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Proceedings of

2nd International E-Conference on

CANCER SCIENCE AND THERAPY

August 23-24, 2021 I Webinar

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DAY 1

KEYNOTE SPEAKERS

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Concurrent expression of *erb*B receptor proteins in human meningiomas

Human meningiomas are common intracranial tumours that despite benign histology, are prone to recur. Today the diagnosis of these tumours is based on interpretation of subjective histological criteria given by WHO rendering the possibility of considerable interobserver variation and sampling bias. Thus, there is need for more objective biomarkers that can stratify meningioma patients with regard to risk of recurrence. *Erb*B receptors constitute the EGFR (epidermal growth factor receptor) family consisting of four members that all have been shown to be involveld in the tumourgenesis of various human tumours, including meningiomas. We have recently published studies on the expression of each of these receptors in these tumours (1-3). On the other hand, the clinicopathological significance of their mutual expression is scarcely described. We therefore decided to summarize our data and look into this issue. 185 benign and atypical meningiomas (graded according to WHO 2016) underwent immunohistochemical analyses for expression of c-*erb*B1/EGFR, c-*erb*B2/HER2, c-*erb*B3/HER3 and c-*erb*B4/HER4. There was high co-expression of all these receptor proteins in the meningioma tissue. Most c-*erb*B1/EGFRs were phosphorylated in contrast to about 10 % of c-*erb*B2/HER2 receptors. Phosphorylation of c-*erb*B1/EGFR was associated with tumour grade, and phosphorylation of c-*erb*B2/HER2 was associated with prognosis in multivariate analyses. In conclusion, members of the EGFR receptor family are abundantly co-expressed in human meningiomas, and that may be of value in various clinicopathological settings.

Keywords: brain tumour, meningioma, *erb*B, EGFR, HER, diagnosis, prognosis, grading, histopathology, immunohistochemistry, growth factor receptor.

Biography:

Professor (in medicine (pathology)), Dept of Clinical and Molecular Medicine, NTNU. Consultant Neuropathologist at Department of Pathology and Medical Genetics, St. Olavs Hospital, Trondheim University Hospital.

Dr. Vineet Datta

Datar Cancer Genetics New Delhi, India

Targeted Precision Therapy: The Evolving World of Genomics

The global socio-economic impact of cancers is profound. Worldwide, an estimated 19.3 million new cancer cases and almost 10.0 million cancer deaths occurred in 2020. There is increasing evidence that intra-tumor heterogeneity contributes to treatment failure and drug resistance. Multiple or serial biopsies are impractical for multiple reasons including but not limited to discomfort, health risks, and economic considerations. The clinical relevance and utility of molecular biomarker based tools are evident by their contribution to diagnosis, therapy selection and management and serial monitoring. Response of an individual to therapy may be evaluated on the basis of efficacy and safety.

The liquid biopsy solution can help in optimum therapy selection, acquired resistance detection, real-time molecular profiling of cancer. In patients with unavailability of tumor tissue for molecular profiling, liquid biopsy can provide the molecular footprints of cancer from blood. Current knowledge of genetic and metabolic signatures associated with the individual and the disease have led to significant advances in the concept of personalised therapy, and future advances in identification of biomarkers are expected to contribute positively. Limited evidence exists on treatment strategies for relapsed / refractory cancers based on comprehensive, multi- analyte molecular analysis with synchronous in vitro chemo-sensitivity profiling, in a label-agnostic manner. Treatment strategies for patients with such cancers can be based on an integrative, multi- analyte Encyclopedic Tumor Analysis (ETA) which captures in depth information about the multi-layered tumor interactome.

Keywords: refractory cancer, Tumor analysis, targeted therapy, Tumor chemosensitivity, Encyclopaedic Tumor analysis

Biography:

Dr. Vineet Datta brings over 20 years of global healthcare experience across clinical patient care, medical assistance, strategic leadership and healthcare consulting. He is a post-graduate in Internal Medicine from JN Medical College, AMU, India, and has held various leadership positions across the NHS, International SOS and Apollo Hospitals. He was awarded Diplomas for Membership to the Royal College of Physicians, United Kingdom (MRCP-UK) and the Royal College of Emergency Medicine (MRCEM), London. Vineet is an elected Fellow the Royal College of Physicians and Surgeons, Glasgow, and possesses the Advanced Pre-hospital Emergency Care Certification from the Royal College of Surgeons, Edinburgh. He currently also serves as the International Advisor to the Royal College of Physicians and Surgeons of Glasgow, in additional to his professional responsibilities.

Sophia N. Karagiannis

King's College London, UK

IgE Immunotherapy and mechanisms of activating the tumour microenvironment

In several models and functional studies interrogating specimens from patients with solid tumours, we report that anti-tumour IgE class antibodies can restrict cancer growth by immune effector mechanisms known to be employed by this antibody class against parasites. Recombinant IgE antibodies focused against tumour-associated antigens potentiated activation of monocytes and recruitment of stimulated macrophages into the tumour microenvironment and promoted a proinflammatory macrophage phenotype. In this talk I will discuss the pre-clinical development of a first-in-class IgE and the mechanisms by which IgE can reconfigure the tumour microenvironment and activate previously-untapped immune mechanisms against tumours.

Biography:

Sophia Karagiannis heads a cancer antibody discovery team focused on designing novel agents for skin, ovarian and breast cancers and striving to understand the cross-talk between patient immune cells and cancer. Major research streams in the Karagiannis laboratory include: a) dissecting B cell and antibody responses and understanding how these are modulated by the tumour microenvironment; b) interrogating the humoral response to discover potential biomarkers for stratification and to inform patient-focused treatments; c) designing Fc-modified antibodies with enhanced effector functions; d) elucidating the mechanisms of action of antibodies engineered with modified Fc regions and of different isotypes, namely IgG1, IgG4 and IgE, in disease-relevant models. Her group are the first to design and translate an IgE class antibody recognizing a cancer antigen to a Phase I clinical trial in patients with solid tumours.

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Molecular Genetic Markers and Relapse of Ovarian Cancer After Platinum-Based Chemotherapy

T.M. Zavarykina[1], S.V. Khokhlova[2], A.C. Tyulyandina[3], G.N. Khabas[2], A.V. Asaturova[2], Yu.A. Nosova[2], P.K. Brenner[1], M.A. Kapralova[1], D.S. Khodyrev[4], M.B. Stenina[3]

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The most important aim of the modern clinical oncology is the personalized treatment of cancer patients. The key drugs used in chemotherapy of ovarian cancer are platinum derivatives, so it makes relevant to search for sensitivity markers to this group of drugs. We investigated the association of polymorphic markers of DNA repair genes *XRCC1, ERCC2, XPG (ERCC5)*, the cell cycle regulation genes *TP53, MDM2, CDKN1A*, gene of transport protein ABCB1, frequent mutations of *BRCA1* gene, and methylation of four genes *(BRCA1, RASSF1A, DAPK1, GSTP1)*. We evaluated the median progression-free survival time (PFS) and the risk of relapse for all studied markers. PFS is a surrogate clinical marker of sensitivity of ovarian cancer to platinum drugs. The most important results were obtained for marker Gln399Arg of XRCC1 (p=0.025) during the follow-up period up to 19 months from the end of chemotherapy, mutation 5382insC (p=0.035) and inactivation of BRCA1 gene function by promoter methylation or the presence of the C/C genotype (p=0.033). Trends to significance were observed for markers *Arg72Pro* of *TP53, Ser31Arg* of *CDKN1A, T(-410)G* of *MDM2*, promotor methylation of *BRCA1, RASSF1A, GSTP1*, and for methylation of at least one of the four studied genes *(BRCA1, RASSF1A, DAPK1 и GSTP1)*. When a group was divided according to the type of surgery, a statistically significant associations with PFS for markers of genes *CDKN1A (p=0.01), TP53 (p=0.04), BRCA1 (p≤0.04)* were detected in subgroup with the complete and optimal debulking. Using multivariate data analysis, a model of risk of relapse during the follow-up period up to 19 months from the end of chemotherapy was obtained.

Keywords: Ovarian cancer, polymorphic marker, DNA methylation, progression-free survival, platinum-based chemotherapy

Biography:

Tatiana Zavarykina works in the Emanuel Institute of Biochemical Physics of Russian Academy of Science since 2002. In 2008 defended a Ph.D. thesis. From 2010 works in the molecular oncology field. From 2015 works on the project dedicated to the search for markers of sensitivity to platinum-based chemotherapyof ovarian cancer.

HPV Genetypes Detection in the Saliva Samples of HIV Sero-Positive Patients

Dr. Swapna Amod Patankar
Bharati Vidyapeeth University, India

Aim: To detect presence of HPV genotypes in the saliva samples of HIV sero-positive patients.

Objectives:

1. To detect presence HPV genotypes in the saliva samples of HIV sero-positive patients.
2. To detect presence of any oral lesions or oral cancers in the oral cavity of these HIV sero- positive patients.
3. To evaluate if there is any co-relation between the HPV genotypes if present & oral lesions or oral cancers is present in the oral cavity.

Introduction: Human papilloma virus (HPV) is a small circular double stranded DNA virus which has been implicated in a variety of benign and malignant neoplasias in human oral and anogenital regions. About 100 different HPV genotypes have been identified and classified as either low-risk or high-risk oncogenic types, based on their ability to induce neoplasia in host epithelial cells. Most prevalent high-risk types are HPV 16 and 18, which have been detected in the majority of malignant lesions worldwide. Low-risk types such as HPV 6 and 11 are most often associated with benign lesions. Several epidemiological and molecular studies have suggested a significant link between high-risk HPV types (mainly 16 and 18) and oral cancer Recent evidence has indicated that HPV-related pathology is increased in the oral cavity of human immunodeficiency virus (HIV)-positive individuals. HPV types are known to be seen more in HIV-positive patients, as they are immune-deficient. HPV in saliva of HIV-positive individuals may be associated with high risk for development of HPV-related oral lesions, including malignancy.

Methods: To detect the presence of HPV in HIV–positive patients, 30 saliva samples of Sex-workers from red-light street areas in Pune were collected & DNA sequences carried out by polymerase chain reaction (PCR).

Results: The results obtained were negative for HPV in the 30 saliva samples. Thus, indicating that more sample size should be considered for detection of HPV in HIV sero- positive patients for detection of HPV in saliva samples.

Conclusion: This is a non-invasive & prognostic type of study, the results of which will defiantly help in screening, early detection & prevention of HPV related oral cancers in immune-compromised HIV patients by using saliva samples.

Keywords: Saliva, Human Papilloma Virus, HPV 16, 18, 6 & 11, HIV sero-positive, Oral Cancers, PCR

Biography:

DR. SWAPNA AMOD PATANKAR, is an Assistant Professor (MDS) in the Department of Oral & Maxillofacial Pathology & Oral Microbiology at Bharati Vidyapeeth (Deemed to be University) Dental College & Hospital, Pune, India. She is currently pursuing Ph.D. in the Faculty of Dentistry. She has an Academic Teaching Experience of 20 years 6 months. She is a certified instructors of American Heart Association for BASIC LIFE SUPPORT (BLS) AND ADVANCED CARDIAC LIFE SUPPORT (ACLS) & till date trained 374 participants. She has carried out numerous Research Projects & has extensive research work on the HIV sero-positive individuals. She has numerous National & International publications to her credit & has also published 2 International Books. She has been invited as GUEST SPEAKER to 06 National Conferences & 03 International Conferences. She has presented 04 YouTube Webinars. She has presented Papers & Posters at National & International Conferences & has won 3rd Prize for Best Scientific Paper Presentation at International Conference on Forensic Odontology (IASR) 2021.

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Extracellular Vesicles are Harbingers of Good Health and Disease: Tumor-Derived Exosomes are Determinants for Organotropic Metastasis

Stephene Shadrack Meena[1], Benson Kiprono Kosgei[1], Kok Suen Cheng [2], Cheng Tingjun [1], Cao Qianan[1], Binglin Li,[1] Zhao Zhe [1], Li Tong[1], Tao Tiamen[1], Pan Rongbin[1] and Ray P.S. Han[1,2]

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Exosomes are nano-sized (30-150 nm) extracellular vesicles with lipid-bilayer membrane. They are secreted by all life forms varying from the simplest cells like prokaryotes to the complex cells like eukaryotes to facilitate intercellular communication. Multicellular organisms are made up of billions of cells that crosstalk and collectively work together to perform critical activities required for survival benefits. For instance, the ability of infected cells to signal nearby and distant cells about the danger of an invading pathogen is very important for survival. Furthermore, exosomes mediate inter-kingdom communication. For instance, a bacteria cell can communicate with its host (plant or animal cell) through exosomes secretion. The inter-kingdom communication is fundamental in evolution as well as facilitating a symbiotic relationship. On contrary, exosomes have been also demonstrated to escalate pathogenesis of various diseases including communicable and non-communicable diseases. For instance, exosomes secreted by bacteria carry biochemical cargo that downregulate it's host immune cells. Similarly, exosomes secreted by malignant cells promotes tumor invasion, progression, survival and metastasis. Thus, the biochemical molecules shuttled by exosomes from donor cells induces functional and structural changes of recipient cells both at physiological and pathological state. Cancer is a syndrome characterized with uncontrolled growth of abnormal cells capable to invade and spread to distant organs. The spread of cancer is not random, as different types of cancer have common sites of spread. For instance, breast cancer spread to the liver, lungs, brain and bones whereas prostate cancer preferentially disseminate to the bones. Tumor derived exosomes (TDEs), are abnormal exosomes secreted by cancer cells that mediate the exchange of oncogenic proteins and nucleic acids. TDEs expresses distinct integrins on their surface necessary for cargo targeting. Through unique integrins expression, TDEs facilitate specific-intercellular communication that program recipient cells and remodeling distant tumor microenvironment (TME) in favor of organotropic metastasis. In order to understand the mediation of exosomes in various pathophysiology process involved in healthy and ailment state, we have decided to conduct a preliminary study of exosomes secreted by healthy cells (normal), malignant cells (abnormal) and bacteria (pathological). Since about 90% of cancer related mortality are due to metastasis, therefore it is very important to understand the role played by TDEs in cancer progression and finding the novel strategy for their elimination. Therefore, in this study we harvested exosomes sourced from different cell types to better understand and assess the expected high degree of specificity with regard to their morphology and biochemical configuration. However, the focus is directed towards understanding role of TDEs in different steps of cancer pathogenesis and spread.

Biography:

Stephen Shadrack Meena is a Clinical Oncologist at Ocean Road Cancer Institute (ORCI), Tanzania. He graduated with both of his Doctor of Medicine Degree (MD) and Masters of Medicine Degree (MMed) at Muhimbili University of Health and Allied Sciences (MUHAS) in 2008 and 2015 respectively. Currently, he is doing his Ph.D. program in cancer research at Jiangxi University of Integrated Chinese & Western Medicine (China). His previous work experience includes a one-year internship program, general practitioner (GP) for 3 years, and Study Physician at MUHAS/Harvard research project for one year. He is an African cancer fellow awarded by Union for International Cancer Control (UICC), 2018.

Precision epigenetic targeted combination therapies for Triple Negative Breast Cancer subtypes

Nandini Verma
Cancer Research Institute (CRI)
Advanced Centre for Treatment, Research and Education in Cancer (ACTREC) TATA Memorial Center (TMC), Navi Mumbai, India

Triple negative breast cancer (TNBC) is the most aggressive and heterogeneous subset of breast malignancy with worst clinical outcome. Due to lack of targetable cellular receptors for estrogen (ER), progesterone (PR) and human epithelial growth factor receptor-2 (HER2), the treatment of TNBC patients is very challenging. Clinical management for TNBC mainly relies on chemotherapeutic agents. Unfortunately, the response rate to chemotherapy is very variable in TNBC patients with high reported incidents of drug resistance. One of the urgent needs in TNBC research is to identify novel molecular targets that can work specifically and effectively to eliminate tumor cells and can also address disease heterogeneity. In this direction we developed an innovative targeted drug screen to discover combinations of molecular targets that produce syntetic-lethal effects in TNBC cells. Highly active molecular oncotargets were selected with available small molecular inhibitors and combined in dosages below one-fifth concentrations of their individual IC50 values in a panel of 12 TNBC cell lines representing different molecular subtypes. The screen results identified several general and subtype specific synthetic-lethal drug combinations that were clinically relavent, among those co-inhibition of epigenetic regulator bromodomain and extra- terminal (BET) proteins showed promissing effects accross different subtypes. BET inhibitors OTX015 and JQ1 with proteasomes inhibitor bortezomib effectively induced iron-dependent ferroptotic cell death in most TNBC subtypes in in-vitro, in-vivo and in patient-derived 3D organoids by suppressing antioxidant GPX4 protein. Further, we found that co-inhibition of BET with Interlukin-8 receptor CXCR2 specifically induced appoptotic cell death in mesenchymal-stem like TNBC subtypes in-vitro, and in mice xenografts. These results identified novel subtype specific vulnerabilities of TNBC that can be exploited for designing promising precision medicine using epigenetic drugs.

Keywords: TNBC, synthetic-lethal, targeted therapy, BET inhibitors, ferroptosis, precision medicine

Biography:

Dr. Nandini Verma joined as a principal investigator at ACREC, TMC, after completing her post-doctoral training at the Moross Integrated Cancer Center (MICC), Department of Cell and Molecular Biology at the Weizmann Institute of Science, Israel. Dr. Verma earned her Ph.D. from Institute of Genomics and Integrated Biology (IGIB), New-Delhi, where she mostly worked on innate immune regulatory cellular signaling. During her post-doctoral research Dr.Verma discovered important cellular regulators of EGFR signaling in TNBC cells and mechanism of drug resistance in anti-EGFR targeted therapies. Her recent research work has uncovered novel subtype specific combination therapies for TNBC treatment.

Multi-class Brain Tumor Segmentation via 3D and 2D neural networks

Sergey Pnev, Bair Tuchinov
Novosibirsk state university Stream Data Analytics and Machine Learning Laboratory Novosibirsk, Russia

Brain tumor segmentation is an important and time-consuming part of diagnosis. Multi-class segmentation of different tumor types is a challenging task because of differences in shape, size, location, and distinctions in scanner parameters. It is known that even an experienced radiologist can make a mistake in 10-15% of cases.

Many 2D and 3D convolutional neural network architectures have been proposed to solve this problem, and they have achieved significant success. The 2D approach is known to be faster and there are many more datasets with 2D data. In contrast, 3D models. Using computationally-costly 3D operations allows the model to account for context along the z-axis and learn 3-dimensional features. This simultaneously improves the quality of segmentation, increases the learning time, and decreases the speed of operation. In this paper, we decided to compare 2D and 3D approaches on 2 datasets with MRI images: from the BraTS2020 competition and our private Sibrerian Brain Tumor Image Segmentation dataset.

In each dataset, the image is represented as 4 sequences T1, T1C, T2, T2-FLAIR, and a specialist-labeled mask. The data differ in dimensionality, class set, and tumor type. Comparisons were made based on the Dice Index. We performed an analysis of which cases and why they caused difficulties for the models. Final improvements on the test part of both datasets are in the range of 3–5% on the five-fold trained model according to the Dice metric. The results suggest interesting conclusions and will allow us to get a little closer to making a diagnosis with AI.

Keywords: Medical imaging, Deep learning, Segmentation, Brain, MRI.

Biography:

Graduated from the Faculty of Mechanics and Mathematics, NSU, majoring in Applied Mathematics and Computer Science in 2020. Did bachelor thesis on Unet modifications for solving the problem of acute stroke segmentation. He is currently enrolled in the master's program Big Data Analytics and AI at NSU MMF. Also working on solving brain tumor segmentation problems in the Laboratory of Streaming Data Analysis and Machine Learning at NSU.

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Enhanced immunosuppressive effects of 3,5-bis[4 (diethoxymethyl) benzylidene]-1-methyl-piperidin- 4-one, an α, β-unsaturated carbonyl-based compound as PLGA-b-PEG nanoparticles

Laiba Arshad[1] Ibrahim Jantan[2] Syed Nasir Abbas Bukhari[3]

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[3]Department of Pharmaceutical Chemistry, College of Pharmacy, Al Jouf University, Aljouf, Sakaka, Saudi Arabia

3,5-Bis[4-(diethoxymethyl)benzylidene]-1-methyl-piperidin-4-one (BBP), a novel synthetic curcumin analogue has been revealed to possess strong in vitro and in vivo immunosuppressive effects. The aim of present study was to prepare and characterize BBP-encapsulated polylactic-co-glycolic acid-block-polyethylene glycol (PLGA-b-PEG) nanoparticles and to evaluate its in vivo efficacy against innate and adaptive immune responses. Male BALB/c mice were orally administered with BBP alone and BBP- encapsulated nanoparticles equivalent to 5, 10 and 20 mg/kg of BBP in distilled water for a period of 14 days. The immunomodulatory potential was appraised by determining its effects of non-specific and specific immune parameters. The results showed that BBP was successfully encapsulated in PLGA-b-PEG polymer with 154.3 nm size and high encapsulation efficiency (79%) while providing a sustained release for 48 hours. BBP nanoparticles showed significant enhanced dose-dependent reduction on the migration of neutrophils, Mac-1 expression, phagocytic activity, reactive oxygen species (ROS) production, serum levels of ceruloplasmin and lysozyme, immunoglobulins and myeloperoxidase (MPO) plasma levels when compared to unencapsulated BBP. Enhanced dose-dependent inhibition was also observed on lymphocyte proliferation along with the downregulation of effector cells expression and release of cytokines, and reduction in rat paw oedema in BBP nanoparticles treated mice. At higher doses the suppressive effects of the BBP nanoparticles on various cellular and humoral parameters of immune responses were comparable to that of cyclosporine-A at 20 mg/kg. These findings suggest that the immunosuppressive effects of BBP were enhanced as PLGA-b-PEG nanoparticles.

Keywords: Immunosuppressive, PLGA-PEG polymer, Immunomodulatory

Biography:

Dr. Laiba Arshad is currently working as Assistant Professor Pharmacology, Department of Pharmacy. She completed her PhD from National University of Malaysia. She has been participating in various national and international conferences and research seminars as well as served as International Conference organizer in her professional career. Also serving as Editorial board member and Reviewer of several Peer reviewed journals; published several research/review papers in peer-reviewed indexed journals. She is actively involved in natural product research and in the field of immunology.

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Comparing Trastuzumab-Related Cardiotoxicity Between Elderly and Younger Patients with Breast Cancer: A Prospective Cohort Study

Afrah Aladwani,[1] Alexander Mullen,[1] Mohammad Alrashidi,[2] Omamah Alfarisi,[3] Faisal Alterkit,[4] Abdulwahab Aladwani,[5] Asit Kumar,[5] Emad Eldosouky[5]

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Introduction: Trastuzumab is a HER-2 targeted humanized monoclonal antibody that significantly improves the therapeutic outcomes of metastatic and non-metastatic breast cancer. However, it is associated with increased risk of cardiotoxicity that ranges from mild decline in the cardiac ejection fraction to permanent cardiomyopathy. Concerns have been raised in treating eligible older patients. This study compares trastuzumab outcomes between two age cohorts in the Kuwait Cancer Control Centre (KCCC).

Methods: In a prospective comparative observational study, 93 HER-2 positive breast cancer patients undergoing different chemotherapy protocols + trastuzumab were included and divided into two cohorts based on their age (<60 and ≥60 years old). The baseline left ventricular ejection fraction (LVEF) was assessed and monitored every three months during trastuzumab treatment. Event of cardiotoxicity was defined as ≥10% decline in the LVEF from the baseline. The lower accepted normal limit of the LVEF was 50%.

Results: The median baseline LVEF was 65% in both age cohorts (IQR 8% and 9% for older and younger patients respectively). Whereas, the median LVEF post-trastuzumab treatment was 51% and 55% in older and younger patients respectively (IQR 8%; p-value = 0.22), despite the fact that older patients had significantly lower exposure to anthracyclines compared to younger patients (60% and 84.1% respectively; p-value <0.001). 86.7% and 55.6% of older and younger patients, respectively, developed ≥10% decline in their LVEF from the baseline. Among those, only 29% of older and 27% of younger patients reached a LVEF value below 50% (p-value = 0.88). Statistically, age was the only factor that significantly correlated with trastuzumab induced cardiotoxicity (OR 4; p-value <0.012), but it did not increase the requirement for permanent discontinuation of treatment. A baseline LVEF value below 60% contributed to developing a post-treatment value below normal ranges (<50%).

Conclusion: Breast cancer patients aged 60 years and above in Kuwait were at 4-fold higher risk of developing ≥10% decline in their LVEF from the baseline than younger patients during trastuzumab treatment. Surprisingly, previous exposure to anthracyclines and multiple comorbidities were not associated with significant increased risk of cardiotoxicity.

Keywords: Trastuzumab, cardiotoxicity, breast cancer, chemotherapy, age

Biography:

Afrah is a registered pharmacist and a PhD candidate who obtained an MSc in Clinical Pharmacy from the University of Strathclyde. Afrah was involved in several clinical studies and conferences in the field of oncology. Afrah earned the “Young Researcher Clinical Science Award” at the 24th Health Sciences Center Poster Conference 2019, Kuwait.

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A Preliminary study on lung cancer incidence among patients with tuberculosis in Lesotho

Mopa Alina Sooro[1], Thibello Malikelle[1], Refiloe Leteka[1], Lejeremane Kobo[1], Maseabata Ramathebane[1]

[1]National University of Lesotho, Lesotho

Background: Lesotho has been ranked among the top 30 high TB burden countries; however the prevalence of lung cancer in Lesotho has been ranked fifth among the top 5 cancers in men. This seemingly lower prevalence of lung cancer could be masked by the fact that there are a number of cancer cases among TB patients that remains undiagnosed.

Methods : A cross-sectional study was done at the 3 TB centers; Queen Elizabeth II hospital, St. Joseph's Hospital and Senkatana clinic to investigate the prevalence of lung cancer among patients with TB. Questionnaires, where socio-demographic data was gathered, including smoking history, occupation, method of cooking in their homes were used. The clinical characteristics that patients presented with were also recorded.

Results: Among patients who were aged 55 and above, 7 (6.5%) patients had smoking history of more than 30 pack-years. These patients also had family history of lung disease and had worked in the mines or factory in the past. The 7 patients also presented with more than 90% of the clinical symptoms under investigation. Conclusion: It is recommended that Lesotho patients with active TB infection, greater or equal to 55 years of age with a smoking history of greater or equal to 30 pack years to be assessed with computed tomography (CT) for underlying malignancy prior to beginning tuberculosis treatment, even in the presence of a clinical or microbiologic diagnosis of tuberculosis.

Keywords: Tuberculosis, Lung cancer, Computed tomography scan

Biography:

Mopa A. Sooro is currently a lecturer at National University of Lesotho, teaching pharmacology and therapeutics. She is a graduate of the China Pharmaceutical University, Nanjing, China, where she researched on new cancer therapeutic strategies, involving the process of autophagy. She is also actively involved in cancer research in the country of Lesotho. There is currently (as of June 2021) no cancer treatment center in Lesotho, but in June 2020, Briston Myers Squibb (BMS) sponsored the start of the center in Lesotho and Ms, Sooro is in the team to make that happen.

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VIDEO PRESENTATION

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The expression intensity of IL-21 in T cells shows reverse correlation with lymph node metastasis and cancer stage in breast cancer

Sima Balouchi-Anaraki[1], Sara Mohammadsadeghi[1], Marzieh Norouzian[1], Atri Ghods[1], Reza Rasolmali[2], Abdol-Rasoul Talei[3], Fereshteh Mehdipour[1], Abbas Ghaderi[1,4]

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As a pleiotropic cytokine, Interleukin-21 (IL-21) can exert various anti-tumor and pro-tumorigenic effects through binding to its receptor (IL21 receptor or IL21R). This cytokine plays an important role in the interconnection between T and B cells in the tumor-draining lymph nodes (TDLNs). As it has been shown that the immune profile of the TDLNs is influenced by the tumor, herein, we investigated the changes in the expression of IL21 and its receptor respectively on $CD4^+$ and $CD19^+$ lymphocytes in 45 breast TDLNs during cancer progression. To evaluate IL21 production in $CD4^+$ T cells, we shortly stimulated cells with PMA/Ionomycin, whereas unstimulated cells were used to assess IL21R expression on B cells. Results showed that the frequency of IL-21+$CD4^+$ T cells was 4.2±3.1%, without significant associations with disease parameters. However, the expression intensity of this cytokine was higher in patients with lower grades (I+II) compared with higher grade (grade III, P=0.042), and showed a reverse correlation with the number of involved LNs. Moreover, IL21 was more intense in the non-metastatic lymph nodes of patients with stage II than stage III (P=0.038). The frequency of $IL21R^+CD19^+$ cells was 41.2±20.4%, and showed association with higher grade (P=0.037). In conclusion, the more intense expression of IL-21 in $CD4^+$ T cells showed associations with good prognostic markers such as lower grades and stages as well as less involved lymph nodes. Therefore, it may play a positive role in immunity against breast cancer. However, the higher frequency of IL21R-expressing B cells had an association with a poor prognosticator. More investigation is required to understand the role of IL-21 in immunity against breast cancer.

Keywords: IL-21, IL-21R, Tumor-draining lymph node, Breast cancer

Biography:

Atri Ghods is a research assistant at Shiraz Institute for Cancer Research, where she works in a lab supervised by Prof. Abbas Ghaderi and Dr. Fereshteh Mehdipour. She was graduated from university with a master's degree in Medical Immunology. Her main research area is the characterization of adaptive immune responses formed in tumor-draining lymph nodes, and their changes during cancer progression. She has gained expertise in various cellular and molecular biology techniques, and as a young researcher, she is interested to expand her knowledge in different areas of tumor immunology.

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DAY 2

KEYNOTE SPEAKERS

Bikash Verma

MedTherapy Biotech., Boston USA

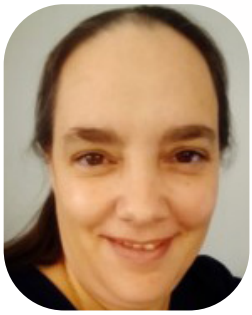
Innovations in CAR-T cell cancer gene therapy manufacturing to make CAR-T cell therapy affordable and accessible

The Significance: CAR-T cell gene therapy has been heralded as a “cure” for cancer. The prospects for CAR-T cell therapy technology are unprecedented- on one end lies its targeted specificity in killing cancer cells and, on the other hand its great potential to treat not only hematological malignancies but solid tumors and other diseases. However, CAR-T therapy is exorbitantly expensive – up to half a million dollars per patient. Hence, it is not affordable or accessible for most cancer patients in US or in developing countries. Since the autologous CAR-T cell therapy is a personalized therapy, it is manufactured for only one patient at a time. Hence, the manufacturing processes are protracted (four weeks), inefficient, complex, tedious, inconsistent, and cost- prohibitive. MedTherapy Biotech. was founded by cancer patients, advocates, scientists, and oncologists to make the CAR-T manufacturing processes more efficient leading to cost reductions and thus greater affordability of this therapy. Our innovations significantly innovate various steps throughout the CAR-T cell therapy manufacturing cycle in order to dramatically reduce the Cost of Goods & Services (COGS). Greater efficiency also lends itself to scale up of manufacturing capacity to address the current severe manufacturing shortage. Based upon our results, our innovative CAR-T cell manufacturing cycle will lead to at least 25% reduction in manufacturing time resulting in at least a 50% reduction in manufacturing costs. There is a substantial unmet need to innovate the CAR-T cell manufacturing processes by making them more efficient and less time- consuminrg, thus leading to cost-savings and greater affordability to accomplish our mission to make CAR-T cell gene therapy affordable and accessible globally.

Keywords: CAR-T cell therapy, cancer gene therapy

Biography:

Bikash Verma, MD, DVM, is Chief Executive Officer & Chief Medical Officer at MedTherapy working on immunotherapy of cancer. Dr. Verma’s focus has been upon prevention, diagnosis, and treatment of cancer. As a physician-scientist, he worked at Harvard Medical School as medical director and faculty. Subsequently, he worked in clinical research and development at Novartis, GSK, Celyad and Aurora as medical director and CMO. He is specialized in immunology, immuno- oncology and preventive medicine which he accomplished through his post-doctoral, doctoral, and masters degrees and fellowships completed at University of Massachusetts and affiliated hospitals, University of Illinois, S Illinois University, Tufts University.



Dr Daniela Capdepon

Campana Cancer Centre, Buenos Aires, Argentina

The role that Vitamin D has in Cancer Prevention

Everyone knows vitamin D as the vitamin important for bone health and for preventing rickets in children, but we are now recognizing that the major source of vitamin D is coming from the sun, so by definition vitamin D is really a hormone. Once you make vitamin D in your skin or ingest it from your diet, it goes to your liver, is converted to 25-hydroxy- vitamin D is known as calcidiol, and then to the kidneys to the active form, 1,25-dihydroxy-vitamin D, also known as calcitriol. We are now also recognizing that many cells in the body, separate from the kidneys, can activate vitamin D and there is mounting evidence that that function of vitamin D is to help regulate cellular growth. There are several studies that have related higher blood levels of 25-hydroxy-vitamin D and reduced risk of many deadly cancers including colon, breast, and prostate cancer to name a few. The study presented in this article and some other studies have concluded that there may or may not be any benefit. This is because it is still not clear if be nay range for calcidiol of 40-60 nanograms per milliliter recommended by the Endocrine Society has that additional health benefit of reducing the risk of many deadly cancers.However, I think the data does suggest that calcidiol helps reduce the risk of deadly cancers. Therefore, I encourage my family and patients to always be vigilant about their Vitamin D levels

Keywords: Vitamin D, Cancer, Calcidiol, Skin, Risk.

Biography:

Dr. Daniela Capdepon, received from Medica at 22 years old and graduated with Honors from the medical school. She completed her Specialty in Clinical Oncology at the Universidad del Salvador, Buenos Aires, Argentina. She became the Medical Director of the Campana Cancer Center at age 32. She has many presentations at international congresses as well as being part of the organizing committee of several international congresses. She also has more than 20 publications and has served as a member of the editorial board of renowned magazines.

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SPEAKER PRESENTATIONS

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Chemo brain and cancer. How cancer patients perform on neuropsychological functions?

Dr. Kalliopi Megari
Aristotle University of Thessaloniki; Thessaloniki, Greece

Chemo brain, (other terms used Post chemotherapy cognitive impairment (PCCI), cognitive dysfunction, or or chemo fog), is referred to a decrease in neuropsychological performance of neurocognitive measures after chemotherapy for the treatment of cancer. Chemotherapeutic drugs are cytotoxic affecting both normal and cancer cells and contribute to cognitive impairment observed in some individuals following chemotherapy treatment. We investigated the manifestation of cognitive impairment related to chemotherapy, before chemotherapy (T1), immediately after chemotherapy-1 day (T2) and 6 months later (T3), among 187 adult patients with different types of cancer (breast, colorectal, prostate and thyroid cancer). Cognitive functions were assessed, such as attention and working memory, visuospatial perception, executive functions, complex scanning and visual tracking, as well as short and long-term memory using a battery of neuropsychological tests. We had an assessment of emotions, such as anxiety, depression, positive and negative mood to investigate the emotional functioning of cancer patients. Results revealed a statistical significance in performance, immediately and 6 months post-chemotherapy (T3), although no statistically significant differences were found between the groups in any of the neuropsychological test, before chemotherapy. Patients showed lower performance immediately post-chemotherapy (T2) that remained stable 6 months post-chemotherapy (T3), compared to T2 in all cognitive domains ($p<0,001$). Patients with breast cancer showed significantly lower performance on all cognitive domains compared to other patients. In addition, all patients had a lower performance at T2, which means low emotional functioning with no statistical significant changes. At T3 all patients, had an increased performance with increased emotional functional 6 months post-chemotherapy. Cognitive change that can be detected with repeated testing is essential for an accurate interpretation of neuropsychological performance in studies with cancer patients.

Keywords: Brain, Neurocognitive functioning, brain functioning, Neurocognitive performance, cancer patients

Biography:

Dr. Kalliopi Megari is an experienced psychologist working in the hospital & health care industry. She is a lecturer at University of Western Macedonia in Greece. Skilled in Clinical Neuropsychology, Clinical Research and Learning Disabilities. Graduated from Aristotle University of Thessaloniki and attended further education from University of Macedonia, in people with special needs and disabilities. She holds undergraduate degrees in Nursing and Psychology, as well as a Master's and a PhD in Neuropsychology from Aristotle University of Thessaloniki. She has many years of experience working with chronic disease patients as well with people with disabilities. Her work has earned her many prestigious international awards. She has given lectures at Aristotle University of Thessaloniki and University of Warsaw. She is postdoctoral researcher and has published more than 10 research articles in journals. She is the Global Engagement Representative of International Neuropsychological Society, General Secretary of the booard of directors and member of the Ethics Committee of Hellenic Neuropsychological Society.

Infection and Malignancies

Dr. Sayan Bhattacharyya
AIIH&PH Kolkata, India

Many infections due to microorganisms lead to profound effect on the immune system and also lead to development of malignancies by various mechanisms. Infections can lead to ongoing inflammation and persistent irritation. Bacteria like Helicobacter pylori lead to Gastric mucosal irritation and growth factor mediated metaplasia and neoplasia. Viruses like human Papilloma virus can lead to warts and Carcinoma of Cervix in females and CA penis in male. Cirrhosis of liver after chronic hepatitis caused by Hepatitis B virus leads to fibroblast stimulation and Carcinoma of liver in many cases. Epstein Barr virus is also implicated in Nasopharyngeal Carcinoma. Mostly carcinoma occurs after infection by DNA viruses and microbial genes can be detected in tumours. However even HIV, an RNA virus leads to CNS lymphoma. Kaposi's sarcoma can occur after secondary infection by KSHV in HIV infected persons. Importantly, malignancies after viral infections can be prevented by vaccines. HPV vaccine and HBC vaccine are there for that purpose. Even parasites like Schistosoma spp. lead to bladder irritation, metaplasia and bladder cancer. Same irritation and inflammation by Clonorchis spp and Opisthorchis spp. can produce bile duct irritation and cholangiocarcinoma. Even fungi like Candida spp. have been implicated in tumours of oral cavity. These aspects of mutual interactions of infection and malignancies need to he explored more. Therapy addressing these infectious agents may be a promising approach for preventing or treating malignancies in early stages.

Keywords: Infection, malignancy, interlink.

Biography:

MBBS from Calcutta Medical College, MD Microbiology from PGIMER Chandigarh. Second prize winner in oral category in STMIDI Tropicon 2018. Now working as Associate Professor , Microbiology in All India Institute of Hygiene and Public Health, Kolkata, India. Dr Sayan has 71 peer reviewed publications in various medical journals. He is the editorial board member of various journals and chief editor of Eastern journal of Medical Sciences.

Burkitts Lymphoma with unusual Granulomatous Reaction

Dr. Leah Furahini Mnango
Muhimbili National Hospital, Tanzania

Burkitts lymphoma (BL) is an aggressive B-cell lymphoma that, in some instances, may show a granulomatous reaction associated with a favorable prognosis and occasional spontaneous regression. A 12-year-old male patient from Kigoma, Tanzania whose CT scan of the head showed features suggestive of BL in the right lower jaw region with mild right maxillary sinusitis. There is no evidence of cervical and mediastinal lymphadenopathy and no evidence of brain involvement. Surgical enucleation and curettage of the tumour was performed. In the present case study, we aimed to assess the distinct clinicopathological correlation between granulomatous reaction and prognosis in burkitts lymphoma. A review of a formalin-fixed paraffin embedded block of a jaw mass from a12-year-old patient from Kigoma who was diagnosed with BL in 2019 was retrieved from the department of the anatomical pathology at Muhimbili National Hospital during the first workshop to support the NIHR-RIGHT aggressive infection related East Africa Lymphoma (AI-REAL) In Dar es salaam Tanzania February 2020. Microscopy and immunohistochemistry results showed presence of diffuse infiltrate by BL cells in starry sky pattern with prominent granulomatous reaction, comprising of epithelioid histiocytes and fibroblasts surrounding Burkitt's lymphoma cells. Immunohistochemistry CD 10, CD 20, BCL6, CD 68 were positive with proliferative index by Ki67 >95%, and BCL2 were negative, this were consisted with BL. After 6 cycles of chemotherapy with Rituximab, Cyclophosphamide, Oncovin (Vincristine), Doxorubicin, Methotrexate (R-CODOX), the patient showed no residual disease and was discharged. After 16 months of follow-up the patient is asymptomatic. The case suggested that Burkitt's lymphoma with granulomatous reactions have favorable prognosis which is consistent with cases reviewed in other countries.

Keywords: Burkitt lymphoma; granulomatous reaction.

Biography:

Leah Mnango. MD, MMed Anatomical Pathology at Muhimbili National Hospital, Dar Es Salaam- Tanzania. Interested in Paediatric Pathology and Research. She had several publication and research work, currently she is on big project of Aggressive Infectious Related East Africa Lymphoma (AI-REAL) supported by NIHR-RIGHT involving Tanzania, Uganda and Oxford University, UK.

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The dysfunction of quantum-mechanical sensitive cGMP-activated Na/Ca exchange as a target for cancer therapy

Prof. Sinerik Ayrapetyan
Life Sciences International Postgraduate Educational Center, Armenia

It is known that cancer cells are characterized by overhydrated state and contain more than 90% of water (Kircuita et al., 1973). Cell overhydration serves as one of the diagnostic parameters for carcinogenesis (Damadyan 1971). However, the nature of metabolic mechanism, the dysfunction of which causes generation of cancerous cells has not been elucidated yet. The discovery of our laboratory reveals that the electro-genic Na/K pump-induced net water efflux from the cell is a fundamental mechanism controlling semipermeable properties of cell membrane, the dysfunction of which is a common consequence of cell pathology, including cancer.

Two quantum-sensitive families of high affinity (10^{-11}-10^{-10}M and 10^{-9}-10^{-8}M) ouabain receptors in cell membrane have been identified which, unlike low affinity ouabain (>10^{-7}M) receptors with inactivation effect on Na efflux, have activation effect on Na efflux, which is accompanied by water efflux from the cells. The highest affinity receptors stimulate Na/K pump by activation of cGMP-activated Ca efflux from the cell, while the receptors with middle affinity stimulate the cAMP-activated Na/Ca exchange in reverse (R) mode, which controls Na gradient on membrane by pushing out Na and decreasing membrane permeability for these ions.

Thus, the dysfunction of cGMP-dependent Ca efflux from the cells leading to cAMP-dependent RNa/Ca exchange-induced elevation of intracellular Ca is suggested as a primary mechanism for cell pathology, including cancer and cGMP-stimulated Ca efflux from the cell is considered as an effective tool for detection of earlier periods of carcinogenesis, thus becoming a target for tumor therapy.

Keywords: cancer, Na/K pump, cGMP, Na/Ca exchange

Biography:

Prof. Sinerik Ayrapetyan has received his PhD in Cell Biophysics in the Institute of Physiology of Ukraine Academy of Sciences, Kiev during the period of 1966-1970. Currently, he is the coordinator of UNESCO/UNITWIN Network in Biophysics, Biotechnology and Environmental health Control. His research includs the study of metabolic regulation of cell function in norm and pathology. He is serving as a Chief Editor for the Journal of “Bioequivalence and Bioavailability”, “Biomedical Engineering Current Research”, “Basic, Applied Pharmacy and Pharmacology” and “Pharmacology & Pharmaceutical Research”. He is also an editorial member of several reputed journals like “Electromagnetic Biology and Medicine”, “BBA General Subjects” etc. Prof. Sinerik Ayrapetyan is a member of a number of international societies. He has authored 7 international books and 115 research articles.

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Resistance Training and Quality of Life in Breast Cancer Survivors

Vitor Marques[1], Rafael Alves[1], Rafael Felipe Moraes[1] Thaynã Guimarães[1], Weder Silva[1], Claudio Lira[1], Mario Hebling[1], João Ferreira-Junior[2], Paulo Gentil[1], Maria Sebastiana Silva[1] Carlos Vieira[1]

[1]Federal University of Goias, UFG, Brazil.
[2]Federal Institute of Minas Gerais, Rio Pombas, Brazil

The number of studies involving patients with breast cancer and physical activity has increased in recent years. The Resistance Training (RT) has shown to be effective in improving. Objective: To compare quality of life between women breast cancer survivors (BCS) with apparently healthy women. Methods: This study analyses the effects of once weekly RT on fatigue levels among BCS. Randomized controlled trial. The 25 women included were randomized into RT or control group. The RT group performed eight weeks of RT (once per week). Quality of life was evaluated using the SF-36 questionnaire. The final score can vary between 0 (worse general health) and 100 (better health status). The SF-36 questionnaire consists of 8 domains: General Health Status, Vitality, Pain, Emotional Aspects, Social Aspects, Mental Health, Functional Capacity and Physical Limitations. Data normality was verified by the Shapiro-Wilk test, and the data were compared between groups by Student's t test. For independent samples, the significance level adopted was $p < 0.05$. A two-way repeated measures analysis of variance was used to test for significant main effects and interactions for these data. The level of significance was set at $p<0.05$. The results show resistance training improved the following subscales of SF-36: aspects of physical functioning (+27%, $p = 0.027$), physical role functioning (+54%, $p=0.008$), emotional role functioning (+42%, p=0,027) and metal health (+16%, p=0,032). Resistance training seemed a positive nonpharmacological tool for the improved of quality of life.

Keywords: breast cancer; Psychobiological aspects; physical exercise

Biography:

Vitor Alves Marques is physical education by profession, is master in Health Science at the Federal University of Goias, and its dissertation is about the effects of chemotherapy treatment on muscle performance in women with breast cancer in the year 2018. He is member the Laboratory of Physiology of the Exercise and Nutrition and Healthy at the Federal University of Goias (LAFINS/UFG) and also is member the Laboratory of Analyzes of Human Moviment (LAMOVH/UFG).

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The role of socioeconomic status in the relationship between social support and burden among cancer caregivers

Ameneh Yaghoobzadeh[1], Saeed Pahlevan Sharif[2], Kelly A Allen[3], Navaz Naghavi[2]

[1]School of Nursing, Arak University of Medical Sciences, Arak, Iran

[2]Taylor's Business School, Taylor's University Lakeside Campus, No. 1 Jalan Taylors, 47500 Subang Jaya, Selangor, Malaysia.

[3]Educational Psychology and Inclusion, Faculty of Education, Monash University, Clayton, Australia

While much research has focused on the direct impact of socioeconomic status on cancer patients, what is not clear is the impact of socioeconomic status on social support and the burden of care for caregivers. In this study, a cross-sectional method, using a convenience sampling approach, was adopted to collect the data of 191 caregivers of cancer patients who were referred to the oncology clinic and cancer institute of hospitals affiliated with Tehran University of Medical Sciences, Iran. The participants completed a questionnaire on basic demographics, the short version of the Burden Scale for Family Caregivers, and Zimet Multidimensional Perceived Social Support. A maximum likelihood exploratory factor analysis with oblique rotation to assess the factor structure of the constructs and the measurement model was conducted. The two-factor model consisting of 22 items explained 65.116% of the variance. There was a significant negative relationship between social support and burden ($b = -0.771$, $P < 0.001$) and also between economic status and burden ($b = -0.308$, $P < 0.01$). Moreover, there was a significant positive association between the interaction of social support and economic status and burden ($b = 0.138$, $P < 0.05$). More specifically, the negative relationship between social support and burden was statistically stronger for participants with weak economic status ($b = -0.663$, $P < 0.001$) than those with good economic status ($b = -0.356$, $P < 0.01$). Social support and an individual's economic status are essential determinants of caregiver burden. Further studies are recommended to better inform the precise support needed by caregivers to enhance their quality of life, and ultimately, that of the patients under their care.

Keywords: Socio-economic status, Social support, Care burden, Caregiver, Cancer caregivers

Biography:

Ameneh Yaghoobzadeh currently works at the Faculty of Nursing, Arak University of Medical Sciences. Ameneh does research in aging, ilder adults, and nursing. Her dissertation was about the exploring of the ageism formation among Iranian older adults. She has the opportunity to publish her research in some precious journals including BMC geriatrics, Health and quality of life outcomes, European Journal of Cancer Prevention, Journal of religion and health.

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Curcumin: A promising epigenetic therapeutic agent in Breast Carcinogenesis

Umesh Kumar[1,2*]

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[2]School of Biosciences, IMS Ghaziabad University, India

One of the mechanisms for epigenetic silencing of tumor suppressor genes (TSGs) is hypermethylation of cytosine residue at CpG islands at their promoter region that contributes to malignant progression of tumor. Therefore, activation of TSGs that have been silenced by promoter methylation is considered to be very attractive molecular target for cancer therapy. Epigenetic silencing of GSTP1, a TSG, is involved in various types of cancers including breast cancer. Epigenetic silencing of TSGs can be reversed by several molecules including natural compounds such as polyphenols that can act as a hypomethylating agent. Curcumin has been found to specifically target various TSGs and alter their expression. To check the effect of curcumin on the methylation pattern of GSTP1 gene in MCF-7 breast cancer cell line in dose dependent manner. To check the reversal of methylation pattern of hypermethylated GSTP1, MCF-7 breast cancer cell line was treated with different concentrations of curcumin for different time periods. DNA and proteins of treated & untreated cell lines were isolated and methylation status of the promoter region of GSTP1 was analyzed using methylation specific PCR assay & expression of this gene was analyzed by immunoblotting using specific antibodies against GSTP1. A very low and a nontoxic concentration (10 μM) of curcumin treatment was able to reverse the hypermethylation and led to reactivation of GSTP1 protein expression in MCF-7 cells after 72 h of treatment, though the IC50 value of curcumin was found to be at 20 μM. However, curcumin less than 3 μM of curcumin could not alter the promoter methylation pattern of GSTP1. Treatment of breast cancer MCF-7 cells with curcumin causes complete reversal of GSTP1 promoter hypermethylation and leads to re-expression of GSTP1 suggesting it to be an excellent nontoxic hypomethylating agent.

Keywords: Methylation, GSTP1, Curcumin, Breast cancer, MCF-7

Biography:

Dr Umesh Kumar is currently working as Associate Professor and Head in School of Biosciences, IMS Ghaziabad University Courses Campus, NH9, Ghaziabad, Delhi NCR INDIA. He has done his doctoral thesis entitled “Epigenetic Regulation in Breast Carcinogenesis” from University of Delhi in 2013. From his thesis he was able to publish his interesting findings in peer reviewed international journals of repute. Dr Kumar joined Division of Molecular Oncology in Institute of Cytology & Preventive Oncology (ICMR), Noida, WHO collaborated South East Asia Referral Laboratory for the Diagnosis of HPV induced Cervical cancer. Later he joined Stem Cells Biology Laboratory for his Post Doc in National Institute of Immunology, New Delhi in 2014 in the field of Epithelial ovarian cancer stem cell research. His study indicated pivotal role of epigenetic silencing of specific genes in breast cancer which may serve as potential therapeutic target for breast cancer.

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DAY 2

POSTER PRESENTATION

Secreted protein acidic and rich in cysteine and cancer: A homeostatic hormone?

Abdelaziz Ghanemi[a,b], Mayumi Yoshioka[a], Jonny St-Amand[a,b]

[a.]Functional Genomics Laboratory, CREMI, Québec Genome Center, CHUL-CHU de Québec Research Center, Québec, Québec G1V 4G2, Canada

[b.]Department of Molecular Medicine, Faculty of Medicine, Laval University, Québec, Québec G1V 0A6, Canada.

SPARC is overexpressed during tumors growth. This glycoprotein has a tumor suppression ability but no apoptotic effect on normal cells (specificity). In addition, the inhibitory properties of SPARC towards cancer development could be further explored, especially that SPARC induces apoptosis in cancer cells but not in normal cells which would increase the safety of an antitumor therapy based on SPARCrelated pathways (improved pharmacovigilance). However, a possible “SPARC resistance” and/or other changes in cancer-related growth factors could limit the inhibitory effects of SPARC towards cancer tissues.

Keywords: Secreted protein acidic and rich in cysteine Cancer Hormone Homeostasis

Biography:

Abdelaziz Ghanemi is afiiliated to both the Department of Molecular Medicine Faculty of Medicine of Laval University and the Functional Genomics Laboratory, Endocrinology and Nephrology Axis, CHU de Quebec-Universite Laval Research Center, Canada. He has studies and conducted research in three continents and. His recent publications are mostly on obesity and metabolic disorders. He has been awarded numerous awards and financial supports. He speaks four languages

NOTE:

Venue: Manchester Meeting Place, Sackville Campus, The University of Manchester, United Kingdom

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