as key signalling mediators via RNA and protein cargo that they transfer between cells. Due the disease- specific nature of their cargo, EVs could serve as all- in-one multimodal biomarkers.

Objectives: To investigate the role of EVs in CF and COPD as disease-specific biomarkers reflecting inflammation in COPD and CF airways.

Methods: We used nanoparticle tracking analysis and proteomic based mass spectrometry to characterize EVs in CF and COPD airway models.

Results: EVs are produced in CF and COPD airway with significant differences between CF and control airway samples.Significant changes in protein expression was determined in EVs obtained in airway samples from PWCF and in primary COPD airway models compared to controls. Alterations in the expression of inflammatory and antibacterial proteins impacting the ability to clear bacterial infection in CF and COPD airways were observed.

Conclusion: This study demonstrates that EVs are produced in CF and COPD airway cells, have differential protein expression in both that could impact neutrophil recruitment and antibacterial killing.

Audience Take Away:

- Our objective in this project is to significantly advance our fundamental knowledge of host EVs in CF and COPD
- The primary benefit is increased knowledge for the advancement of human health in chronic lung diseases that claim the lives four million people annually
- The audience will learn more about extracellular vesicles (EVs) as emerging players in CF and COPD and how they can potentially differentiate between different disease states
- This topiccould be used for teaching in medical and basic science modules under new advances in medical research

Biography:

Judith Coppinger obtained her PhD from the RCSI in 2004 before undertaking postdoctoral training at the Scripps Research Institute, San Diego. In 2011, she joined the University of California, San Diego as a faculty member before receiving a Science Foundationof Ireland Award and returning to Ireland. Her research is focused on using interdisciplinary approaches to decipher signalling networks dysregulated in disease. She has worked in lung research- with a focus on Cystic Fibrosis field for more than 15 years. Recent research focus has been on examining the role of extracellular vesicles in CF airway pathogenesis, COPD and lung cancer.
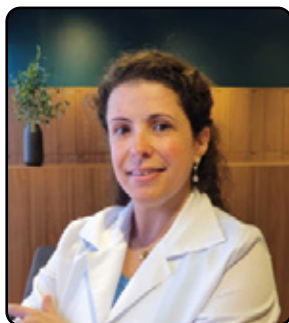
Age and disease have a distinct influence on postural balance of patients with COPD

Catarina Costa Boffino[*1, 2, 3], **Ana Carolina Alves Caporali Pereira**[4], **Daniel Boari Coelho**[5], **Rafaella Fagundes Xavier**[4],
Cibele Cristine Berto Marques da Silva[4], **Clarice Tanaka**[4], **Renato Teodoro Ramos**[6], **Wellington Pereira Yamaguti**[7], **Celso R. F.Carvalho**[4]

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[4]Physical Therapy Department, University of Sao Paulo, Brazil

[5]Human Motor Systems Laboratory, University of Sao Paulo, Brazil

[6]University of Toronto, Canada

[7]Sirio-Libanes Hospital, Brazil

The postural imbalance is an extra-pulmonary condition, associated with Chronic Obstructive Pulmonary Disease (COPD). COPD affects older individuals and it is unclear whether balance abnormalities can be described as pathophysiological mechanism or aging. The present study aimed to evaluate the influence of age or disease on postural balance of patients with COPD. Patients with COPD over 50 years old were compared with age-and sex-matched healthy adults, and with sex-matched younger healthy adults (n=30 in each group). The Modified Sensory Organization Test (mSOT) was performed in four different conditions fixed or sway-referenced surface both either with full or no vision. It was analyzed the center of pressure (CoP) variables: amplitude, velocity, root-mean-square and load asymmetry. Three-way ANOVA and post hoc analysis were performed been represented of age (older or COPD compared with younger healthy adults) or disease influences (COPD compared with older healthy groups). Main results were as follows: The CoP excursion was faster, with higher amplitude and variability progressively from COPD vs. older healthy vs. younger healthy adults ($p<0.05$) showing age and disease influences ($p<0.05$). Age and disease influences were also observed in the sway-referenced surface in both vision conditions. Impairment in postural balance was found related to aging and disease in patients with COPD older than 50 years.

Audience Take Away:

- Postural balance can influence COPD through age and disease mechanisms
- Postural balance can influence breathing mechanism through sensory-motor mechanisms
- Postural balance is one of extra-pulmonary mechanisms that influence COPD

Biography:

Catarina Costa Boffino is Physical Therapist graduated in Medicine School of Sao Paulo University (FMUSP). She has post-graduated specializations in Neurology through Clinical Hospital of FMUSP and for Orthopaedics in Sao Paulo Federal University (UNIFESP). Catarina has Master Degree in Psychology in concentration are of Neuroscience and Behaviour in University of Sao Paulo (USP). Also, Catarina is Professor in São Paulo Methodist University and is volunteer colaboratory researcher at LIM-23 in Psychiatry Institute of Clinical Hospital of FMUSP.

Bench topNuclear Magnetic Resonance- Based metabolomics for the diagnosis of lung diseases

Jose Luis Izquierdo Garcia

Complutense University of Madrid, Multidisciplinary Institute, Spain

Nuclear Magnetic Resonance Spectroscopy (NMR)-Based metabolomic analysis of biofluids provides a potential tool for understanding biochemical processes associated with respiratory diseases. However the translation of NMR-based metabolomics to a clinic environment has several limitations.While high-resolution NMR spectrometers are used daily in several research fields, their use as a routine tool in clinic is limited due to both the expensive acquisition and maintenance cost. To bridge this gap between basic science and clinic translation, we propose the use of bench top NMR spectrometers.Until recently, the magnetic field homogeneity for bench top low-field NMR spectrometers did not reach the subparts per million needed to record spectra with sufficient resolution. However, manufacturers now propose bench top cryogen-free magnets working at either 42.5, 60, or 80 MHz for 1H for educational or industrial applications that overcome this issue. The main advantages of such equipment deal with

(ı)   Affordable purchase price.

(ıı) The cheap maintenance cost due to the absence of cryogenic fluids.

(ııı) The small size of the instruments, and

(ıϖ) The easy operation and troubleshooting of the spectrometers.In this context, we have tested the potential of benchtop NMR-based metabolic fingerprinting for the diagnosis of respiratory infections. We have proved the potential of our bench top NMR-based metabolomics approach in three independent studies: Tuberculosis in adults, Tuberculosis in children and bovine tuberculosis.Serum and urine samples were analyzed using a Magritek 60MHz Spinsolve spectrometer. Performance of classificatory model was compared with a classical HF NMR-based metabolomic approach obtaining similar identification rate.

Audience Take Away:

- Introduce the potential of metabolomics analysis for Respiratory Diseases Diagnosis
- Understand the changes in the metabolism associated with Respiratory Diseases
- Provide a practical solution for the stratification of patients

Biography:

Jose Izquierdo-Garcia obtained his doctorate on metabolomic research at University Complutense of Madrid (UCM) under the supervision of Professor Jesús Ruiz-Cabello. After his PhD degree, he obtained a NIH Postdoctoral Scholarship (2012) to join Sabrina Ronen lab at University of California San Francisco (UCSF), a leader institution on metabolic imaging research. In 2015 he obtained a Marie Curie fellowship at Spanish Center of COPDvascular Research (CNIC) to study the metabolic reprograming in Pulmonary Arterial Hypertension. After 2 years of project he was promoted to CO-IP of "Nanotechnology, Molecular Imaging and Metabolomics group" at CNIC. In 2018 he joined CIC biomaGUNE (Donostia) as a member of the research staff. Recently, he have obtained a Retos-JIN research project to start up a new research group at University Complutense. Jose Izquierdo-Garcia is professor at Complutense University since 2018 and member of CIBERES network since 2009. He is PI of "Biomedical Imaging" research group, IP of one national research project and one European project, and author of more than 50 articles in Q1 journals, patents, review journals and book.

COPD ubiquitous healthcare system

Hamid Mcheick

University of Quebec at Chicoutimi, Canada

Nowaday, ubiquitous health system is reshaping the research in the medical domain due to its potential to concurrently overcome the challenges encountered in the traditional healthcare systems.Prediction of exacerbation of Chronic Obstructive Pulmonary Disease (COPD) is considered incurable disease and the fourthdifficult problem in the medical field.Many issues face researchers in the medical domain,such as modelling context (risk factors) of a patient, uncertainty, accuracy of these factors and their relationship, and preventing exacerbation.These issues have been handled in may research projects. However, healthcare systems for COPD needs to represent the risk facors and to design rules to increase the accuracy. In addition, traditional treatment plan and non-fully automatic applications are still used and have many issues, such as accuracy and performance. The goal of this research is to build reliable mechanisms to improve life quality of COPD patients and to protect them against risk factors. In this talk, I will present COPD healthcare architectural model including context modelling, context representation and rule-based recommendations.

Biography:

Hamid Mcheick is a full professor in Computer Science department at the University of Québec at Chicoutimi, Canada. He has more than 25 years of experience in both academic and industrial area. He has done his PhD in Software Engineering and Distributed System in the University of Montreal, Canada. He is working on design and adaptation of smart software applications; designing healthcare framework for medical domain; and designing smart Internet of Things and edge framework. He has supervised many post-doctorate, PhD, master and bachelor students. He has nine book chapters, more than 60 research papers in international journals and more than 150 research papers in international/national conference and workshop proceedings in his credit. Dr. Mcheick has given many keynote speeches and tutorials in his research area. Dr. Mcheick has gotten many grants from governments, industrials and academics. He is a chief in editor, chair, co-chair, reviewer, member in many organizations (such as IEEE, ACM, Springer, Elsevier, Inderscience) around the world.

Mesencure- A promising treatment for severe COVID-19 pneumonia

Shadi Hamoud

Rambam Health Care Campus, Israel

Background: Since DEC 2019 health authorities all over the world are in continuous combat against theCoronavirus disease 2019 (COVID-19) pandemic. The disaese was first described in Wuhan, China on DEC 2019, followed by rapid spread all over the world, and caused by the Coronovirus SARS-COV-2. So far, more than 510 million cases were confirmed worldwide, with more than 6.2 million fatalities. Common symptoms include fever, throat pain, dyspnea, cough and loss of taste and/or smell sensations. The incubation period of the virus lasts 2-14 days, with a median of 5 days. Common laboratory findings include lymphopenia, elevated CRP, elevated D-dimer and abnormal liver enzymes. Typical imaging findings are interstitial pulmonary ground-glass opacities and consolidations, with a bilateral and peripheral distribution. Every other organ and system in the body maybe involved in the disease. Treatment is mainly supportive to prevent and treat severe respiratory involvement, and the primary available therapies are antivirals(Remdesivir,Ritonavir-boostednirmatrelvir(Paxlovid),molnupiravir and others), anti-inflammatory agents (mainly corticosteroids) and supportive respiratory therapy (oxygen and ventilatory support). In addition, antibody therapies currently have been an essential part of SARS-CoV-2 infection treatment. Anticoagulants are used in severe/hospitalized cases to prevent the commonly occuring venous and arterial thrombo-embolic complications.Ongoing trials are proposed different therapeutic options including various drugs, convalescent plasma therapy, monoclonal antibodies, immunoglobulin therapy, and cell therapy.
Mesencure: Activated mesenchymal stromal cells isolated from adipose tissue of healthy donors, is a cell-based therapy specifically developed to attenuate the hyper-inflammatory response in COVID-19 pneumonia and the alleviate the life-threatening respiratory distress. The cells are primed to enhance their immunomodulatory and anti-inflammatory properties, and target inflammation suppression, regeneration of damaged lung tissue, and suppression of cytokine storm. Cells Contribute to the healing process of the respiratory system and other internal organs affected by the progression of the coronavirus infection.

Preclinical Data:
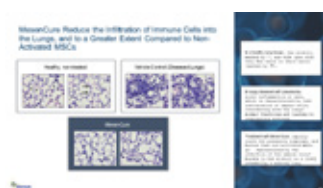
Our Clinical Study:
Completed Phase II clinical study:
PhaseII study (inclusive of Phase I/II),for pulmonary manifestation of COVID-19. Included 50 severe patients with SpO2 ≤ 93% and/or diffuse pneumonia were treated with Mesencure plus the SoC. Dose: 1.5•106 cells/kg BW, up to three administrations (d1, d3, d5). Safety and efficacy endpoints.
Results:
>68% reduced mortality in severe Covid-19 patients treated with Mesencure
Mesencure shortened the hospital length of stay (LoS) of the most complicated patients (LoS > 7 days) by 9.4 days or 38%.
>57% reduced risk of deteriorating to invasive ventilation in severe Covid-19 patients treated with Mesencure. Respiratory functions rapidly improve in treated patients.
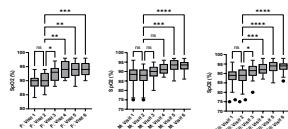
Mesencure produced the most profound effects, to date, in severe COVID patients.

Summary:

Mesencure resulted in:

- 68% reduced mortality ($p < 0.05$)
- 9.4 days reduced hospital LoS of the complicated patients ($p < 0.01$)
- 57% reduced risk of invasive ventilation ($p < 0.05$)
- 59% patients released within 2 days after last Mesencure dose
- 52% reduction in median CRP ($p < 0.0001$)

Biography:

Dr. Shadi Hamoud is currently affiliated to Department of Internal Medicine, Rambam Health Care Campus, Haifa, Israel, and continuing research in the specialized scientific area of Internal medicine. Dr. Shadi Hamoud is serving as an honorary reviewer for reputed journals and has authored several articles along with chapters in different books related to Health care.

Expanding access to pulmonary rehabilitation by embedding it in educational institutions and community centers

Tammie Fournier*, **Robyn Palk, Lisa Curtis**
New Brunswick Community College, Canada

Globally, COPD impacts approximately 10% of the population and is the third leading cause of death. Pulmonary Rehabilitation (PR) is a gold standard intervention in the management of COPD developed to slow disease progression, reduce disabling symptoms, and overall improve the quality of life of participants. This program includes a combination of exercise, education and behavior modification leading patients to a more active lifestyle and reducing hospital emergency visits. Barriers identified for accessing PR include the overall lack of programs, the proximity of available programs to participants, and the low number of healthcare workers trained in pulmonary rehabilitation delivery. Essentially, less than 1.5 percent of the global COPD populations have access to pulmonary rehabilitation and clinics are usually delivered from a hospital setting. Pulmonary Rehabilitation is rarely offered in community centers or within post-secondary institutions, including those with medical programs. This presentation will explain how a community-based and student-led pulmonary rehabilitation clinic was operationalized at the New Brunswick Community College in Saint John, Canada. The research-funded clinic is based within the community college setting and is led by healthcare students of various disciplines guided by two research coordinators (Registered Respiratory Therapists). Up to date data from the pulmonary rehabilitation research project will be discussed as well as preliminary findings based on 6 Minute Walk Test and St George Respiratory Questionnaire. Furthermore, how community centered PR can be expanded to service rural areas by partnering with local community centers or gyms in conjunction with developing healthcare student skills and knowledge to lead an effective real-world PR program, will be discussed.

Audience Take Away:
- A novel approach to expanding the reach of pulmonary rehabilitation to those in need
- Utilizing this approach to improve accessibility to PR in their communities
- Operationalizing a pulmonary rehab program within a college setting
- Replicating the approach for health organizations and educational institutions anywhere in the world

Biography:
Tammie Fournier leads and operates health programming at NBCC including Pharmacy Technician, Medical Laboratory Sciences, and Respiratory Therapy. She leads two government-funded applied research projects and has co-authored two research articles for the Canadian Journal of Respiratory Therapy. Tammie studied Respiratory Therapy at the New Brunswick Community College (NBCC) in New Brunswick, Canada. As a respiratory therapist for 30 years, Tammie has worked in acute and chronic care as well as education. She has completed a Master of Education with the University of New Brunswick and holds certification in tobacco education and respiratory education through the Canadian Network for Respiratory Care.

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Chronic Obstructive Pulmonary Disease (COPD) in patients with hip fractures: Prevalence, clinical characteristics, and impact on outcomes

Siti Nur Fariza Nordin[*],Shyan L Goh Wichat Srikusalanukul, Alexander Fisher
The Canberra Hospital, Australia

Background: There is a paucity of information regarding patients with COPD and hip fracture (HF), one of the most devastating diseases in the elderly.

Objective: To explore in a large cohort of HF patients the prevalence of COPD, its clinical profile and impact on hospital outcomes.

Methods: In 3681 consecutive patients (mean age 82.8±8.26 years, 74.8% females) admitted with a HF between 1999 – 2018 data on comorbidities, laboratory parameters, including bone turnover markers, medications, and in-hospital outcomes (mortality, length of stay) have been analysed. The prevalence of COPD (adjusted for age and gender) among HF patients and in the general population (data from Australian Bureau of Statistics and Australian Institute of Health and Welfare) were compared.

Results: The prevalence of COPD among HF patients was 15.3% (n=563; 13.8% among females and 19.7% among males), while in the total Australian population aged 65 years and above it was about 7.5% in males and 6.7%in females. The group of HF patients with COPD compared to the rest of the cohort had a higher proportion of subjects younger than 80 years of age (35,2% vs. 29.5%, p=0.008), males (32.5% vs. 23.9%, p<0.001), current (13.3% vs. 3.9%, p<0.001) and ex-smokers (23.3% vs.10.3%, p<0.001), alcohol over-users (7.8% vs. 3.7%, p<0.005), walking aids users (39.1% vs.34.5%,p=0.039), with a history of coronary artery disease (CAD, 36.8% vs. 25.6%, p<0.001), myocardial infarction (MI,10.3% vs.7.3%, p=0.016), and elevated PTH levels (>6.8 pmol/L: 52.6% vs.48.0%, p=0.51). The COPD group did not differ from the non-COPD patients in regard the mean age, but the males were younger (on average 1.6 years, p=0.020). The percentage of patients admitted from a permanent residential care facility, diagnosed with hypertension, atrial fibrillation, stroke, chronic kidney disease, anaemia, type 2 diabetes mellitus, dementia and Parkinson's disease as well as with hypoalbuminemia (<33g/L), vitamin D deficiency [25(OH)D<25 nmol/L] or insufficiency [25(OH)D<50 nmol/L] was similar in groups with and without COPD; the bone turnover markers (P1NP and βCTX) also did not show significant difference. The COPD patients were more often prescribed anti-resorptive drugs (mainly bisphosphonates, 17.4% vs.11.3%, p<0.001) and vitamin D supplements (33.0% vs. 28.6%, p=0.035) but not calcium supplements (15.4% vs.17.3%, p=0.301). The COPD group had a 1.6-fold higher mortality rate (7.6% vs.4.7%, p=0.007) and a significantly increased number of patients with prolonged hospital stay above 10 days (66.1% vs. 60.7%, p=0.016) or 20 days (29.8% vs. 24.6%, p=0.010).

Conclusions: The prevalence of COPD among HF patients is about 2-fold higher than in the general population of the same age and gender. Patients with COPD comprise 15.3% of the total HF cohort. This group demonstrates a higher proportion of males, users of walking aids, smokers, alcohol over-users, individuals with a history of CAD, MI and hyperparathyroidism,but only one of six patients received osteoporotic therapy pre-HF. Presence of COPD in HF patients is associated with poor outcomes, namely, in-hospital death and prolonged hospitalisation. Assessment of bone status and preventive osteoporotic treatment should be implemented in routine clinical practice for all COPD patients.

Potential application of a simple prototype inspiratory muscle device and modified fast-deep breathing techniques via voldyne incentive spirometry enhances the respiratory function, walking capacity, and quality of life among people with Chronic Obstructive Pulmonary Disease (COPD)

Jirakrit Leelarungrayub[*1],Decha Pinkaew[1], Thanyaluck Sriboonreung[1], Yothin Pothasak[1], Rungthip puntumetakul[2], Jakkrit Klaphajone[3]
[1]Chiang Mai University, Thailand
[2]Khon Kaen University,Thailand
[3]Department of Rehabilitation Medicines, Chiang Mai University, Thailand

Chronic Obstructive Pulmonary Disease (COPD) is still themain problem of people around the world as in Thailand. Low quality of life with less exercise intolerance is a critical issue for rehabilitation. Therefore, the development of a simple device from folk materialsfor respiratory muscle training or modified training protocol arevery challenged for the health team asmedicine nurse, physical therapist, or rehabilitation physicians. Therefore, the objectives in the two published studies were (1) to develop a simple device from polyvinyl chloride (PVC)-plastic water pipe and plastic caps inwhich a centerresister at 2, 4, and 6 mm and (2) to evaluate a fast-deep breathing technique via regular Voldyne® incentive spirometer on respiratory muscle function, walking capacity and quality of life among COPD people. The results of a simple inspiratory muscle training in 10 COPD people for 4 weeks showed that the forced vital capacity (FVC), respiratory muscle strength (PImax), walking capacity (6-MWD), and quality of life (QoL) were significant improvement as same as training with a standard respiratory muscle trainer (Portex® device). In addition, a result of the fast-deep breathing technique via voldyne® IS among 15 COPD people for 4 weeks showed improvement of the FVC, FEV1, PImax, 6-MWD, and QoL when compared to slow-deep breathing via Voldyne® IS. Therefore, both results indicate that the simple procedures for improving the health of COPD patients can be performed by developing a simple device and modifying a breathing technique and these can be learned for developed and low-economic countries around the world.

Audience Take Away:

- This study shows a simple idea and possibility to apply in the clinic
- Developing a simple device from folk materials with low cost and simple protocol can be performed
- Simple device and modified techniques can be used and copied ideas to anyone around the world

Biography:

Associate Professor Dr. Jirakrit Leelarungrayub studied Physical Therapy at the Khon Kaen University, Thailand, and graduated with a BSc. in 1993 and Medical Biochemistry at the Faculty of Medicine, Chiang Mai University, Thailand as Ph.D. in 2006. He is a university lecturer at the department of Physical Therapy, Faculty of Associated Medical Sciences, Chiang Mai University in a COPDpulmonary branch since 1994. He has published more than 52 research articles and 5 textbooks.

Ocular manifestations in COVID-19 patients

Saber Soltani

Tehran University of Medical Sciences, Iran (Islamic Republic of)

There are reports of ocular tropism due to respiratory viruses such as severe acute respiratory syndrome-coronavirus-2 (SARS-CoV-2). Various studies have shown ocular manifestation in coronavirus disease-2019 (COVID-19) patients. We aimed to identify ophthalmic manifestations in COVID-19 patients and establish an association between ocular symptoms and SARS-CoV-2 infection.A systematic search of Medline, Scopus, Web of Science, Embase, and Cochrane Library was conducted for publications from December 2019 to April 2021. The search included MeSH terms such as SARS-CoV-2 and ocular manifestations. The pooled prevalence estimate (PPE) with 95% confidence interval (CI) was calculated using binomial distribution and random effects. The meta-regression method was used to examine factors affecting heterogeneity between studies.Of the 412 retrieved articles, 23 studies with a total of 3,650 COVID-19 patients were analyzed. The PPE for any ocular manifestations was 23.77% (95% CI: 15.73-31.81). The most prevalent symptom was dry eyes with a PPE of 13.66% (95% CI: 5.01-25.51). The PPE with 95% CI for conjunctival hyperemia, conjunctival congestion/conjunctivitis, and ocular pain was 13.41% (4.65-25.51), 9.14% (6.13-12.15), and 10.34% (4.90-15.78), respectively. Only two studies reported ocular discomfort and diplopia. The results of meta-regression analysis showed that age and sample size had no significant effect on the prevalence of any ocular manifestations. There was no significant publication bias in our meta-analysis.There is a high prevalence of ocular manifestations in COVID-19 patients. The most common symptoms are dry eyes, conjunctival hyperemia, conjunctival congestion/conjunctivitis, ocular pain, irritation/itching/burning sensation, and foreign body sensation.

Bacterial spectrum of sputum in COPD patients in acute exacerbation admitted in a tertiary care centre

Ram Prasad P L
SRM medical college hospital and research centre, India

The most common cause of acute exacerbation of chronic pulmonary obstructive disease (AECOPD) is respiratory tract infections. The trend of bacterial flora changes from time to time and place to place. This study was undertaken to find out the common causative organisms causing exacerbations of COPD and their antibiotic sensitivity pattern in sputum culture of patients attending a tertiary care centre. To evaluate the spectrum of organisms and its antibiotic sensitivity in patients admitted with acute This was a retrospective study which included 100 COPD patients admitted in acute exacerbation in a tertiary care centre. Patients' demographic and clinical details along with results of sputum gram stain, aerobic culture and sensitivity were noted. Out of the 100 patients admitted to the hospital with acute exacerbation of COPD, 28 patients needed to be admitted to ICU, rest 72 patients were admitted to the general ward. About 42 patients presented with fever and 58 patients did not show any fever. The culture was positive for 34 out of 100 patients. The most common organisms isolated were Pseudomonas aeruginosa followed by Klebsiella pneumonia. The most common sensitive antibiotics were carbapenems and Polymyxin-B. Exacerbations due to bacterial infection increased the duration of hospital stay and ICU admission. Careful selection of antibiotics and early treatment could offer a faster resolution of acute exacerbation of COPD.

Audience Take Away:

- The common bacterial organisms can be understood from the given study along with the common sensitivity
- The common sensitive antibiotics are carbapenems and polymyxin B which is alarming
- The potential multidrug resistant organisms are emerging and may continue if antibiotics are misused
- This shows the importance of antibiotic stewardship and avoidance of irrational usage of antibiotics

Biography:

Dr. Ram Prasad has completed his MBBS in 2014 and has done his MD respiratory medicine from Seth GS medical college and KEM hospital, Mumbai. He has also completed Diplomate in national board (DNB respiratory medicine in 2019 and has received European diplomat in adult respiratory medicine in 2021. He has received appreciation as "Covid warrior" from Municipal Corporation of greater Mumbai for his work in covid pandemic in Mumbai, Maharashtra. He is currently working as assistant professor in department of respiratory medicine in SRM medical college hospital and research centre, Chengalpattu, Tamilnadu.

Quality of life in patients with COPD

Kranti Garg
Government Medical College, India

Chronic obstructive pulmonary disease (COPD) is associated with various co- morbidities, and there are systemic manifestations of the disease itself. People have poor acceptance for their chronic illness, duration of treatment and outcome. Hence, physical and mental health and health related quality of life (HRQL) is largely affected. Sometimes, extremes of psychological distress and stressful situations are the sole reason for exacerbations, thus showing that the relationship between COPD and psychological issues is bi-directional. It is also seen that differences in socio-demographics and illness perception and lower self-efficacy of symptom management in the background of psychological suffering and poor quality of life affects acceptance and adherence for treatment. This all leads to an additional burden on health care utilization.Global Initiative for Obstructive Lung Diseases (GOLD) 2022 has taken an initiative to assess and treat the COPD patients for mental health issues and HRQL. COPD Assessment Test (CAT) is recommended for classification of COPD patients, and their subsequent management. It is important to know that few other tools like Clinical COPD Questionnaire (CCQ), St. George's Respiratory Questionnaire (SGRQ), COPD and Asthma Sleep Impact Scale (CASIS), COPD and Asthma Fatigue Scale (CAFS), Functional Performance Inventory-Short Form (FPI-SF) etc can beroutinely used for COPD patients, depending on the domain/domains to be assessed. However, because of lack of knowledge, hesitancy with their use, and time constraints, they remain grossly underutilized. There is an urgent need for further research for development of simple, easy and quick patient and disease centered discrete screening tools, which can be applied singly or in combinations, for screening of COPD patients for psychological distress and quality of life, as a routine.If any patient screens positive with the use of screening questionnaires, a detailed assessment by an expert psychiatrist is required as anxiety, depression and panic disorders have been commonly diagnosed in patients of COPD, and need treatment. Psychiatrist hence should be an integral part of multi-disciplinary management teams. Short but dedicated counseling sessions as a part of every routine visit to the clinician, focusing on mental health, can also help patients awaiting/ declining psychiatrist intervention, and should be considered at every visit. The services of the ancillary staff can be taken for screening and counseling sessions. Additionally, the role of family and social support should never be negated.

Audience Take Away:

- Need for psychological and quality of life assessment in patients with COPD
- Various screening tools available to screen patients with COPD for psychological co- morbidities and evaluate their quality of life
- Audience can learn about the handy tools which can be used in their routine COPD's, and thus assist in better patient management in totality
- Audience can learn how these tools may assist during follow-ups of their patients
- Researchers can take up this issue for development of new simple and handy questionnaires

Biography:

Dr. Kranti Garg is working as Associate Professor in the Department of Pulmonary Medicine, Government Medical College, Patiala, Punjab, India. She graduated from Government Medical College, Patiala, Punjab in 2006, and completed her MD (Pulmonary Medicine) in 2010. She joined Department of Pulmonary Medicine, Government Medical College and Hospital, Chandigarh in 2011 as Senior Resident, and then in 2015 as Assistant Professor. Later in 2019, she joined as Associate Professor, Department of Pulmonary Medicine, Government Medical College, Patiala, Punjab.

The patient's perspective on COPD

Shimpy Goyal
Tecnia Institute of Advanced Studies (GGSIPU), India

Chronic obstructive pulmonary disease (COPD) is a common condition marked by persistent airway blockage. Exertional dyspnea and fatigue, for example, have a negative impact on patients' quality of life (QoL) and limit physical activities in daily life. COPD symptoms have a significant influence on quality of life; for example, 36% of patients who characterize their symptoms as mild-to-moderate also admit to being too breathless to leave the house. Additionally, symptoms in the early morning and late at night are a particular issue. Clinical tools, like patient questionnaires, are available to help clinicians reliably measure COPD symptoms. Integrated COPD care techniques, especially pulmonary rehabilitation, are beneficial for managing symptoms, enhancing exercise capacity, and perhaps boosting physical activity. Inhaled bronchodilators remain the basis of COPD pharmacological therapy, with alternatives that can be customized to match patients' needs through careful selection of the inhaled medication and delivery system. In order to improve QoL and consequent patient outcomes in COPD, an integrated strategy to disease care should be explored.

Audience Take Away:
- Optimizing the use of therapeutic interventions available to meet patients' needs should also be considered, including the right selection of inhaled drug (based on efficacy)
- The inhaler device used to administer it, as well as the introduction of LAMA/LABA combination therapy
- The patient's use of the proper inhaler method must be assured
-

Biography:
Shimpy Goyal is working as Assistant Professor in TECNIA INSTITUTE OF ADVANCED STUDIES, affiliated to GGSIPU, Delhi. She had Submitted PhD in Machine Learning from Banasthali Vidyapith, Rajasthan. She has qualified UGC-Net in the year 2018. She has done BTech (Hons.) and MTech (Hons.) in Computer Science from (UIET) & (DCSA) MDU University in 2012 & 2015 respectively. She has published near about 19+ Research Papers till now in reputed journals(SCI ,Scopus), in National & International Conferences. She has reviewed IEEE Conference paper, Scientific Reports Paper & ICACC-2021 paper. She has published 1 Patent and 1 Granted. She has authored book on Computer Architecture and organizations has participated in 16+ faculty development programs organized by ATAL (AICTE) and others. She has convened FDP & Various Tech fest and industrial visits.She is having 7 years of experience in Teaching, and 1 years' experience in Industry. Her areas of interest are Intelligence, Image processing, computer vision, machine learning, neural networks, and convolutional neural networks etc.

Incident COPD and its disparity associated with air pollution in American older adults: A national cohort study

Tszshan Ma[*1],Haisu Zhang[1], Joel Schwartz[2], Kyle Steenland[1], Noah C Scovronick[1], Stefanie Ebelt[1], Christine Ekenga[1], Dana Boyd Barr[1], Howard H Chang[1], Pengfei Liu[3], Liuhua Shi[1]

[1]Emory University, USA
[2]Harvard T.H. Chan School of Public Health, USA
[3]Georgia Institute of Technology, USA

Ambient air pollution is a major risk factor for respiratory conditions, although its impact on Chronic Obstructive Pulmonary Disease (COPD) incidence is not clear and disparities in the association are not well characterized. To examine the association between long-term exposure to air pollution and COPD incidence, and modification by individual- and community-level factors. We constructed a nationwide population-based open cohort (2000-2016), by leveraging the Medicare Chronic Conditions Warehouse database and high-resolution population-weighted air pollution data, to estimate COPD incidence associated with annual mean particulate matter (PM2.5), nitrogen dioxide (NO2), and warm-season ozone (O3) using Cox proportional hazards models. We further tested effect modifications by individual- and community-level characteristics. Of 18.8 million participants, ~3.9 million developed COPD during follow-up, with a mean follow-up time of 8 years. The adjusted hazard ratios (HRs) and 95% confidence intervals for associations with COPD incidence were 1.032 (1.023-1.041) per 5 µg/m3 increase of PM2.5, 1.017 (1.014-1.020) per 5 parts per billion (ppb) increase of NO2, and 1.032 (1.028-1.037) per 5 ppb increase of warm-season O3. HRs for NO2 and O3 remained robust in three-pollutant models, whereas the HR for PM2.5 was attenuated. Further, individuals in communities with a lower physician-per-population ratio, higher percent of ever smokers, higher average BMI, or lower population density experienced higher risk. Long-term exposure to air pollution was significantly associated with the development of COPD among older US adults. Community-level differences suggest that contextual factors contribute to air pollution-related COPD disparities.

Audience Take Away:

- This is population-based cohort study in United States older adults to examine associations of long-term ambient air pollution exposure with COPD
- This study shows statistically significant effects of air pollution exposure on COPD development
- This study also shows contextual factors contributed to COPD disparities under effects of air pollutant exposures

Biography:

Tszshan Ma is a PhD student in Rollins School of Public Health, Emory University. She earned her Bachelor's in Biochemistry in Biochemistry from the University of Hong Kong, and Masters of Epidemiology in Harvard T.H. Chan School of Public Health. Her research interests focus on big data-based environmental epidemiology, especially the effects of ambient air pollution and other environmental risk factors on the development and progression of chronic diseases among older adults.

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G. John Chen

University of Kansas Medical Center, United States

Disparities in receiving depression treatment in us patients with COPD

Chronic Obstructive Pulmonary Disease (COPD) is a growing public health problem in in US. Depression is a common mental health problem accompanied by a high degree of emotional distress and functional impairment. More than one third of patients with COPD experience comorbid depression. Aims of this presentation are to describe burden of depression in patients with COPD, disparity in management of depression in COPD, and potential interventions and challenges to reduce the disparity in US. Anxiety and depression lead to worse health outcomes, including impaired health-related quality of life, increased mortality risk, health care utilization and costs in patients with COPD. There is a growing consensus that the therapeutic focus in COPD should move beyond disease modification and survival alone, and include assessment and improvement of patient-centered outcomes, including health status and psychological health. Despite the high prevalence of depression in patients with COPD and the beneficial effect of depression treatment, there are disproportions of subgroup CODP patients who are less likely to receive depression treatment such as antidepressant and psychotherapy, especially in racial/ethnic groups and living in rural areas. The governments and policymakers are keen to promote policies and interventions that integrate physical and mental health care, leading to improved patient outcomes, improve access to mental health care, reduced unnecessary hospital admission and emergency room visit, and reduced health care costs. Implementation of optimal approaches for managing depression in COPD remains many challenges in the field.

Biography:

Dr. Chenstudied Medicine at Tongji Medical College, Wuhan, China, and graduated medical degree. He received his MPH and PhD degree at University of North Carolina, Chapel Hill, USA. He received one year geriatric fellowship at Wake Forest University, Winston-Salem, USA, and then joined the faculty at the same university. Currently, Dr. Chen is a tenured professor at University of Kansas Medicine Center.He has/had been as a principle or co-investigator on multiple grants and published more than 80 research articles in SCIjournals.

Piotr Kusnierczyk

Polish Academy of Sciences, Poland

Genetics of endoplasmic reticulum aminopeptidases in non-small cell lung cancer - Differences between smokers and never-smokers

Immune eradication of cancer cells is dependent on polymorphisms of HLA class I molecules and antigen-processing machinery (APM) components, of which endoplasmic reticulum aminopeptidases 1 and 2 (ERAP1 and ERAP2) are most genetically polymorphic.We compared the distribution of ERAP1 and ERAP2 single nucleotide polymorphisms (SNPs) in Polish patients with non-small cell lung cancer (NSCLC) and controls, stratified according to their smoking status. We found significant but opposite associations in never-smokers and in smokers of all tested SNPs (rs26653, rs2287987, rs30187, and rs27044) but one (rs26618) in ERAP1. No significant associations were seen in ERAP2. Haplotype analysis indicated that the distribution of many ERAP1/2 haplotypes is opposite, depending on smoking status. Additionally, haplotypic combination of low activity ERAP1 and the lack of an active form of ERAP2 seem to favor the disease in never-smokers. We also revealed interesting associations of some ERAP1 polymorphisms with: age at diagnosis (rs26653), disease stage (rs27044), overall survival (rs30187), and response to chemotherapy (rs27044). The results presented here may suggest the important role for ERAP1 in the anti-cancer response, which is different in smokers versus never-smokers, depending to some extent on the presence of ERAP2, and affecting NSCLC clinical course.

Biography:

Piotr Kusnierczyk currently works at the Department of Clinical Immunology, Polish Academy of Sciences. Piotr does research in Immunology and Genetics. He was born in 1943 in Warsaw. Piotr Kusnierczyk received his Master's in Biology in 1965, Jaguellonian University, and Cracow, Poland and did his Master in Biochemistry in 1868, at the University of Wrocław, Wrocław, Poland. He was a visiting scientist in the College of Georgia, Augusta, the USA in 1998. He achieved the promotion of Science research fellow in the Japan Society from the Department of Chemical Toxicology and Immunochemistry, Faculty of Pharmaceutical Sciences, University of Tokyo, Japan in 1987. Piotr Kusnierczyk is also the titular Professor and Head of the Laboratory of Immunogenetics and Tissue Immunology, Ludwik Hirszfeld Institute of Immunology and Experimental Therapy, Wrocław, Poland in present 2006. Piotr Kusnierczyk achieved the membership in the Polish Society of Experimental and Clinical Immunology, Polish Society of Immunogenetics, The European Alliance of Associations for Rheumatology, Study Group on MHC-I-opathy. He has more than 121 publications in Pubmed. Their most recent publication is 'HLA-C*06:02-independent, a gender-related association of PSORS1C3 and PSORS1C1/CDSN single-nucleotide polymorphisms with risk and severity of psoriasis. He has 178 publications in various journals.

Gustavo Lionel Knop

Mayo Clinic, United States

Lung transplantation in COPD patients

Despite Chronic obstructive pulmonary disease (COPD) is still a leading cause of morbidity and mortality in the world, during the last decade interstitial lung diseasehas overtaken COPD as the most common indication for lung transplantation (LTx). Patients with advanced stage of COPD suffer significant debility. For selected group patientswith severe COPD, lung transplantation is the final optionafter considering other therapies like lung volume reduction surgery(LVRS) or bronchoscope lung volumereduction. These two therapies often improve a patient's functional and nutritional status sufficiently, allowing them to become better candidates for LTx.In the most recent transplant era, median survival post-transplant is 6.7 years.In advanced COPD, morbidity, and expected long-term survival can be difficult to quantify leaving the timing of LTx being also difficult to determine for candidate selection.Recently, a multidimensional functional grading system was developed: the BODE index (body mass index [B], degree of airflow obstruction [O], dyspnea [D], and exercise capacity [E] measured via the 6-minute walk test) to give light to precise moment to indicate LTx. A higher BODE index score (measured 0-10) correlates with an increased risk of death, with a score greater than seven associated with an 80% mortality at 4 years.Accordingly, patients with a BODE index greater than seven have been shown to have the greatest survival benefit with LTx. While patients with a BODE index between 5 and 6 have been shown to have a significant improvement in their health-related quality of life after LTx, they do not demonstrate a survival benefit.Bilateral LTx (BLT) is the most common procedure performed and accounts for over two-thirds of lung transplants, leaving Single LTx (SLT) in cases with remarkably high surgical risk or other surgical justifications to avoid bilateral approach.LTx has demonstrated to improve the patient's quality of life, exercise capacity, and overall survival in patients with COPD and other aetiologies of terminal lung disease. After LTx, graft failure is the most common cause of death within the first 30 days. From 30 days to 1 year, infection is the most common cause and more than 1-year post-transplant, obliterative bronchitis or bronchiolitis obliterans syndrome (BOS) COPD continues to constitute a high load on medical costs worldwide and has a high prevalence. While there have been multiple advances in the medical and surgical care of advance COPD patients, LTx is a beneficial and proven treatment for those with BODE index higher than seven, despite the many challenges that complicate posttransplant care.

Biography:

Dr. Gustavo Knop has more than 21 years of experience in COPDvascular and COPDthoracic Surgery. He is currently the only Heart Transplant Surgeon in Jamaica and wider Caribbean. Dr. Knop has practiced COPDvascular surgery in the top hospitals in the United Kingdom and Argentina.

George E Chaux

Cedars Sinai Medical Center, United States

Surgical therapies for severe emphysema/COPD

My presentation will focus on the current state of advanced surgical therapies available to treat patients with advanced emphysema/COPD. I will discuss surgical treatment options including bronchoscopic lung volume reduction, surgical lung volume reduction and lung transplantation for patients with advanced emphysema/COPD.

Audience Take Away:
- The audience will learn to identify and refer patients with advanced emphysema/COPD for surgical interventions to treat their disease
- Members of the audience will learn about selection criteria, surgical techniques used to treat advanced emphysema/COPD and expected results
- The audience will learn about complications related to surgical procedures to treat advanced emphysema/COPD

Biography:
Board certified in internal medicine, Dr. Chaux has specialized certification in pulmonary medicine and in critical care medicine. His primary areas of research and clinical interest involve state-of-the-art diagnosis, treatment and postoperative management strategies for lung transplant patients, interventional pulmonology, individuals with pulmonary arterial hypertension, lung cancer and idiopathic pulmonary fibrosis. Dr. Chaux has developed the interventional pulmonology program at Cedars-Sinai Medical Center which includes the advanced use of rigid bronchoscopy with laser treatment of airway tumors, stenting of airway strictures and the introduction of new technologies such as robotic navigation bronchoscopy for the biopsy of peripheral lung lesions and endobronchial ultrasound for the biopsy of mediastinal lymph nodes.Dr. Chaux has made numerous presentations at professional symposia, and he has written articles for peer-reviewed publications. He is a fellow of the American College of Chest Physicians and a member of the American College of Physicians, American Thoracic Society, California Thoracic Society, International Society of Heart and Lung Transplantation and the American Association of Brochology and Interventional Pulmonology.Dr. Chaux received his bachelor's degree from Bowdoin College in Brunswick, Maine and his medical degree from Boston University School of Medicine. At the University of California, San Diego Medical Center, he completed an internship and residency in internal medicine, serving as Chief Resident, and a fellowship in pulmonary and critical care medicine. He also served as Medical Director of the Lung and Heart-Lung Transplant Program at UCSD following his training and before coming to Cedars-Sinai Medical Center where he served as medical director of the lung transplant program for over twenty years. He is currently Medical Director of the Interventional Pulmonology Program at Cedars-Sinai Medical Center and has achieved the rank of Professor of Medicine at UCLA School of Medicine and Cedars-Sinai Medical Center.

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UPCOMING CONFERENCES

3rd Edition of International Conference on
COPD and Lung Diseases (COPD 2023)
August 28-30, 2023 - London, United Kingdom | Hybrid Event
https://magnusconferences.com/copd-lung-health/

Questions? Contact

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