13th International Conference on

Allergy, Immunology & Rheumatology

September 30, 2021

Scientific Tracks & Abstracts

35 YEARS OF EXCELLENCE IN MEDICAL PUBLISHING

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

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.

christian.aguilera-sandoval@bd.com

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

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 Poplitial 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/-.

jalpasuthar.ph@charusat.ac.in

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).

Edward.Okonjo@tukenya.c.ke