International Conference on

Infectious Diseases, Diagnostic Microbiology & Dermatologists Summit on Skin Infections

October 03-05, 2016 Vancouver, Canada

Keynote Forum

(Day 1)

Ananda M Chakrabarty, J Infect Dis Ther 2016, 4:7(Suppl)
http://dx.doi.org/10.4172/2332-0877.C1.016

Ananda M Chakrabarty

University of Illinois College of Medicine, USA

Proteins and peptides from pathogenic bacteria with anti-viral, anti-parasitic and anti-cancer activity

We have reported that some pathogenic bacteria with long term residence in the human body as biofilms consider the human body as their habitat and try to protect it from outside invaders such as cancers, viruses and parasites through secretion of protein weapons. For example, *Pseudomonas aeruginosa*, an opportunistic pathogen, secretes a protein azurin on contact with HIV/AIDS virus or cancer cells. Upon release, azurin enters preferentially to such cells and interferes in cell growth through multiple mechanisms involving complex formation with various cellular proteins that promote such cell growth. Such complex formation then leads to loss of function of such growth promoting proteins. Thus, azurin is known to induce apoptosis in cancer cells, as well as interfere in rapid cancer cell growth, through stabilization of tumor suppressor protein p53. Azurin also forms complexes with vascular endothelial growth factor receptor (VEGFR) and cell surface associated receptor tyrosine kinases such as EphB2 to inhibit angiogenesis and cell signaling in cancer cells to inhibit their growth. A chemically-synthesized 28 amino acid fragment (Azurin 50-77), termed p28, has completed a phase I trial in 15 stage IV cancer patients with metastatic tumors that were resistant to all conventional drugs and these patients had a life expectancy of about 6 months. P28 not only showed very little toxicity but also significant beneficial effects including partial and complete regression of the tumors in 3 patients, significantly prolonging their lives. P28 has also shown similar lack of toxicity but good efficacy in several pediatric brain tumor patients. The ability of p28 to inhibit the growth of the HIV/AIDS virus or parasites such as *Plasmodium falciparum or Toxoplasma gondii* has not yet been evaluated.

Biography

Ananda M Chakrabarty is a Distinguished University Professor at the University of Illinois, College of Medicine at Chicago. His research interest involves development of promiscuous bacterial protein/peptide drugs with anticancer, anti-viral and anti-parasitic activities. He is the Co-Founder of two start-up companies, CDG Therapeutics Inc. in Chicago and Amrita Therapeutics in India.

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Madalene C Y Heng, J Infect Dis Ther 2016, 4:7(Suppl)
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Madalene C Y Heng

David Geffen School of Medicine at UCLA, USA

Acne and rosacea: Update on pathophysiology and treatment

Understanding the pathophysiology of acne and rosacea is the basis not only for successful treatment but also for prevention of recurrent disease. Acneiform lesions are due to blocked follicles (follicular plugging). This results in failure of drainage of sebum to the skin surface and promotes accumulation of bacteria (*P. acnes*) and yeasts (*Pityosporum ovale*). The resultant neutrophilic chemotaxis promotes the formation of microabscess, cysts and scarring. The follicular plugging is also aggravated by sebaceous hyperplasia. In rosacea, cytokine-induced photosensitivity predominates with accompanying sebaceous hyperplasia aggravating follicular plugging and pustule formation. Successful treatment of both diseases includes a regimen aimed at unplugging the plugged follicles, control of pustule and abscess formation and resolution of acneiform scarring and shrinkage of sebaceous hyperplasia.

Biography

Madalene C Y Heng is a Clinical Professor of Medicine, Dermatology at the David Geffen UCLA School of Medicine. From 1979 to 2003, she was a Chief, Division of Dermatology, UCLA San Fernando Valley Medicine Program. She is currently in private practice in Heng Medical at Camarillo, CA and is a Reviewer for the *Journal of the American Academy of Dermatology, American Journal of Geriatric Medicine, British Journal of Dermatology, Lancet, London, and International Journal of Angiology.* She is the author of more than 140 scientific publications, including 78 published peer-reviewed articles on topics such as phosphorylase kinase activity and psoriasis, pathophysiology of common skin diseases, and wound healing.

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Xi Yang, J Infect Dis Ther 2016, 4:7(Suppl)
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Xi Yang
University of Manitoba, Canada

Cross talk between innate and adaptive immunity in infection

Significant progress has been made in recent years on our understanding of the interaction of innate and adaptive immune responses in infectious diseases. Using a mouse model of chlamydial lung infections, we studied the role of natural killer cells (NK) and NK T cells (NKT) on the function of macrophages, dendritic cells (DC), and T cells host resistance against the infections. By gene knockout and antibody deletion techniques, we have shown significant changes of the phenotype and function of DC, T cells and macrophages in the mice with NK or NKT cell deficiency, particularly the subsets of these cells. More importantly, we demonstrate that the changes of phenotype, subset and function of these innate and adaptive immune cells correlate with the susceptibility and pathology to chlamydial infections. The data suggest the critical importance of the modulating effect of innate immune system on adaptive immunity in intracellular bacterial infections.

Biography

Xi Yang is a Canada Research Chair in Infection and Immunity. He is working as a Professor in the departments of Medical Microbiology and Immunology of University of Manitoba, Canada. He is also extending his duties as a Chair of Promotion and Tenure committee in the department of Immunology. The research program in his laboratory focuses on the cellular and molecular basis of immune responses to allergens and infectious agents and on the development of immunoprophylactic approaches for allergy and infectious diseases.

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Keynote Forum

(Day 2)

Aziz Ghahary, J Infect Dis Ther 2016, 4:7(Suppl)
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Aziz Ghahary
University of British Columbia, Canada

A new approach in preventing hypertrophic scarring/keloid

Wound healing outcome is regulated by a fine balance between deposition and degradation of extracellular matrix (ECM). Over healing formation such as keloid is mediated by exaggerated ECM deposition and abnormalities in ECM degradation. Current treatment modalities for prevention of keloid and hypertrophic scarring have limited efficacy, which raised a great need for innovation within wound care industry. Moving toward novel approaches to prevent these devastating conditions, we identified the anti-scarring properties of Kynurenic acid (KynA), a naturally occurring small molecule generated from tryptophan degradation. To slow down/prevent keloid and hypertrophic scar formation, we have delivered KynA within the wounds before and/or during epithelialization by using either topical application of KynA containing cream or KynA slow releasing dressing. The results showed a significant outcome improvement in a fibrotic rabbit ear model received this therapeutic agent. During the course of this talk, the challenges associated with dermal fibrosis will be presented, the reason for choosing KynA as a potent anti fibrogenic factor will be discussed, *in vitro* data on efficacy of KynA as an ECM modulating factor in favor of improving the wound healing outcome will be presented, the benefit of using KynA in a topical cream and slow releasing dressing on a fibrotic rabbit ear model will be shown, finally the safety result of KynA cream in a phase 1 clinical trial will be presented. At the end, the conclusion and the future direction of using KynA as a potent anti-fibrogenic factor for treatment of keloid and hypertrophic scarring will be presented.

Biography

Aziz Ghahary, PhD and Professor, is the Director of the BC Professional Firefighters 'Burn and Wound Healing Research Group and has published more than 168 peer-reviewed articles some of which directly related to autoimmune diseases such as type I diabetes. He has been awarded more than 50 research grants from different local, national and international granting agencies. He is the leading investigator in identifying a serum 14-3-3 eta protein as a biomarker for early detection of RA and psoriatic RA and this test has now been launched by the Quest Diagnosis and Lifelab in US and Canada, respectively. Finally, he recently identified a small molecular with anti-scaring properties, which has now been approved by the Health Canada and the Vancouver General Hospital Ethic Committee to proceed to Phase 1 Clinical Trial.

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