

Breast Cancer Dubai 2020

"Prognosis and Diagnosis of Breast cancer"

**Flora Creek Deluxe Hotel Apartments, Dubai
United Arab Emirates
18th - 19th March, 2020**

Organized by:

BioLEAGUES Worldwide

In Association with:



Preface

This book reports the Proceedings of the “***Breast Cancer Dubai 2020***” held at ***Flora Creek Deluxe Hotel Apartments, Dubai, UAE*** on the ***18th & 19th of March – 2020***, organized by ***BioLEAGUES Worldwide***.

The publishing department has received more than 120 abstracts. After an initial review of the submitted abstracts, 50 papers were presented at the conference and were accepted for publication in the Conference Proceedings. The topics that are covered in the conference include types and stages of breast cancer, breast cancer and cell biology, types of cancer treatment, breast cancer research, breast cancer care, breast cancer surgery, advancements in breast cancer treatment, immunotherapy for breast cancer etc... We would like to thank all the participants for their contributions to the conference and the proceedings.

Reviewing papers of ***Breast Cancer Dubai 2020*** was a challenging process that relies on the goodwill of those people involved in the field. We invited more than 15 researchers from related fields to review papers for the presentation and the publication in the ***Breast Cancer Dubai 2020*** Proceeding. We would like to thank all the reviewers for their time and effort in reviewing the documents.

Finally, we would like to thank all the proceeding team members who with much dedication have given their constant support and priceless time to bring out the proceedings in a grand and successful manner. I am sure this proceeding will be a credit to a large group of people, and each one of us should be proud of its successful outcome...

Breast Cancer Dubai 2020

From BioLEAGUES Director's Desk...

On behalf of **BioLEAGUES Worldwide**, I am delighted to welcome all the delegates and participants around the globe to the **Breast Cancer Dubai 2020** which is going to be held at **Flora Creek Deluxe Hotel Apartments, Dubai, UAE** on **March 18th & 19th, 2020**. This conference will revolve around the theme "**Prognosis and Diagnosis of Breast cancer**".



It will be a great pleasure to join with Doctorates, Research Scholars and Academicians all around the globe. You are invited to be stimulated and enriched by the latest innovations in all the aspects of food safety and prevention techniques, while delving into presentations surrounding transformative advances provided by a variety of disciplines.

I congratulate the Chairperson, Organizing Secretary, Committee Members, coordinator BioLEAGUES and all the people involved for their efforts in organizing the **Breast Cancer Dubai 2020** and successfully conducting the International Conference and wish all the delegates and participants a very pleasant stay at Dubai.

A handwritten signature in blue ink, appearing to read 'A. Siddh Kumar Chhajjer'.

A. Siddh Kumar Chhajjer
Director
BioLEAGUES Worldwide

WELCOME ADDRESS



Bibi S. A. Hassan

President/Founder

Guyana Cancer Foundation

Guyana

Dear Team Members

On behalf of the Organizing Committee I am Bibi Saeedah Akhtar Hassan President/ Founder of Guyana Cancer. It is my distinguished pleasure in welcoming you to our first Breast Cancer Conference here in Dubai.

BioLeagues Worldwide organizes **Breast Cancer Dubai 2020** in Flora Creek Deluxe Hotel Apartments, Dubai during March 18-19,2020.

This is a great opportunity for scientists, researchers, scholars, doctors and various other professionals to get to meet and know each other in the grand Colloquium.

Breast Cancer 2020 is an extraordinary event designed for medical health professionals to share their research experiences and also learn from others experience.

I trust that you will enjoy our hospitality and stay in Dubai to experience the best of what we serve!

Enhance your knowledge base, and update your skills by broadening your horizons!

Warm Regards

Bibi S. A. Hassan

Early Detection Helps Save Lives!

From Bioleagues CEO's Desk...

On behalf of **BioLEAGUES Worldwide**, I am delighted to welcome all the delegates and participants around the globe to the **Breast Cancer Dubai 2020** which is going to be held at **Flora Creek Deluxe Hotel Apartments, Dubai, UAE** on **18th and 19th March 2020**.



“Prognosis and Diagnosis of Breast cancer” is the main theme of this “**Breast Cancer Dubai 2020**”

It will be a great pleasure to join with Scientists, Academicians, Research Scholars, Students, Industrialists and other association people all around the globe. You are invited to be stimulated and enriched by the latest in “**Breast Cancer Dubai 2020**”, while delving into presentations surrounding transformative advances provided by a variety of disciplines.

I congratulate the committee, coordinator BioLEAGUES and all the people involved for their efforts in organizing the event and successfully conducting this International Conference and wish all the delegates and participants a very pleasant stay at Dubai, UAE.

A handwritten signature in black ink, appearing to read 'R. B Satapathy'.

Mr. R. B Satapathy
Chief Executive Officer
BioLEAGUES Worldwide

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Breast Cancer Dubai 2020

"Prognosis and Diagnosis of Breast cancer"

ABSTRACTS

Dubai, United Arab Emirates

18th - 19th March, 2020

**Cleveland Clinic**

Immediate Versus Delayed Autologous Breast Reconstruction: A Retrospective Matched Cohort Study of Irradiated Patients

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Cleveland Clinic Abu Dhabi, UAE

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Cleveland Clinic Abu Dhabi, UAE

Vandevoort M

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Fabré G

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Abstract

BACKGROUND: The impact of radiotherapy on breast reconstructions is not completely understood. The purpose of this study was to evaluate long-term effects of radiation therapy in relation to timing of autologous breast reconstruction.

METHODS: A total of 1247 patients undergoing autologous breast reconstruction at the University Hospitals of Leuven between August 1997 and October 2013 were subjected to a retrospective matched cohort study. Each patient who underwent Immediate Breast Reconstruction (IBR) and received Post Mastectomy Radiotherapy (PMRT) were matched with two patients receiving PMRT and Delayed Breast Reconstruction (DBR), according to age and body mass index. Early and late complications were compared between both groups after a minimum follow-up of 3 years. The need for corrective procedures on the reconstructed and contralateral breast was also evaluated. Data were collected using patients' medical records.

RESULTS: A total of 20 patients who underwent IR with PMRT were identified and matched to 40 patients who underwent DBR. There were two revisions in the DR group, both due to venous occlusion. Both revisions were successful and no flap failures occurred in either group. The rate of early complications did not differ significantly between the two groups. Among late complications were both the rates of fat necrosis ($p < 0.001$) and skin contracture ($p < 0.001$) higher in the IBR group than in the

DBR group. Neither corrective procedures to the reconstructed breast nor symmetrizing operations in the contralateral breast, differed between the groups.

CONCLUSION: The current study indicates that radiotherapy may contribute to adverse longterm flap-related outcome after IBR. We therefore recommend reconstructions to be delayed whenever possible in patients who will require PMRT.



Expanding Scope about Factors Influencing Seroma Formation after Breast Cancer Surgery

Ahmed Lamey

Surgical Oncology Unit, Faculty of Medicine, Kafrelsheikh University, Egypt.

Abstract

Ever since mastectomy was first carried out by Halsted, surgeons have faced several problems such as necrosis of the skin flaps, breakdown of the wound, hematoma, infection, and seroma. Seroma is a collection of serous fluid that occurs at rates ranging from 2.5% to 5.1% after breast or axillary surgery. Seroma can interfere with wound healing, require prolonged treatment, cause patient discomfort, and delay adjuvant treatment. It is suggested that seroma occurs more frequently in extensive surgical procedures or in those that require a drainage tube. Prevention trials for seroma formation after breast cancer surgery include: usage of ordinary scalpel, harmonic scalpel or ultrasonic scissors has a little risk factor of seroma formation than the usage of electrocautery. Delayed removal of the wound drains when their daily output is less than 30cc. Early breast reconstruction especially in the same sitting of mastectomy. Using pressure garment early postoperative also considered a method for seroma prevention. Buttress and tacking sutures after axillary lymph node dissection. Delayed active shoulder exercise at the side of operation 5-7 days postoperatively with only daily activities in this period. The site, size of breast mass, previous biopsy or neoadjuvant, blood loss or transfusion, operative time, surgeon skills have no available evidence on increase the risk of seroma formation

Biography

Ahmed Lamey has completed his PhD at the age of 33 years from Kafrelsheikh University, Egypt. He is the chief administrative doctor of the operating theater.



My Blog Family: A Virtual Journey Internet-Based Analysis of the Lived Experience of Family, Partners and Friends of Individuals with Breast Cancer

Ghorayeb, J

Zayed University, Dubai, UAE

Madill, A

Zayed University, Dubai, UAE

Abstract

Background:

Breast cancer affects 1 in every 8 women and remains the second leading cause of death among women. The impact of breast cancer on the individual and their carers has been documented, however little is known about the type help and information sought by informal carers such as friends, partners, and family members who often resort to the internet. Investigating online forums provides a way to obtain a better understanding of those needs.

Objective:

The aimed to gain insight into the type of information discussed within online forums by family members, partners, and friends of individuals who have breast cancer.

Method:

A qualitative research using the Interpretative Phenomenological Analysis grasped the textual meaning of threads and posts made by the network of breast cancer women. Online discussions were converted to text files and a data-driven thematic analysis was performed to identify the emergent pattern of responses.

Results:

Sharing appeared as a core category linking the data together. The 65 participants communicated through three broad themes of advice, support, and validation. The content of the themes were divided into four sub-themes: referral to external resources, concerns, inter-participants exchange, and

emotional outlet. Moreover, the sub-themes had several additional apparent categories, amongst which are relationship strains and positive outcomes.

Conclusions:

The analysis also revealed that children and partners contributed to the majority of the posts and that men had a higher contribution than women. The virtual forum provided insight into how participants gave and received information as well as insight into the content of that information. Most threads indicated the establishments of bonds and ties among the contributors, and posts often ended with a gratitude or prayer signature line.



A Qualitative Study to Critically Explore the Socio- Ecological Determinants Influencing Screening Mammography Uptake among the Migrant Kerala Women in the United Arab Emirates

Leena R David

University of Sharjah, United Arab Emirates

Abstract

Social, cultural and ecological factors can influence and determine whether a woman will undergo screening for breast cancer. Literature proves that undergoing screening mammography, has great ability to detect breast cancer in its early stages for better treatment options and longer survival. However, studies show that Keralite women residing in Kerala are diagnosing breast cancer in its advanced stages and it is not a routine practice to undergo screening mammography among them. The principle emigration destination of Keralites is the United Arab Emirates (UAE). This is the first study aims to explore and identify the socio-ecological determinants for the uptake of screening mammography amongst Keralite women residing in the UAE. The study adopted qualitative research using focus group interviews. The socio-ecological model of health promotion is utilised as a theoretical framework for data analysis.

Biography:

Teaching Experience:

- Lecturer, Dept. of Medical Diagnostic Imaging, College of Health Sciences, University of Sharjah, Sharjah, United Arab Emirates. (Sep 2014- current).
- Assistant Professor, Dept. of Medical Imaging Technology, School of Allied Health Sciences, Manipal University, Manipal, India. (Mar 2012 - Aug 2014)

Educational Qualification:

- PhD on progress, MSc Medical Imaging Technology, MBA Health Care Services

Research

- Principle Investigator: A qualitative study to critically explore the socio- ecological determinants influencing screening mammography uptake among the migrant Kerala women in the United Arab Emirates.

- Co-Investigator: The Impact of Integrating E-Portfolio in Undergraduate Radiography Curriculum on the Quality of Students and Faculty Teaching/ Learning Experience.
- Co-Investigator: Exploring the readiness of university students for interprofessional education and practice.

Professional Memberships:

- Health Care and Professions Council (HCPC), United Kingdom
- Indian Association of Radiological Technologist, India

Research Interest:

- Breast cancer screening and Imaging
- Radiology & Osteoporosis
- Patient Radiation Dose Monitoring

Research publications and Journal reviewer:

- Multiple

Community Service:

- Presentations, Discussion, Demonstration about Breast Cancer: Early detection at various locations (NTV channel, Schools, Hospitals, Community Organisations) in the United Arab Emirates.



Breast Conserving Surgery: A Retrospective Study of 50 Cases

Verushka Mansukhani

Prime Hospital, Dubai, UAE

Abstract

Background: Breast conserving surgery (BCS) for Carcinoma breast is increasingly becoming the choice of treatment for eligible cases. With early diagnosis, better imaging technology, neoadjuvant chemotherapy, improved radiation facilities and increase general awareness of public, breast conserving surgery is increasingly been offered to these patients. However the option of breast conserving surgery is dependant on various factors. Herein we present data of 50 cases at a single high volume cancer centre in Mumbai.

Material & Methods: Retrospective data of eligible and available 50 cases from July 2017 to July 2108 was collected. Demographic, clinical, etiopathological, surgical, follow up including recurrence data was collected and tabulated. Patient feedback was collected with the EORTC (European Organisation for Research & Treatment of Cancer) based questionnaire.

Results: Size was not the primary criteria for BCS in our series. Few patients with locally advanced breast cancer who met with all other criteria were subjected to neoadjuvant chemotherapy followed by BCS with good cosmetic and oncological results. sentinel lymph node biopsy was done for all clinically node negative patients. Patients who were proven positive were subjected to a complete axillary lymph node clearance. In young patients simultaneous reconstruction with Latissimus dorsi flap was used with good results. Adjuvant Chemotherapy was given to patients with T > 1cm or node positivity.

Conclusion: Breast conserving surgery is the standard oncologic management in deserving cases. Primary reconstruction gives excellent cosmetic and psychological results with no inferior oncological outcome.



Relationship between Altered Myoepithelial Phenotype and the Inflammatory Cell Infiltrate in Progression of DCIS

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Abstract

Changes in the microenvironment have been implicated in the transition of pre-invasive Ductal Carcinoma In-Situ (DCIS) to invasive breast cancer. Normal myoepithelial cells have a tumour suppressor phenotype but they are altered in DCIS and ultimately lost with transition to invasive cancer. A consistent change in DCIS is up-regulation of the integrin $\alpha\text{v}\beta 6$ in myoepithelial cells. Preliminary observations identified a correlation between myoepithelial $\alpha\text{v}\beta 6$ and an increased periductal inflammatory infiltrate. The hypothesis of this study is that the altered myoepithelial phenotype influences the periductal inflammatory environment, which in turn mediates a pro-apoptotic effect on myoepithelial cells contributing to their loss. To investigate this, the inflammatory infiltrate was characterised in a series of DCIS tissue in relation to $\alpha\text{v}\beta 6$ status. This demonstrated significantly higher levels of CD4+ve and FOXP3+ve T cells around $\alpha\text{v}\beta 6$ +ve DCIS ducts compared to $\alpha\text{v}\beta 6$ -ve ducts ($P < 0.01$), suggesting an increase in Treg cells. In-vivo, Matrigel plugs containing injected into the flanks of female C57/Blk6 normal mice generated influx of higher levels of CD4+ve cells ($p = 0.005$) and FOXP3+ T cells ($p = 0.007$) in the presence of $\alpha\text{v}\beta 6$ +ve myoepithelial cells compared to $\alpha\text{v}\beta 6$ -ve cells, supporting the findings in human tissue samples. Since Treg cells produce TRAIL that can induce apoptosis, we investigated the influence of $\alpha\text{v}\beta 6$ on myoepithelial cells on the levels of TRAIL in T cells

and the hypothesis that $\alpha\beta6$ - positive myoepithelial cells may be more susceptible to TRAIL-induced apoptosis, leading to loss of the myoepithelial barrier. Firstly, levels of TRAIL in Jurkat and primary T cell populations co-cultured with $\beta4$ or $\beta6$ myoepithelial cells were measured. This demonstrated a higher level of TRAIL in primary T cells co-cultured $\beta6$ myoepithelial cells compared to those co-cultured with $\beta4$ myoepithelial cells. $\beta6$ +ve and $\beta6$ -ve myoepithelial cells were exposed to TRAIL, and this demonstrated that TRAIL enhanced apoptosis, measured by cleaved PARP, in $\beta6$ +ve cells. Furthermore, these cells showed loss of the anti-apoptotic protein Galectin-7, and knockdown of Galectin-7 in normal $\beta6$ -ve myoepithelial cells rendered them more susceptible to TRAIL-induced apoptosis. In DCIS tissues, an inverse relationship between $\alpha\beta6$ and Galectin-7 in myoepithelial cells was demonstrated, and Cytokine Array analysis showed that $\alpha\beta6$ +ve myoepithelial cells express higher levels of IL-16, which has a role in Treg cell recruitment. Taken together these results suggest that expression of $\alpha\beta6$ by myoepithelial cells in DCIS generates a tumour-promoter peri-ductal inflammatory infiltrate through altered cytokine release, is associated with reduced galectin-7 expression and enhances myoepithelial cell apoptosis in response to TRAIL. This provides a potential mechanism by which myoepithelial cells may be lost during evolution of DCIS and so contribute to progression to invasive disease.



Innovation in Cancer Therapeutics

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Abstract

Electro Chemo Therapy (ECT) is a new method for the local treatment of cutaneous and subcutaneous metastases. Permeabilization of the cell membrane by electric pulses allows (chemotherapy drugs) bleomycin to enter into the cell, increasing possibility of cytotoxicity. Where standard treatments are no longer possible, electro chemotherapy can be used effectively for local tumour control. Nevertheless, some patients develop recurrences, and chemotherapy has resulted in poor complete responses. It often leads to ulceration, bleeding, pain, and sometimes maggots' formation. The quality of life is significantly reduced. Repeated use of electro chemotherapy has allowed for an increase in the rate of complete remissions. ECT is proposed, with a palliative intent, for skin and subcutaneous tumours.

We had treated couple of patients with recurrent carcinoma breast, after post surgery and chemo and radiotherapy. ECT was given with palliative intent to reduce the mass and the pain and thus improve the quality of life.

We investigated ECT for the treatment of a small residual rectal cancer of the anorectal junction, after neo adjuvant radiotherapy, in a patient with severe co morbidities who underwent both major rectal surgery and even local excision.

In 2013, this form of treatment, which consists of a low-dose cytostatic and electroporation, was also included in the mammary guidelines of the Working Group for Gynaecological Oncology (AGO) and the German Cancer Society (DKG).



Reverse Phase Protein Array Technology as a Discovery Platform for Drug Selection in Triple Negative Breast Cancer Preclinical Animal Models

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Abstract

Clinically, breast cancers are divided into three distinct groups: those that express the estrogen hormone receptor (ER+) (typically also express the progesterone hormone receptor (PR+)), those that overexpress the ErbB2 (HER2) oncogene (HER2+), and those that express none of these three markers (termed “triple negative” breast cancer TNBC).

Unlike ER+ and HER2+ breast cancers; there are currently no targeted therapies against TNBC. Treatment of TNBC entails surgery coupled with radio- or chemotherapy, or both. The most commonly used chemotherapies are Taxanes (e.g. Docetaxel, Paclitaxel) and more recently, platinum-based agents (e.g. Cisplatin, Carboplatin). However, other than BRCA1/2 mutation status correlating with increased efficacy of platinum-based agents, there are currently no clinically useful predictors of differential treatment response among these commonly used chemotherapeutics.

We hypothesized that individual PDX may respond differentially to each chemotherapeutic, and that as a consequence, a molecular predictor of differential chemotherapy response could be developed that might be useful clinically to predict benefit from one chemotherapy over another.

Using Reverse Phase Protein Array (RPPA) as a discovery platform, we analyzed a series of triple negative breast cancer PDX models to identify potential protein pathways associated with drug resistance. We have identified MEK1, EZH2, and HDAC6 which are functionally validated in a 16 arms preclinical trial with single or double anti-cancer agents to overcome chemoresistance.

In this study, differentially expressed proteins were identified among triple negative breast cancer PDX models upon Docetaxel and Carboplatin treatments. Inhibitors to two proteins (MEK1, EZH2) from the common up-regulated list as well as other targets of interest were used to design a 16 arms preclinical trial with single or double anti-cancer agents to overcome chemoresistance for triple negative breast cancers. Preliminary data for drugs to MEK1, EZH2, or HDAC in combination of Chemo-drugs showed that combined anti-cancer agents are more effective than the single agent.

Correlation of Serum CA 15-3 with Histological Type of Carcinoma Breast

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IBMS Khyber Medical College, Pakistan

Abstract

BACKGROUND

The incidence of breast cancer and its fatal effects are constantly on a rise across the globe (globalcon 2016). Breast cancer is the most common cancer in Pakistan with approximately 1 in every 9 Pakistani women developing breast cancer at some stage of their life² (Badar F,shahid M 2017).

There is a constant search for better screening methods which help in early detection and also reflect upon the prognosis of the tumor. CA 15-3 is a reliable serum marker that also helps in identifying patients who would benefit most from adjuvant therapy³ (Kaustubh S Chaudhari et al, 2013). Studies have shown that an elevated level of serum CA 15-3 predicts early metastasis, frequent recurrences after treatment and bad prognosis⁴.

As different histological types of carcinoma breast also affects the prognosis of the disease⁵ so this study was conducted to observe the relationship between pre-op/ post chemo CA 15-3 levels with the prognostic factors like histological type, age, grade, stage, lymph node metastasis, tumor size and NPI.

METHODS

This prospective cross sectional study was conducted at teaching hospitals of PMC and KMC during December 2015 and August 2016. Serum CA 15-3 levels were estimated in 51 pushtoon female patients with carcinoma breast, post chemotherapy and waiting for mastectomy. These values were compared with the histopathological type, pathological TNM stage and other variables.

RESULTS

This study included 51 breast carcinoma patients with age ranging from 20 to 75 (mean age 44.92 yrs; standard deviation of 12.4. Serum CA 15-3 levels were raised in 24% of patients (n=12, Mean value 40.62 U/ml with standard deviation +/- 103.5).

Pathological TNM stage was significantly correlated with pre-op serum CA 15-3 (P value=0.018). Serum CA 15-3 was higher in breast carcinoma patients with higher grade 25.49 % (n=13 /51), higher stage 21.56% (n=11/51), larger tumor size 13.72% (n=7/51), lymph node metastasis 11.76% (n=6/51).

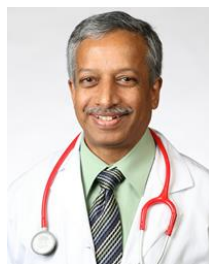
CONCLUSION

We from our study conclude that females of all ages are affected by carcinoma breast but in Khyber Pakhtoonkhuwa we are seeing more patients in younger age group.

Serum CA 15-3 levels were found to be higher in patients with advance disease hence it can prove to be a good prognostic marker and help in follow up of carcinoma breast patients.

However the correlation of this serum marker was not that strong with histological types of carcinoma breast.

Moreover in our study group higher frequency of patients presented with advanced tumor as indicated by higher MBRC grade, TNM stage, larger tumor size, more lymph node metastasis and higher NPI.



Prognostic Role of CTC's in Breast Cancer

K. Govind Babu

HCG hospitals, India

Abstract

Metastasis contributes to 90% of cancer deaths in breast cancer. Circulating Tumor Cells (CTCs) are cancer cells disseminated in blood and are considered to be pivotal in the metastatic cascade². Studies on CTCs have gained momentum since last few years. However, a deeper understanding about the biological and clinical impact of CTCs in the metastatic process is still awaiting. Isolation of pure CTC population is still a major challenge as they represent only a minor fraction of white blood cells. Enumeration of CTCs can offer a simple, robust method for diagnosis, prognosis and monitoring of treatment response in advanced cancer patients. We observed in vitro expansion of CTCs from patients with early stage, locally advanced, or metastatic cancer conditions. Interestingly, we noticed three different phenotypes of these clusters based on the cluster density: very tight, tight and loose. These clusters demonstrated a phenotype that was CK + ve/CD45 – ve. We found loose clusters from the blood of patients who had no clinically measurable disease while tight or very tight clusters were formed in blood of the patients with advanced disease. A number of cells in these clusters expressed CK but were not positive for CD45. In conclusion, dynamic changes of the CTC cluster phenotype in culture makes it a relatively straightforward approach to monitor an association with cancer progression and patient survival. It will provide a proxy to study drug responses in vitro and will boost the clinical utility of liquid biopsy.

Biography

Dr. K. Govind Babu is a Consultant medical oncologist at the HCG hospitals, Bangalore, he was formerly : Prof. and HOD - Medical Oncology, Kidwai Memorial Institute of Oncology, Bangalore. He has over 125 publications in national and international journals and text books. He has presented over 160 papers in many conferences. He has been involved in several global and national clinical trials. He has 20 prestigious awards to his credit. His interests are in precision oncology. He presently holds the position of president of Indian Society of Medical and Pediatric Oncology and the SAARC Federation of Oncology bodies.



New Approaches to Breast Cancer Risk Assessment and Prevention

Stephen R. Grobmyer

Cleveland Clinic Abu Dhabi, UAE

Abstract

New solutions are needed to address the global challenges of breast cancer. Advances in genetics are allowing us to identify patients at highest risk for breast cancer. There is controversy presently over which patients should be offered germline testing. For those without an identifiable pathogenic mutation, risk models continue to evolve and can be useful in identifying patients at elevated risk. Options for managing patients at high risk include increased surveillance, chemoprevention and risk reducing surgery. Single nucleotide polymorphisms are also now being utilized for breast cancer risk assessment. New areas of research including circulating cell free DNA and the microbiome are offering new possibilities for identifying patients at high risk for developing breast cancer and managing risk. Continued focus on these important areas offers significant hope to reduce the global burden of breast cancer.

Biography

Dr. Grobmyer is the Oncology Institute Chair for Cleveland Clinic Abu Dhabi. He was previously Co-Director of the Breast Program at Cleveland Clinic in Cleveland, Ohio. He is Professor of Surgery. He has extensive experience with breast conserving surgery, skin sparing and nipple sparing mastectomy for selected breast cancer patients. His research focused on the diagnosis and treatment of breast cancer has been featured in The New York Times, NBC Nightly News, and National Public Radio. He is a member of American Surgical Association. He serves on the editorial board of the Annals of Surgical Oncology, Surgery, American Journal of Surgery, European Journal of Surgical Oncology and The Breast Journal. He has published over 175 peer review manuscripts and 25 book chapters.



Breast Cancer Detection Using Infrared Thermography and Deep Residual Learning

Hushang Jawzal

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Abstract

Today, cancer is one of the most important causes of death. Especially the most common type of cancer in women is breast cancer. In view of the high treatment costs and the high risk of exposure, early diagnosis of the disease is crucial. Mammography is the most commonly used method for imaging breast cancer. However, there is a continuing search for a more effective method that has no side effects to the individual. One of these methods is thermography, which is a completely non-contact and noninvasive imaging method. In this study, breast cancer was detected using thermal image of 140 individuals. After the thermal images were pre-processed, they were applied as input to the residual network (ResNet) network, a type of a directed acyclic graph (DAG) network which is used in some applications requiring complex graph structure. 1116 breast images in the publicly available data dataset obtained under standard conditions were used in the training of ResNet and 478 images were used for testing of the network. Obtained 0.089% training error and 1.88% validation error values suggested that the proposed method is a very effective for early detection of breast cancer with thermal imaging.

Keywords

Breast cancer, breast thermal image, Residual network, Residual network ,image analysis, thermography



Sandwell and West
Birmingham Hospitals **NHS**
NHS Trust

Pre-Operative Breast Lesion Localization: Current Trends

Humaira Khan

Sandwell and West Birmingham Hospitals NHS Trust, UK

Abstract

Continuous improvements in screening mammography have led to increased detection of non-palpable clinically occult breast lesions which can be successfully treated with breast conservation alone. However, this requires accurate preoperative localization to obtain clear margins while minimizing resection of healthy breast tissue and achieve good cosmetic outcomes.

Conventional localization methods involve same-day wire placement into a non-palpable lesion. However, this technique has multiple disadvantages including patient discomfort and inconvenience, possible wire transection and migration, suboptimal surgical outcomes, limited scheduling flexibility decreasing operating room efficiency. To overcome these problems, promising new non wire techniques have been developed as better alternatives. The purpose of my talk is to provide an overview of these techniques and discuss their advantages and drawbacks and currently available outcome data.

Biography

Dr Humaira Khan. MBBS, FCPS, FRCR She is the director of breast imaging at Sandwell and West Birmingham Hospitals NHS Trust. This is the largest breast screening service in Birmingham and 13th largest service in the UK.

She has been working as a consultant radiologist with special in female Imaging since last 15 years but always maintained an active interest and involvement in general imaging. She is also a senior academy teacher and examiner for university of Birmingham medical students and faculty member of simulation team.

Dr Khan was born in Karachi, Pakistan. After completing MBBS degree from Sindh Medical College, JPMC she completed her radiology training from Aga Khan University Hospital. She joined University Hospitals of Leicester as a consultant radiologist in 2006. Since 2012 she has been working as a Consultant Radiologist in Sandwell and West Birmingham NHS Hospitals. She plans to continue in her current role which is expanding and developing. Essa is a member of editorial board at the International Journal of Petro chemistry and Research (ISSN: 2638-1974), and Journal of Chemistry and Applied Chemical Engineering (ISSN : 2576-3954) Essa holds a master's degree of Science in Petroleum Engineering Far from engineering, Essa is a co-founder and a lead player at the United Arab Emirates Music Orchestra.

Changes in Familial Perception Due To Breast Cancer Diagnosis

Dr. Aradhana Balodi Bhardwaj

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Sandhya Java

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Amity University, Dubai, UAE

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Abstract

Breast cancer patients suffer through a great deal of mental and emotional turmoil during their diagnosis. Being detected with such an invasive disease deeply affects not only the patient but their entire family as well. According to APA, “When one member of a family has cancer, the whole family is affected.” Psychologists consider family members as ‘secondary patients.’ And thus, this paper aims to study the perceived changes an individual’s family experiences following the breast cancer diagnosis and the type of psychological support she receives from the family during the detection and treatment process. Qualitative data is gathered through semi-structured interviews of 8 breast cancer patients over the age of 40 along with their family. Thematic analysis performed on the discussion with the patients indicates that amongst all the members of the family, the children of the patient are most affected and are prone to anxiety, fear, uncertainty and depression. Findings also show that family support was provided in the form of physical, emotional, psychological and financial aid. Out of these, financial support is quite challenging, as supported by secondary data. With personal savings and health insurance, some families resort to taking high-interest loans and selling their properties. Another finding shows that the presence of social stigma attached to breast cancer leads to social embarrassment among patients and their families. Holistically, this research looks at the changes a family encounters with breast cancer diagnosis and the psycho-social support families provide to the patients. The limitations of the study and prospects for further studies are also highlighted.

Biography

Breast cancer, Diagnosis, Psycho-social support, Familial changes, Thematic analysis & Qualitative data



Calcium-Sensing Receptor Promotes Breast Cancer Cell Proliferation, Migration and Invasion via Activation of ERK1/2 and Integrin β 1

Mohammad A Y Alqudah

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Abstract

Breast cancer has the highest incidence of metastasis to the bone. Targeting bone resorption-induced release of chemoattractant factors such as calcium is crucial to prevent such metastasis. We aimed to evaluate the biologic effects of antagonizing Calcium-Sensing Receptor (CaSR) signaling on breast cancer cells in the presence of relatively low extracellular calcium concentrations. This study evaluated the anti-proliferative, anti-migratory, and anti-invasive effects of NPS2143, a calcilytic and a calcium-sensing receptor antagonist, in breast cancer cells in vitro. MTT colorimetric assay was used to assess cell viability. Apoptosis was assessed by measuring caspase-3/7 activity. Cell migration and invasion were assessed using wound-healing assay and Matrigel invasion chambers. Our study showed that inhibition of CaSR via NPS2143 significantly reduced cell viability with IC₅₀ values of 4.08 and 5.71 μ M in MDA-MB-231 and MCF-7 cells, respectively. Inhibition of CaSR induced apoptosis in MDA-MB-231 breast cancer cells which was accompanied with a remarkable reduction in the expression of Bcl-2 antiapoptotic protein. Inhibition of CaSR suppressed migration and invasion of MDA-MB-231 cells with a significant reduction in the expression of p-ERK1/2 and integrin β 1 proteins. Our study supports CaSR as a promising target of therapy that could prevent the early cancer metastasis in breast cancer.

Biography

Mohammad A. Y. Alqudah is an Associate Professor in Clinical Pharmacy at JUST. His research interests lie in the area of Pharmacogenomics and Molecular biology of human cancer. In the previous 8 years, Dr. Alqudah has published in various journals and coauthored 19 publications in Clinical Pharmacy and Molecular Medicine.

Dr. Alqudah is currently the Head of Clinical Pharmacy department and a member of the Institutional Review Board and Pharmacy and Therapeutic committee at King Abdullah University Hospital. Dr. Alqudah is the instructor for Immunology, Oncology Therapeutics and Pharmacogenomics at JUST.

Bivalent Status of the CD20 Promoter after Valproate Treatment in CLL Patients

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Abstract

Treatment with anti-CD20 antibodies is only moderately efficient in Chronic Lymphocytic Leukemia (CLL), a feature which has been explained by the inherently low CD20 expression in CLL. It has been shown that CD20 is epigenetically regulated and that Histone Deacetylase Inhibitors (HDACis) can increase CD20 expression in vitro in CLL. To assess whether HDAC is can upregulate CD20 also in vivo in CLL, the HDACi valproate was given to three del13q/NOTCH1wt CLL patients and CD20 levels were analysed (the PREVAIL study). Valproate treatment resulted in expected global activating histone modifications suggesting HDAC inhibitory effects. However, although valproate induced expression of CD20 mRNA and protein in the del13q/NOTCH1wt I83- E95 CLL cell line, no such effects were observed in the patients studied. In contrast to the cell line, in patients valproate treatment resulted in transient recruitment of the transcriptional repressor EZH2 to the CD20 promoter, correlating to an increase of the repressive histone mark H3K27me3. This suggests that valproate-mediated induction of CD20 may be hampered by EZH2 mediated H3K27me3 in vivo in CLL. Moreover, valproate treatment resulted in induction of EZH2 and global H3K27me3 in patient cells, suggesting transcriptionally repressive effects of valproate in CLL. Our results suggest new in vivo mechanisms of HDACis, which may have implications on the design of future clinical trials in B-cell malignancies



Reviewing the SLNB and Axillary Staging

Zoe Vlamaki

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Abstract

Sentinel lymph node biopsy is a prognostic key in the staging and prognosis of breast cancer. The techniques to detect it started from the simple localization base on the anatomical topography to more advanced techniques accepted base on their rate of sensitivity and accuracy. Is the SLNB falling again into a new way to look and localize it when evidence of CT scintigram. computer tomography lymphography, gives a new information to be aware



The Rational Psychotherapy of the Husbands and Problems in Family Life in Patients with Breast Cancer after Mastectomy

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Abstract

Introduction

Women often have problems in family relationships after mastectomy. Women associate them with the loss of femininity after mastectomy.

Objective

We monitored 63 married couples for 5 years after mastectomy in a woman. They were married for 15-20 years before the mastectomy. Each married couple had conflicting situations in their lives, but at the time of inclusion in the study, no one had reported plans for divorce.

Method

Before the operation and after the mastectomy, the husbands of all these women were offered a rational psychotherapy session where the psychiatrist worked with the oncologist to talk about the problems that may arise in the family and ways to overcome them. Only 29 husbands agreed to attend this therapy. During the annual check-ups with an oncologist, women talked about family relationships and filled out a Scale of Subjective Evaluation of Family Relationships. Women who including in the study were conditionally divided into two groups of women whose husbands attended the proposed rational therapy in the first group (n=29) and whose husbands refused rational therapy in the second group (n=34).

Results

For various reasons (husband's death, woman's death, moving to another city), 9 women from the first group and 11 women from the second group could not complete the study. None of the 20 women in the

first group who completed the study were divorced. And in the annual completion of the Scale of Subjective Evaluation of Family Relationships, women in this group reported that their husbands took more care of them and paid more attention than before the mastectomy. In the second group of 23 women who completed the study, 10 women remained married after 5 years. All women in the second group in the annual completion of the Scale of Subjective Evaluation of Family Relationships noted the cooling of the family relations one year after the operation. Within 2 years after the operation, 13 women in the second group divorced. The reason for the divorce was the cooling of feelings on the part of the husband.

Conclusion

Apparently, husbands who had undergone rational psychotherapy initially had a warmer relationship with their wives and wanted to understand how to help them and did everything to do so, and maintained these relationships for the next 5 years.

Risk Determination and Prevention of Breast Cancer Metastasis

Maxwell Nana Agyekum

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Abstract

Breast cancer is an increasing in public, health problem substantial advances haven't easy been made in the treatment of breast cancer but the introduction method to predicts women at elevated risk and prevent it become one of the major obstacles in the country and into the whole world.

Breast cancer metastasis accounts for the majority of deaths from the breast cancer, detection of breast cancer progression. Emerging techniques using the analysis of circulating Tumor cells shows promising results in predicting and identifying the early stages of Breast cancer metastasis in patient's. Additionally a deeper understanding of the metastatic cascade in breast cancer will be critical for developing therapeutic intervention to combat breast cancer metastasis.

Africa as a whole is lacking behind in the infrastructure and proper measures to put in place in order to reduce the level of breast cancer affecting the women because of poor leadership, our women and the girl child are mostly affected by this sickness and where by our African leaders and the the leaders around needs to wake up and tighten their belt In order to help doctors by introducing good measures and medicine to prevent the reduction of breast cancer.

Prediction models strategy a woman risk for developing cancer and can guide screening recommendations based on the presence of known and quantifiable hormonal, environmental, personal or genetic risk factor. Mammography remains the mainstay breast cancer screening and detection but reasons imagine in the ultrasound have become useful diagnostic adjuncts in selected patients population.

We really need to put a proper measures and factors by reducing the breast cancer in our community and the whole world, by educating and getting good doctors, nurses, and proper arrangement to reduce the level of breast cancer in the world. Above all we need to start creating awareness from the youth on how to prevent the causes of breast cancer and its problems. I believe given me a chance to express myself will give me a great opportunity to tell the peoples and to the world some key measures on how to prevent and control about this since I have so many experience in this breast cancer screening platform.

**Imperial College
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Effect of Pregnancy on the Mutational Landscape of the Normal Human Breast

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Abstract

Introduction

The age at First Full-Term Pregnancy (FFTP) has long been recognised as a risk factor for breast cancer, but the underlying mechanism has not yet been identified. By looking at the normal breast, we hypothesise that the mutational burden in the mammary epithelium is affected by both age and parity, and the interplay between the two variables affects the probability of acquiring oncogenic mutations at different rates in the parous and nulliparous breasts.

Material and Methods

We performed Whole-Genome Sequencing (WGS) on the laser-captured epithelial and stromal cells from 20 healthy parous (early and late, age range, 18 to 39) and nulliparous breast. The stroma from the same donor was used as the control to eliminate the germline mutations.

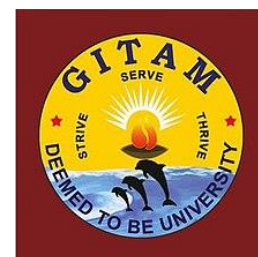
Results and Discussions

The results from the WGS revealed that the genomic landscape of the normal breast epithelium is characterised by a high number of somatic mutations (from 200,000 to 750,000 SNPs) and by the presence of mutations in breast cancer drivers (up to and average of 100 hits/gene). While the nulliparous breast is characterised by little variation in the mutational burden across the years, in the parous breast the burden increases with age, with comparable values to the nulliparous breast for the early parity group and significantly higher levels for older parity status. In particular, mutational hits in the driver genes are irrespective of age, significantly higher in the parous breast ($p < 0.005$). The increase in mutation of the parous breast in the older age groups is linked to the presence of significant smaller clones, estimated on variant allele frequencies compared to nulliparous breast. This confirms that driver genes are already mutated in the healthy breast, and that the higher proliferation of the parous breast contributes to the higher probability of a mutated cancer clone to expand within the mammary epithelium.

The normal breast also showed the evidence of driver events in the P53 (2/20, rs28934576) and PTEN (2/20, rs121909224) genes, covering 45% to 48% of cells in the mammary epithelium.

Conclusion

These findings have implications for better understanding the breast cancer disease, as well as for understanding the disparity in the risk of breast cancer based on age and parity status.



CD151 - A Potential Target for Natural Phytochemicals for Sensitizing Triple Negative Breast Cancer Cells to Ionization and Chemotherapy

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Abstract

The tetraspanin CD151 is a highly expressed in most destructive and clinically challenging subtype, Triple-Negative Breast Cancer (TNBC). The overexpression of CD151 is linked to aggressive phenotype, tumor size, nodal stage, advanced stage and negative expression of ER, PR and amplified HER-2 in TNBC. CD151 is a novel regulator of drug resistance, stemness and tumorigenicity. CD151 supports cellular and signaling mechanisms of tumor onset and metastasis by interacting with membrane receptors through Large Extracellular Loop (LEL) and serve as scaffold for signal transduction in Tetraspanin Enriched Microdomains (TEMs). It drives drug-resistance in integrin independent and radio-resistance in integrin dependent mechanisms. A small molecule inhibitor, 2-thio-6-uridine reduced the proliferation by targeting LEL of CD151 and cyclo-(Leucyl-Proline) inhibited the migration of TNBC cells by disrupting CD151-EGFR axis. Historically, medicinal plants are at the forefront of drug discovery and revisited to discover anticancer drugs by using target-based screening approaches and RNAi technology. The present study, employed a specific strategy was to discover CD151 inhibitors based on molecular docking and structure-based pharmacophore analysis from a dataset of natural small molecules with anticancer properties. The binding modes and pharmacophore mapping analysis provide insights into the contribution of particular structural moieties of the natural compounds towards their activity against CD151 and catechol was identified as potent candidate molecule. This work could be helpful in further design and development of nanoformation based drugs for the treatment of tripe negative breast cancer.

Biography

Former Head and Chairperson, BoS., Dept. of Biochemistry and BI (2013 to 2019), Coordinator, FIST, School of Life Sciences, GIS, GITAM (2016 to date), Coordinator, Academic Monitoring, School of Life Sciences, GIS (2017 to date), Member, Research and consultancy committee, GITAM (2019 to date) and Editor, GITM Science Bulletin, GIS, GITAM - Jan, 2019 to date.



A Prospective Study of Dose Comparison between Deep Inspiratory Breath Hold (DIBH) Technique versus Free Breathing (FB) Technique in Reducing Cardiac Dose in Left Sided Post Mastectomy Breast Cancer Patients Treated With Radiotherapy

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Abstract

Introduction: Cardiac mortality and morbidity is one of the most dreaded long term side effects of breast cancer treatment. Both radiotherapy and chemotherapy contribute to cardiac morbidity. EBCTCG concluded that risk for radiation induced heart disease increases by 3% for every 1Gy increase in mean heart dose. Also the retrospective study from Norway concluded that relative risk of major coronary events increases linearly with mean heart dose by 7.4% per Gy. As there are enough evidence for overall survival with anthracycline and trastuzumab based regimens, it may be detrimental to omit them from these regimens. So, in an attempt to minimise cardiac morbidity, newer radiotherapy techniques to minimise dose to the heart without compromising target coverage have been studied. One such technique is DIBH with real time position monitoring (RPM). As there are very sparse prospective data of DIBH in chest wall radiotherapy, we aimed to conduct one such study.

Objectives: To determine dosimetrically whether DIBH reduces the cardiac (heart and left anterior descending [LAD] artery) and ipsilateral lung doses compared to FB, in patients receiving radiotherapy to left side chestwall with 3D-CRT technique and to quantify it.

Material & Methods: 25 consecutive left sided postmastectomy breast cancer patients between November 2018 and November 2019 with minimum breath hold duration of around 15 seconds were included in the study. Immobilisation was done with breast board and thermoplastic mask. 2 sets of thermoplastic masks and simulation CT images were acquired for each patient - first in FB (control) and the second in DIBH with RPM system. Target volumes and organs at risk were delineated on both the scans in accordance with published guidelines. A dose of 40Gy in 15 fractions was planned with 3D-CRT technique using 2 opposed tangential fields. Dose volume histograms (DVH) were generated for all delineated structures and comparison between the 2 plans were recorded for each patient.

Results: The target coverage parameters (PTV) were found to be comparable in both FB and DIBH plans in terms of V95% and Dmean values. DIBH significantly reduced the mean heart dose by 1.46Gy or 28.19% (from 5.18Gy to 3.72Gy; $p < 0.001$), mean LAD dose from 25.94Gy to 16.99Gy (ie by 8.95Gy, 34.50%) and maximum heart distance (MHD) from 2.17cm to 1.22cm (ie by 43.54%, $p < 0.001$). This reduction was seen in all heart parameters analysed. While DIBH reduced left lung V20Gy from 22.81% to 17.36% (ie by 23.89%, $p < 0.001$), ipsilateral mean lung dose was reduced from 10.77Gy to 8.72Gy (ie by 19%, $p < 0.001$) and combined mean lung doses were reduced from 5.424Gy to 4Gy (ie by 26.15% or $p < 0.001$).

Conclusions: With appropriate patient selection and adequate training, DIBH is an acceptable technique in reducing both cardiac and lung doses in left sided post mastectomy patients receiving radiotherapy without compromising target coverage. This could result in fewer radiotherapy-related complications. However, long term follow up is required to analyse the clinical outcomes resulting from the reductions in heart and lung doses. Moreover, studies with larger sample size are warranted in the future to consolidate the significance obtained in our study.

Biography

I am an early career radiation oncologist, with 4 years of experience, currently pursuing my DNB residency in Radiation oncology at Yashoda Hospitals - Somajiguda, a leading multispeciality tertiary care centre in Hyderabad, India. I am also a DMRT holder from the venerated Amrita Institute of Medical Sciences, Kochi, India. Breast cancer is a topic of interest to me, one of the reasons to chose this study.

