

13th International Conference on
Allergy, Immunology & Rheumatology

September 30, 2021



Keynote Forum



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James Windford R. Gelaga

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A Paradigm Shift in Allergen Immunotherapy in this Time of the Pandemic

Allergen-specific immunotherapy has been used for over 100 years as a desensitizing therapy for allergic diseases like Asthma, allergic rhinitis, allergic conjunctivitis and atopic dermatitis among patients with aeroallergen sensitivity and represents the potentially curative and specific method of treatment. Route selection varies considerably depending on several factors, including vaccine availability or approval, location, cost, patient's characteristics or the preference of the patient and the physician. Subcutaneous injection and oral immunotherapy are the methods that are available at present. Subcutaneous injections are done by the allergist in a clinic while oral immunotherapy is taken by patients themselves in the comfort of their homes. At the start of the Covid 19 pandemic wherein it is not safe for the allergists nor the patients to have a face to face encounter, the oral method is a safer alternative without compromising the treatment goal.

Biography

Dr. James Windford R. Gelaga completed his medical degree at the age of 23 at Cebu Doctors' University College of Medicine in Cebu City, Philippines. He finished his pediatric residency training at Cebu Doctors' University Hospital and had his fellowship training in Allergy, Asthma and Clinical Immunology at University of Santo Tomas Manila, Philippines. He is currently a Diplomate of the Philippine Pediatric Society and Philippine Society of Allergy, Asthma and Immunology. A member of the Occupational Allergy and Immunotherapy Council of the Philippine Society of Allergy, Asthma and Immunology. He is currently a practicing allergist in the Philippines.

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Scientific Tracks & Abstracts



Sessions on

Transplantation | Immunology | COVID -19 | Pharmaceutical Sciences | Vaccines and Immunization | Immune disorders | Pharmacy Practice

Session Introduction

Title: Resolving the heterogeneity of human circulating innate lymphoid cells via simultaneous, high-dimensional analysis of protein and gene expression

Christian R Aguilera-Sandoval, BD Biosciences, USA

Title: Comparison of Dabigatran with Warfarin in treatment of Acute Deep Vein Thrombosis in view of efficacy and safety

Jalpa Suthar, Ramanbhai Patel College of Pharmacy, India

Title: Cytokine profiles of School-Aged Children Infected with Schistosomiasis before and after Praziquantel Treatment

Edward Okonjo, Technical University of Kenya, Republic of Kenya

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Resolving the heterogeneity of human circulating innate lymphoid cells via simultaneous, high-dimensional analysis of protein and gene expression.

Christian R Aguilera-Sandoval

BD Biosciences, USA

Cancer treatment has been revolutionized with the development of immunomodulatory therapies. These therapies have primarily focused on enhancing T-cell responses: whether it is unleashing T cells through blockade of regulatory checkpoint inhibitors or generation of chimeric antigen receptor (CAR) T cells. However, there has been recent interest in harnessing the immunotherapeutic potential of other cytotoxic cells such as Natural Killer (NK) cells. Similar to NK cells, innate lymphoid cells (ILCs) may offer another target of these immunotherapy approaches. Before the potential of these cells can be realized, there is a need for better understanding of these recently described cell populations. ILCs act as the immune system's first responders and have been shown to play a key role in tissue homeostasis, chronic inflammation and cancer. Three main groups of non-cytotoxic ILCs (ILC1, ILC2 and ILC3) have been broadly defined based on developmental trajectories and function, driven by expression of specific transcription factors. Deeper characterization of these cells through either high parameter protein analysis or single cell RNA sequencing has revealed a more complex and heterogeneous nature of ILCs across different tissues and donors. Therefore, the identity of ILCs is still elusive and controversial.

In this study, we developed a comprehensive approach to further refine the signatures of human circulating ILC subsets. Total ILCs (Lineage- CD127+ cells) were enriched from 4 normal donors by flow sorting using the BD FACSAria™ Fusion cell sorter and processed for downstream single-cell multiomic characterization. BD® AbSeq reagents and a targeted BD Rhapsody™ Immune Response Panel were used to enable simultaneous detection of 42 proteins and 399 genes using the BD Rhapsody™ Single-Cell Analysis System. Differential protein and gene expression analysis in addition to combinatorial expression of CD294 and CD117 confirmed 3 conventional ILC populations as well as the signatures of three distinct subsets within ILC1. This discovery approach provided information about relative expression of a small selection of proteins or surface marker-coding genes that enable the discrimination of these ILC subsets. These data were used to design high-parameter flow cytometry panels for high-throughput analysis of different healthy donors. ILC subsets differentially distributed across donors were detected and defined using unsupervised computational analysis confirming the result of multiomic analysis.

Biography

Christian Aguilera-Sandoval has a passion for immunology and analysis—after obtaining his Ph.D. in Immunology from UCLA and a productive immunology post-doctorate at UNC-Chapel Hill focusing in immunotherapy testing and development in, In Vivo models, he continues building his career helping researchers ask and answer the difficult questions through flow cytometry and multiomics. Currently, a Scientific Advisor with BD, focusing on providing scientific advice to Fortune 500 companies, fostering strong networks to facilitate and streamline the discovery process and to present/publish current scientific breakthroughs achieved in High Dimensional Biology through the partnership of KOLs in immunology, Immuno-oncology, and immunotherapy.

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Comparison of Dabigatran with Warfarin in Treatment of Acute Deep Vein Thrombosis in View of Efficacy and Safety

Jalpa Suthar

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Background: The direct oral thrombin inhibitor dabigatran has a predictable anticoagulant effect and may be an alternative therapy to warfarin for patients who have acute venous thromboembolism. Dabigatran was proven to have similar effect on the prevention of recurrence of venous thromboembolism and a lower risk of bleeding compared to vitamin K antagonists. This study aimed to compare the safety and efficacy of Dabigatran with Warfarin in patients with DVT.

Materials and Methods: A retrospective study in patients with DVT who received dabigatran 110 mg twice and warfarin 50 mg once in a day for treatment of DVT. Demographic details, drug treatment, medical history, presenting complains and diagnosis was recorded in CRF. Descriptive statistical analysis was done using MS Excel.

Results: In total, 60 patients with DVT were divided into 2 treatment groups (30 to dabigatran and 30 to warfarin). Out of total patients, 15 (25%) patients from 31-40 age group and 37 (62%) were women seen higher prevalence. The duration of treatment was 6 months. Majority of them 32 (53.4%) had Poplital femoral DVT. Dabigatran treatment group 26 (86.6%) showed better recanalization at the end of the 6-month treatment duration while in Warfarin there are 15 (50%) patients. All the parameters had significant differences except for patients who had pulmonary embolism even on medications. There was no patient in dabigatran group who had bleeding while 3 (10%) patients in warfarin group had bleeding.

Conclusion: For the treatment of acute DVT, a fixed dose of dabigatran is as effective as warfarin, has a safety profile that is similar to that of warfarin, and does not require laboratory monitoring. The findings of the study will give new insights into the selection of treatment regimens in patients with DVT.

Biography

Jalpa Suthar is presently working as an associate professor at, Department of Pharmacology & Clinical Pharmacy, Ramanbhai Patel College of Pharmacy, CHARUSAT, Changa. She has a total 14 years of teaching experience including 10 Years of research experience in Pharmacy field. She has to her credit 23 national and international research publications in reputed journals. She has guided 17 M.Pharm students & 2 students perusing PhD under her guidance. She has awarded by "Late Smt VG Yeole memorial Award" in the 23rd National Annual APTI convention APTICON-2018 for the best paper publication in Indian Journal of Pharmacy Practice. She has presented 15 posters and oral papers at various national and international colleges and presented paper at 7th International Conference on Clinical Trials, September 24-26, 2018 at Chicago, USA. She has received Travel Grant from Indian Council of Medical Research (ICMR) of Rs 95,922/- towards the travel expenses and visa fees to attend 5th International Conference on Clinical Pharmacy and Health Care, September 17-18, San Antonio, USA. Also received Travel Grant from Council of Scientific and Indian Research (CSIR) of RS. 30,000/-.

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Cytokine profiles of School-Aged Children Infected with Schistosomiasis before and after Praziquantel treatment

Edward Okonjo

Technical University of Kenya, Republic of Kenya

Statement of problem: Schistosomiasis is a parasitic disease that affects millions of people in 78 countries globally. Children under the age of 14, who have the chronic disease may suffer from anemia and malnutrition that contribute to lost days at school and pervasive learning disabilities. The infection is prevalent in Kenya, especially in endemic areas, contributing to significant morbidity. The cellular response pattern is associated with both the acute and chronic phases of the disease, in which cytokines play a critical role. The objective of this study was to evaluate the cytokine profiles of IL-4, IL-2, IL-10, IL-5, IFN- α , and TNF in serum samples of infected school-aged children by using flow cytometry before and after treatment.

Findings: The analysis indicated a shift in the expression of the cytokines after treatment with all the cytokines being downregulated, except TNF. There was a general trend of decrease in the expression of the cytokines at six and twelve weeks after treatment as compared to the pretreatment levels. There were statistically significant differences in the expression in IL-2 ($P=0.001^{**}$), IL-4 ($P=0.033^{*}$), IL-10 ($P=0.001^{***}$), IFN- α ($P=0.023^{*}$), and IL-5 ($P=0.0001^{***}$), except in TNF ($P=0.095$).

Conclusion and Significance: The reduction in the cytokine levels can be directly related to the influence of the drug praziquantel, modulating the cytokine response by elimination of adult worms, decline in parasitic load, and reduction of morbidity. Therefore, cytokine response is directly related with the influence of treatment in the variation of the immune response.

Biography

Edward Okonjo is a Lecturer at the Department of Applied and Technical Biology at the Technical University of Kenya. He has a PhD in Parasitology from Technical University of Kenya. Dr Okonjo's research interest is in the immunology of parasitic organisms with an emphasis on Schistosomiasis and Soil Transmitted Helminthes (STHs). More specifically on understanding cellular responses and how these responses influence transmission dynamics. Dr Okonjo is a member of the Kenya Society of Immunology (KSI).

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Accepted Abstracts



Ethnobotanical and antimicrobial activities of the *Gossypium* (Cotton) genus: A review

Luciene Ferreira De Lima

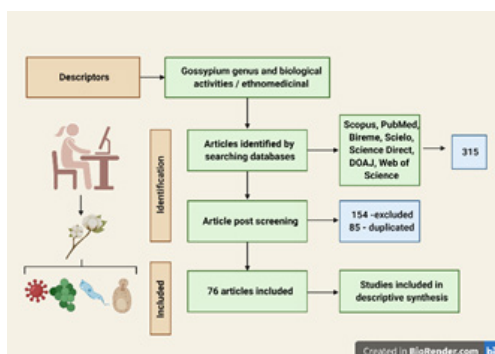
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Statement of the Problem: The Malvaceae family, an important group of plants that have the *Gossypium* (cotton) genus has been used in folk medicine to treat microbial diseases and symptoms. Ethnobotanical studies of the Malvaceae family have been published, including studies of species only of the genus *Gossypium* to demonstrate its medicinal use. We conducted this research to respond to this guiding question “Is the *Gossypium* genus used for the treatment of signs and symptoms of infections caused by microorganisms?”. This article aims to understand its ethnobotany expression in communities and scientific elucidation of antimicrobial activities of this genus through literature review.

Methodology & Theoretical Orientation: The bibliographic survey was carried out from 1999 to 2019 with keywords combinations such as "Gossypium + ethnobotanical", "Gossypium + medicinal", "Gossypium + the biological activity" in scientific databases as Pubmed, Scopus, Web of Science, DOAJ, Scielo, Bireme.

Findings: After data analysis, we found that the *Gossypium* genus, specifically *Gossypium hirsutum*, *G. barbadense*, *G. herbaceum*, *G. arboreum* are the species most cited in the treatment of microbial diseases and symptoms in communities all over the world. In light of scientific elucidation of biological activities, the *Gossypium* genus has been used to treat protozoal, bacterial, fungal, and viral diseases.

Conclusion & Significance: In consideration of biological activities, the *Gossypium* genus has been used to treat bacterial, fungal, and viral diseases with major expression in treating protozoal diseases like malaria. The most cited species in this session was the *Gossypium barbadense*, which is used for viral, bacterial, fungal, and protozoal infections. *Gossypium hirsutum* is used for fungal, bacterial, and protozoal infections. *Gossypium herbaceum* and *G. arboreum* are used for protozoal infections.



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Home Remedies & Medicinal Food

Caroline Karkour

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A large proportion of the general public has come to rely on these simple measures for part of their primary healthcare. In developing countries access to medicine is scarce and expensive forcing the majority to depend on natural remedies which have been handed down through generations. However even in developed societies skepticism towards medicine is on the rise and more and more people are favoring herbal home remedies believing they are free of undesirable side effects.(1) In fact, about 8% of hospital admissions in the United States of America are due to adverse or side effects of synthetic drugs. (2) In Germany a public opinion poll showed that 50% of the population uses herbal remedies, and one study indicated that patients want to be informed on the use of home remedies by their primary physicians as well. (2,3) A cross-national study across 14 European countries on self-care for common colds revealed that participants used 9 times more non-pharmaceutical items than pharmaceutical items. (4)

“Nature heals under the auspices of medical profession”

Paracelsus- Swiss Physician

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Immediately available Prophylaxis against emerging respiratory Viral Infections

Amos Chungwon Lee

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Statement of the Problem: In addition to SARS-CoV-2, its variants, and more emerging viral infections to come, prophylaxis methods must be immediately available to prevent devastations that we are currently seeing throughout the world. The heterogeneous clinical phenotype following COVID-19 and other respiratory viral infections varies widely, but many patients become critically ill and die. Despite laudable progress in treating respiratory viruses that has been accelerated by COVID-19, shortages of beds, equipment, drugs, human resources, and specific vaccines will still and, unfortunately, again contribute to poor patient outcomes when new viral pandemics emerge. We anticipate a need for safe, prophylactic therapeutic strategies that can prevent or blunt the initial progression of COVID-19 and future viral infections when existing improved therapies and vaccines may not provide complete, enduring, specific, and/or readily accessible protection.

Methodology & Theoretical Orientation: Herein, we propose testing prophylactic nasopharyngeal administration of type I interferon (IFN-I) for individuals at higher risk to COVID-19 and other respiratory viral infections. IFN-Is (IFN- α and IFN- β) are critical components of innate immunity and the initial cytokines produced by cells during viral infection.

Conclusion & Significance: It is reasonable to forecast that new respiratory infectious diseases will come in the future and, accordingly, developing antiviral prophylaxis strategies now would be prudent and immediately position a more favorable course of action while new specific vaccines and better therapies are being developed. Based on the COVID-19 experience, protecting first-line health care workers against a new respiratory virus would be paramount and well advised.

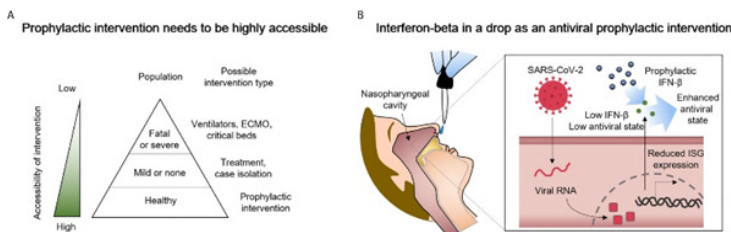


Figure 1 Delivery of type I interferon-beta (IFN- β) to the nasopharyngeal cavity is a candidate prophylactic and early intervention measure against COVID-19 that has high potential for success. (A) A greater accessibility of the intervention can prevent shortages of ventilators, extracorporeal membrane oxygenation (ECMO) machines, and/or critical care beds. (B) Suggested in this perspective is the highly accessible delivery of IFN- β to the nasopharyngeal cavity. The administered IFN- β can partially compensate for reduced interferon-stimulated gene (ISG) expression in SARS-CoV-2-infected cells as way to enhance antiviral immunity

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