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BREAST CANCER RESEARCH

CBCR 2019

Theme:
Delving into Breast Cancer Research & Advance Therapies

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# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Media Partners</th>
</tr>
</thead>
<tbody>
<tr>
<td>Keynote Forum</td>
</tr>
<tr>
<td>Oral Presentations</td>
</tr>
<tr>
<td>Poster Presentations</td>
</tr>
<tr>
<td>Accepted Abstracts</td>
</tr>
</tbody>
</table>
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Breast cancer (BC) is one of the most common solid tumors to metastasize to the leptomeninges. We characterize, by flow cytometry, the cerebrospinal fluid (CSF) floating cancer cells and the tumor reactive population in 15 consecutive cases of BC leptomeningeal metastasis (LM) at diagnosis. In one patient the study was also conducted for treatment monitoring after therapeutic lumbar puncture. Syndecan-1 (CD138), MUC-1 (CD227) CD45, CD34, CD15 CD24 CD44 and CD133 expression were evaluated.

Despite a low absolute cell number (12 cell/μl, range 1–86), flow cytometry characterization was successfully conducted in all the samples, documenting CD138 and CD227 overexpression on BC cells in all the cases analyzed. A strong syndecan-1 and MUC-1 expression was documented by immunohistochemistry on primary breast cancer tissues in 5 cases and in the brain metastasis of one patient. The CSF tumor population was flanked by T lymphocytes. Flow-CSF monitoring performed after therapeutic lumbar puncture documented a decrease in the percentage of tumor cells and an increase of CSF T-lymphocytes.

Flow cytometry can be successfully employed for solid tumor LM characterization even in CSF samples with low cell count. This exploratory study documents Syndecan-1 and MUC-1 overexpression on CSF floating BC cells, potentially representing molecular markers for circulating tumor cell detection and LM treatment monitoring, as well as a primary target for innovative treatment strategies. The T lymphocyte infiltration, documented in all the CSF samples, suggests a possible involvement of the CNS lymphatic system in cancer cell migration, supporting the extension of cellular immunotherapy to LM.

Biography
Iole Cordone graduated in Medicine at the age of 24 at "La Sapienza" University School of Medicine in Rome, Italy and completed her postdoctoral studies at "The Royal Marsden Hospital" London, UK. She is the coordinator of the onco-haematology diagnostic unit of the Clinical Pathology at the Regina Elena National Cancer Institute, Rome. Dr. Cordone research activity focuses on flow cytometry characterization of hematological and solid tumor leptomeningeal metastasis and minimal residual disease monitoring in myeloma.
Women in poorer countries bear a higher burden of breast cancer mortality, with survival rates <40% compared to >80% in wealthier countries. Inadequate treatment protocols are partially to blame. Oncotype DX® (ODX) is a multigene assay estimating risk of distant recurrence and chemotherapy benefit in estrogen receptor (ER) positive breast cancer patients. Cost ($4,620.00) impedes its adoption in poorer countries, and the cost is unnecessary in certain patients. We published (Mod Pathol. 2015; 28(7):921-31) and validated (Cancer Med. 2019; doi: 10.1002/cam4.2323) an algorithmic approach (Rochester Modified Magee algorithm [RoMMa]) using standard histopathologic variables, supporting only reflex ODX testing.

No “low risk” patients with a RoMMa score ≤12 (n=56) and only 4/183 (2%) “Low risk” patients with a RoMMa score ≤18 had a breast cancer recurrence. 9/172 (5%) “Low risk” ODX patients (ODX score <18) had a recurrence. 1/12 (8%) “High risk” RoMMa patients (RoMMa score >30) had a recurrence. 3/24 (12.5%) high risk ODX patients (ODX score >30) had a recurrence. All “high risk” RoMMa cases (n=25) had a “high risk” ODX score.

RoMMa can be of value in risk stratifying ER+ patients when ODX is not available. A “stepwise” approach, using RoMMa when risk stratifying any ER+ patient, can identify when ODX may not provide additional clinical utility. A “stepwise” approach would have resulted in a potential savings of almost $300,000,000 in 2018. Additional validation of the RoMMa in multiple cohorts with outcome data is needed to insure that the RoMMa is indeed generalizable to the broader breast cancer population.

Biography

Turner completed a combined MD/MPH (Rutgers University) and Master in Health Administration (MHA) (University of South Florida). After residency in Family Medicine (Duke University) he practiced for five years, then completed another residency in Pathology (University of Florida), with fellowships in general surgical pathology (University of Texas/ San Antonio), oncologic surgical pathology (Roswell Park Cancer Institute), and Breast/GYN pathology (Yale School of Medicine). He is Associate Professor of Pathology and co-director of the Breast/GYN Pathology fellowship at the University of Rochester Medical Center. His interests include how standard histopathologic variables can provide cost-efficient/effective outcome data for breast cancer patients.
Introduction:
Breast cancer affects a younger population in the Gulf particularly in Saudi Arabia and breast conservative treatment in culturally preferred. Complete Pathological Resolution following neoadjuvant chemotherapy is increasingly being observed with the new chemotherapy agents. Although MRI is more accurate in such evaluations, Digital Mammography and high resolution ultrasound which are less expensive are performing more than measurements as recently shown to accurately depicting complete pathological resolution, which is the focus of this presentation.

Methods:
A retrospective study of 93 breast cancer cases who had neoadjuvant chemotherapy and had presurgical radiological localization was carried out. All had post biopsy tissue marker placement preferably centrally. Forty five had ultrasound localization and mammographic localization were performed in 48 cases where primary ultrasound visualization was unclear. Complete radiological resolution was determined as absence of mass with only post biopsy tissue marker overlying normal breast parenchyma pattern in Ultrasound and in Mammography (tissue marker sign). The presence of mass of any size with or without abnormal parenchymal pattern was considered as residual tumor. The brief pathological results were either residual tumor or complete resolution.

Results:
In those with ultrasound localization, residual tumor occurred in 43 cases while pathology had 41 cases i.e., 95% positive accuracy. Complete Pathological Resolution was found in 4 cases as against US prediction of 2 cases. Those with mammographic localization due to inadequate visualization of the tumor location at ultrasound had a correct correlation of 40 out of 43 cases with complete pathological resolution, i.e., 93% negative accuracy. Pathological residual tumor in this group was 5 while radiologic finding was in 8 cases. Dense breast was the cause of false positive in 3 cases and these cases had minimal residual tumors.

Conclusion:
The solo finding of post biopsy tissue marker (tissue marker sign) on a normal breast parenchyma pattern following neoadjuvant chemotherapy correlates very well (93%) with complete pathologic resolution. Limitation of assessing breast parenchyma occurred with dense breast. A new BI-RADS category e.g., BI-RADS 6 zero could be considered for radiologic complete resolution when there is zero imaging finding. It highlights the landmark finding for surgery or vacuum biopsies and provides good radio pathological correlation.
Biography

Dorothy Makanjoula is a Professor and Consultant in Radiology. She held Postgraduate training in Edinburgh University Scotland.

Her Main interest was Breast Imaging and Intervention: Body Imaging. Her Current Position was Section Head, Women’s Imaging at King Abdulaziz Medical City, Ministry of National Guard Health Affairs, Riyadh, K.S.A. Dorothy Highlights over 50 scientific publications in peer reviewed journals and numerous presentations. She held several guest lectures/ peer review of articles for publication. Dorothy Makanjoula Awarded International Woman of the Year and 2000 outstanding scientist of the 20th century by the Cambridge Biographic Center, UK.
Comparison and validation of infrared breast image edge maps for Segmentation using level sets

J Thamil Selvi
Sri Sairam Engineering College, India

Introduction: Breast cancer is the most prevalent cancer in women. Early prognosis of breast cancer increases the survival rate. Mammography, the gold standard technique has high false positive rate and less sensitivity in dense breast tissue. Thermography, being a functional imaging technique captures the physiological information. It is reported as an adjunct tool due to its improved sensitivity and specificity. To facilitate the early diagnosis of breast cancer segmentation is essential. Poor contrast, low SNR, uncertain lower breast boundaries and unclear inframammary fold makes segmentation a challenging task. In this work, an attempt has been made to extract edge maps using Gaussian filter, Second order, fourth order PDE based diffusion filter and phase based edge map. The extracted edge maps are validated and subjected to level set method to delineate the breast tissue.

Methods and Materials: Breast thermal images for this study are obtained from online database of the project (http://visual.ic.uff.br/proeng). 55 images with varying edge characteristics are considered for this analysis. The images are subjected to Gaussian filter and edge maps are extracted by varying the sigma value. The edge maps extracted by varying sigma values are validated using Anisotropic Quality Index (AQI). Based on the validation optimum sigma value is chosen. Similarly the edge maps are extracted from second order and fourth order partial differential equation based diffusion filter. The extracted edge maps are validated using AQI. To aid precise segmentation phase congruency method is employed to extract edge map and validated using AQI. The optimal edge map is chosen and further subjected to Distance Regularized Level set method to delineate the breast tissues from other region.

Result and Discussion: The edge map extracted using phase congruency method is thin and found to be continuous. The intensity based edge map fails to stop level set contour at desired location. Hence it is found to have loss of inframammary fold and fail to capture the weak edges of breast images. The phase based edge maps with DRLSE method are found to be insensitive to noise. Hence this method aid accurate segmentation without missing object edges. Good correlation of 0.98 and 0.96 is observed between the segmented and ground truth area of breast thermal images.

Conclusion: The proposed level set segmentation technique with Phase based edge detections shall be used to extract the breast tissue from the thermal images without the loss of breast tissue. This technique shall be further used to identify the pathology for the mass screening of breast cancer for its early detection and clinical interpretation.

Keywords: Breast thermal images, Phase congruency diffusion filters, DRLSE method and AQI

Biography

Thamil Selvi was an emerging researcher in the field of breast cancer. She is working as Assistant professor in Sri Sairam Engineering College. She had around 17 years of teaching experience. She had 6 years of research experience in various imaging modality. Her area of interest includes retinal image analysis, CT liver image analysis and MRI images. She published papers more than 13 research papers in various international and national conferences in the field of thermal breast image. Thamil Selvi would like to join hands with clinician to mitigate the problem of breast cancer at early stage.
Image-guided wire placement for nonpalpable breast lesions has been the standard pre-operative localization method since the 1970s. The inherent disadvantages to traditional needle wire placement include a coordinated schedule for a radiologist to perform a same-day wire placement in addition to potentially limiting surgical incision entrance. Other drawbacks to wire placement include potential displacement of wire and patient discomfort with protruding wires. In 2016, the FDA approved SAVI SCOUT® radar reflector (Cianna Medical Inc, Aliso Viejo, California USA) which offered patients a reliable non-radioactive localization alternative. At Moffitt Cancer Center, a single tertiary cancer center, we began utilizing SAVI SCOUT® in early 2016. With its success for accurate intraoperative identification of single-site targeted lesions including axillary lymph nodes, SAVI SCOUT® was adapted to multiple reflector placements for multiple lesions and for bracketing larger volume excisions. In August 2018, SAVI SCOUT® received FDA clearance for use in all soft tissue which has allowed our institution to localize skeletal sarcomas, intramuscular pectoral lesions, and interpectoral lymph nodes. With the ability for long term implantation, SAVI SCOUT® has been proven to be a safe alternative localization method with the added benefits of improved scheduling efficiency for both the radiology and surgery departments.

Biography

Williams received her Degree in Medicine from Medical University of South Carolina, Charleston, SC. She did her residency and Musculoskeletal Diagnostic Imaging Program Fellowship at the University of South Florida, Morsani School of Medicine. She also did a Fellowship in Breast Imaging at Moffitt Cancer Center. She started her career at Moffitt Cancer Center in 2008 and has been an asset to the Breast Imaging team due to her meticulous attention to detail and her caring nature.
Hormone use before and after breast cancer diagnosis

Armando Farmini
Obstetrician gynecologist, Austria

The role of the hormones in the pathogenesis and prevention of relapse of breast cancer is well studied. Nevertheless there is sometimes confusion about the role of the human body, the so called bio identical hormones and that of the "synthetic" hormones. It is clear understood that giving non-human hormones can raise the risk of breast cancer, stimulating the growth of the cells.

Nowadays it is accepted that estradiol is a promoter of the growth of benign and malignant tumor cells. Women can for example develop mastopathy and mastalgia, which is a sign of disbalanced action of estradiol and increases the risk of breast cancer. On the other side we know that estriol can act on the same receptors of estradiol, reducing the proliferation of the breast cells. Progesterone can bind to the own receptors blocking the stimulating effect of estradiol.

Melatonin, such as thyroid hormones, can activate the natural killer cells, which are able to destroy tumor cells.

Biography

Armando Farmini is an Obstetrician gynecologist in Salzburg, Austria. He is a member of the IGGMED (International Society of Holistic Medicine, Vienna), DGGG (German Society for Gynecology and Obstetrics, Berlin), BIG Med (Bio Immune Gene Medicine) and the prestigious IHS (International Hormone Society, Brussels).
Evaluation of Thoracic manifestations in Sudanese patients with breast Cancer

Ayda Hussein Omer Mustafa
Alneelain University, Sudan

Background: Thoracic manifestations of breast cancer are most commonly related to metastases and can be observed in long time after the diagnosis of breast cancer.

Objectives: To evaluate the thoracic manifestations in Sudanese patients with breast cancer.

Methodology: This is a prospective descriptive cross-section hospital-based study, carried out during the period from January to September 2017 at private clinic of breast cancer of Dr. Ayda Hussein, Respiratory Department in Alshaab Teaching Hospital and Oncology Units at Alamel Tower, included all patients with breast cancer associated with thoracic abnormalities, which confirmed clinically and radiologically by chest X-ray and CT chest. The data was collected by questionnaire then analyzed by computer using SPSS.

Results: A total of 70 patients with breast cancer were evaluated clinically and radiologically, 68 (97.1%) were females and 2 (2.9%) were males, the mean age was (49.91 ± 18.26) years, 39 (55.07%) were from Khartoum and 31 (44.93%) patients from outside Khartoum State, 47 (67.1%) patients not smokers, the time interval between the diagnosis of primary breast cancer and detection of thoracic manifestations was found to be 1-3 years in half of the study population 35 (50.0%), and <1 year in 16 (22.9%) patients, while 4-6 years in 19 (27.1%) patients, 59 (84.3%) patients were with unilateral breast cancer, while, 11 (15.7%) patients were with bilateral breast cancer. The symptoms of thoracic manifestations, were SOB in 68(97.1%) cases, cough in 59 (84.3%) patients [38 (64.4%) productive cough and 21 (35.6%) dry cough], 29 (41.4%) patients had chest pain, fever, weight loss, and hemoptysis were 25 (36.2%), 24 (34.3%), and 11(15.7%) respectively. Thoracic manifestations of the breast cancer radio logically based on X-ray were pleural effusion in 39 (55.7%) patients, nodules in 26 (37.1%) patients, consolidation in 13 (18.6%) patients, Infiltration (lymphangities carcinomatosis) in 7 (10.0%) patients, Cavity in 6 (8.6%) patients and mass in 6 (8.6%), Reticulation in 1(1.4%) patients, while detection radiologically based on CT were pleural effusion was found in 39 (55.7%) patients, nodules in 26 (37.1%) patients, consolidation in 13 (18.6%) patients, pulmonary embolism in 7 (10.0%) patients, lymphangities carcinomatosis in 6 (8.6%) patients, mass in 5 (7.1%), Cavity in 4 (5.7%) patients and fibrosis in 3 (4.3%). Among patients with Pleural effusion, 19 (48.7%) developed right sided pleural effusion, 15 (38.5%) developed left sided pleural effusion, and 5 (12.8%) developed bilateral sided pleural effusion. There was statistically insignificant correlation between presences of nodule, pleural effusion and the side of breast cancer (P. value = 0.735, P. value = 0.735) respectively.

Conclusion: The thoracic manifestations in Sudanese patients with breast cancer were pleural effusion, metastases, pulmonary embolism, lymphangities carcinomatosis, masses, cavity and fibrosis. The most common thoracic manifestations detected clinically among the study population were shortness of breath, cough and chest pain. The most common thoracic manifestations detected radiologically among the study population were pleural effusion and metastases.

Biography

Ayda Mustafa is PhD student at Athens University Associate professor of surgery at Alneelain University. Used to Co-ordinate the program against breast cancer, at the Sudanese Ministry of health since2008 till now, and used to train medical students, medical officers and family Physicians on the methods of early detection of breast cancer since 2008 till now. Established Khartoum breast clinic 2005, Khartoum combined breast clinic 2008, and the Multidisciplinary breast clinic 2010 and worked as a director of the clinic.
Microtubule-associated protein ATIP3, a biomarker and therapeutic target in breast cancer

Clara Nahmias
Gustave Roussy Cancer Center, France

Breast cancer is a heterogeneous disease that is not totally eradicated by current therapies. The classification of breast tumors into distinct molecular subtypes by gene profiling and immunodetection of surrogate markers has proven useful for tumor prognosis and prediction of the response to hormonotherapy or HER2-targeted treatments.

The challenge now is to identify molecular biomarkers that may be of functional relevance for personalized therapy of breast tumors with poor outcome, in particular triple-negative breast tumors for which targeted treatments are not available.

Over the past few years our team has been focusing on ATIP3, a microtubule-associated protein encoded by candidate tumor suppressor gene MTUS1. We have shown that ATIP3 is markedly down-regulated in breast tumors of the triple-negative subtype and represents a prognostic biomarker for breast patient survival. Our studies revealed that ATIP3 stabilizes microtubules and decreases cell proliferation, polarity and migration. Its re-expression in breast cancer cells potently reduces tumor growth and metastasis in pre-clinical models, highlighting the importance of ATIP3 as a therapeutic target in breast cancer.

Our recent translational studies investigate the value of ATIP3 as a predictive biomarker of response to chemotherapy in breast cancer. Novel therapeutic strategies targeting ATIP3-deficient breast tumors of poor prognosis will also be discussed.

Biography

Clara Nahmias is a research director at CNRS and team leader at the Gustave Roussy Cancer Center (France). She completed her Ph.D at the Pasteur Institute and studied GPCR signaling pathways at the Institute Cochin. Her seminal work on angiotensin AT2 receptors led to the discovery of ATIP3, a microtubule-associated protein with tumor suppressor effects in breast cancer. She was awarded the CNRS bronze medal and the Pink Ribbon Award.
Lipid profile in breast cancer patients with hormonal therapy: A preliminary study

Denni Joko Purwanto
Dharmais National Cancer Hospital, Indonesia

Hormonal drugs have been widely used as adjuvant therapy to treat hormone receptor positive in breast cancer patients. Currently, there is a debate regarding whether hormonal therapy used in breast cancer has an impact on lipid profile and thus increase the risk of developing cardiovascular disease. The aim of this study is to review the lipid profile of breast cancer patients with hormonal therapy with different type of hormonal drugs. This research was preliminary study using a cross sectional design. We selected women who meet out eligible criteria. The data was collected from the patient’s routine blood test which include triglyceride, cholesterol total, low density lipoprotein, high density lipoprotein, APO A1, dan APO B. The lipid profile was examined twice, before and 8 weeks after consuming the drug. Data were analyze using dependent T test, statistically significant determine by Wilcoxon test (p<0, 05). A total 32 patients meet eligible criteria, but only 24 patients had complete data. Eight patients were unable to continue the study because the examination baseline was not appropriate (3 cases), did not want to take the study (2 cases), take medication irregularly (2 cases) and died during the observation period (1 case). There was no statistically significant difference between pre and post hormonal therapy (p value > 0, 05). However, there was an increased in almost all lipid profile, increased triglyceride experienced by 13 cases, high density lipoprotein 14 cases, APO B 17 cases, low density lipoprotein, total cholesterol and APO An experienced by 15 cases respectively. This study could not prove the hypothesis, but our finding may be useful for determine which patients should have and have not received hormonal therapy.

Keyword: Hormonal therapy, lipid profile, preliminary study, a cross sectional

Biography

Denni Joko Purwanto has completed his Doctoral Degree in 2016, from Universitas Indonesia. He is the director of Surgical Oncology Department at Dharmais Hospital, Jakarta. He has published papers in reputed journals and has been serving as an editor at Indonesian Journal of Cancer.
Patient Reported Cosmetic Outcome after Vacuum Assisted Excision of Benign Breast Lesions: A Cross-Sectional Study

E Voort
Franciscus Gasthuis & Vlietland, Netherlands

Introduction About 80% of all breast tumors are benign and can be excised through a vacuum assisted excision under local anesthetics. Although most studies imply that cosmetic outcome after VAE is superior to cosmetic outcome after surgical excision, hardly no studies on this subject are conducted.

Objective In this study we aimed to evaluate cosmetic outcome and the possible influencing factors after VAE for benign lesions.

Methods In this cross-sectional study all eligible patients who underwent VAE of a benign breast lesion between July 2017 and December 2018 were contacted to complete the Dutch BCTOS-13 questionnaire on cosmetic outcome. Cosmetic outcome was measured as a difference between the treated and the untreated breast and could vary from no difference (1) to a big difference (4). Socio-demographic, tumor-related and procedure-related characteristics were retrospectively collected from the electronic patient record. All possibly associated variables with cosmetic outcome were included in a WLS multivariate linear regression analysis and a binary multiple logistic regression analysis (after dichotomizing cosmetic outcome; good vs intermediate-poor).

Results A total of 68 tumors were treated with VAE. Mean age was 35.9 years, mean tumor size was 16.8 mm (max 51mm) and almost half of the tumors were fibroadenomas. No severe complications occurred during treatment. In total 47/65 (72%) patients completed the questionnaire on cosmetic outcome. Cronbach's alpha for internal consistency was good (0.73). Overall cosmetic outcome was good in 74% of patients (mean 1.5). The presence of follow-up complications was significantly associated with cosmetic outcome after WLS multivariate linear regression (F (4, 41) = 3.717, p=0.021, adjusted R2 = 0.195) and binary multiple regression analysis (χ2(3)=15.545, p < .01).

Conclusions VAE has a lot of advantages over surgical excision such as lower costs and less invasiveness. Overall cosmetic outcome was good and the presence of follow-up complications seem to have a negative effect on cosmetic outcome. Compared to literature VAE seems to have a better cosmetic outcome than surgical excision. A comparative study in which cosmetic outcome is compared between VAE and surgical excision is necessary to confirm these findings.

Biography

Elles van de Voort completed her medical degree at Maastricht University, the Netherlands. Currently she is working as a clinical researcher at Franciscus Gasthuis & Vlietland in Rotterdam where she is researching the minimal invasive treatment for breast lesions as part of her PhD trajectory.
Coping Strategies in Women with Breast Cancer

Jéssica López Peláez
Santiago de Cali University, Colombia

The diagnosis of cancer produces an emotional impact that transforms the different areas of the individual's life. Coping strategies facilitate the regulation of emotional responses and adaptation to stressful circumstances. The main aim of this research is identifying the coping strategies in women with breast cancer of the Associated Oncologists of Imbanaco in Cali, Colombia. This is a quantitative, descriptive and correlational study. The sample consisted of 20 patients with breast cancer, in stage I, II or III, in treatment, with an age range of 20 to 63 years. The Stress Coping Questionnaire for Oncological Patients (CAEPO) and an ad-hoc questionnaire were used as instruments.

It was found that a 60% of patients have positive coping (confronting and fighting/ self-control and emotional control), which indicates that women are faced in the search of a solution to improve the situation and adjust the emotional disequilibrium. Being a protector factor that allows acceptance and adherence to treatment, regarding the 70% additional the treatment have had surgical interventions due to cancer. The 20% had a non-define coping and the 20% had a preferably negative coping (negation and anxiety or anxious worrying).

This study contributes to the construction of knowledge about psycho-oncology and health psychology, also helps health professionals to have tools to help improve the quality of life of patients with breast cancer by promoting positive coping strategies.

Keywords: Coping strategies, oncology, breast cancer

Biography

Jéssica López Peláez is a Psychologist from the University of Andes, Colombia, with a Master’s degree in Cognitive Psychology from the University of Buenos Aires and a clinical residency in Surgical Psychoprofilaxis at the Durand Hospital in Buenos Aires. Experienced in clinic and health psychology. Research professor in Universidad Santiago de Cali with a huge trajectory in psycho-oncology, psycho-cardiology and palliative care.
First Experience with Preoperative Tattooing of Biopsied Axillary Lymph Nodes in Breast Cancer

Jiri Gatek
University Tomas Bata ve Zlin, Czech Republic

Introduction:
Evaluation of suspicious axillary nodes in newly diagnosed breast cancer is crucial for disease staging. Marking of the positive nodes is very important because these nodes have to be removed, especially after neoadjuvant chemotherapy. Marking is usually performed with different metallic clips and also could be tattooed with carbon suspension. Aim of this prospective study is to find out credibility of marking axillary lymph nodes with carbon.

Methods and patients:
Sentinel node biopsies are performed in Department of Surgery at EUC clinic in Zlin, Czech Republic from 1998. In 2016 we have started in cooperation with Radiology department marking of the suspicious axillary nodes with carbon. Suspicious axillary nodes are biopsied and mostly in same time the 1 ml carbon suspension is applied. During axillary surgery (sentinel node biopsy, axillary lymph node dissection), nodes with carbon are identified and removed.

Results:
Tattooing started at 2016 and up to date 21 women were operated. Conservative surgery was performed 18x and mastectomy 3x. Invasive ductal carcinoma was present in all cases. Subtypes: HER-2+ 4x, triple neg 7x, luminal B 9x, luminal A 1x. Primary surgery was done 6x and surgery after neoadjuvant chemotherapy 15x. Response according to Chevallier: one 6x, two 2x, three 6x and four 1x. All nodes with carbon were successfully found and removed. Solo SLNB was done 5x and SLNB followed by axillary dissection 12x. Primary axillary dissection were performed 4x. SLN with carbon were 13x, carbon outside SLN were 4x. After neoadjuvant chemotherapy SLN were negative and carbon positive 1x, and SLN positive and carbon negative with scar after chemotherapy 1x. Conversion from positive to negative axillary nodes after chemotherapy was identified 8x. We have had no complication with carbon.

Conclusion:
Tattooing with carbon is relatively easy and safe technique of marking positive axillary nodes. Procedure is exact and reliable. Great advantage is low price. This procedure could be used as alternative where is not possible to apply seeds, especially radioactive seeds.

Biography
George Gatek has completed his PhD at the age of 53 years from Masaryk University at Brno and postdoctoral studies from Medicine Faculty Masaryk University Brno. Associated professor at 2015 at Medicine Faculty Masaryk University Brno. He is the director of Surgery department EUC klinik in Brno. He has published more than 58 papers in reputed journals and has been serving as an editorial board member of repute Perspective in Surgery, Czech Republic. He is member of Czech Surgical Committee and he is working as treasurer. From 1999 he is member of linrenational Society of Surgery and Breast Surgery International.
Upright Digital Breast Tomosynthesis-guided Vacuum-assisted Breast Biopsy
Margaret Szabunio
University of Kentucky, USA

A newly emerging technology, digital breast tomosynthesis (DBT) or 3D mammography can reduce the masking effect of the breast tissue on mammography by creating multiple 2D imaging slices of the breast. Hence, it has been proven to have higher breast cancer detection rate compared with 2D mammography. DBT improves the detection of low contrast lesions such as uncalcified masses, asymmetries or architectural distortions. Moreover, DBT can decrease the summation artifact and has been shown to have less call back rates which help to avoid unnecessary additional evaluation.

Both retrospective and prospective studies have clearly shown that DBT can detect more breast cancer with lower call back rate compared to digital mammography. Since some of the suspicious breast lesions can only be visualized on the DBT, a new DBT guided vacuum-assisted biopsy (TVAB) is necessary to sample the breast lesions that are occult on both ultrasound and 2D mammography. TVAB has a better clinical performance compared to conventional SVAB because it can target not only the lesions detected on 2D mammography like SVAB but also the lesions only visualized on DBT. TVAB can replace stereotactic vacuum assisted biopsy (SVAB) in routine clinic practice with equivalent successful biopsy rate and less procedure time and less exposures.

Biography
Margaret M. Szabunio completed medical school at Drexel University College of Medicine (formerly Hahnemann University Medical School) in Philadelphia, followed by a radiology residency and fellowship at Long Island Jewish Medical Center in New York. Her clinical goal is early detection of breast cancer using new and emerging technologies, including elastography and tomosynthesis. She is board certified by the American Board of Radiology.
The breast cancer is the most common type of cancer among women and is the second leading cause of cancer death in the same group. Early detection is the key to increased survival and the prognosis is directly related to the stage of the disease at the time it is diagnosed. However, there is a misperception that young women are less susceptible to develop breast cancer, which usually leads to an early and late misdiagnosis.

Mammography is the established technique for breast cancer population screening and has shown a reduction in long-term mortality. Nevertheless, the limitations of mammography are well known and there are many factors that influence its diagnostic accuracy. The pattern of breast density is one of the most relevant factors, and dense breast tissue is usually associated with younger ages and pre-menopause, which may hide malignant lesions on the mammogram and limit the assessment of the true extent of the disease. In addition, overlapping normal breast structures may be pseudo lesions, resulting in a false positive result. There is ample evidence that mammography has less sensitivity in detecting breast cancer in women aged 40 and 49 years, and / or with an extremely heterogeneous breast tissue density, thus limiting its applicability in this study group.

The association between increased breast density and breast cancer risk leads to the possibility of further risk stratification and the development of new breast cancer screening strategies.

Breast MRI is now one of the central methods for the diagnosis of mammary diseases. It produces images by means of the tissue-emitted response to energy changes resulting from the decay of the proton’s precession movement in fat and water tissues. These differences result from the application of variable magnetic fields. It may differentiate breast lesions and changes; however, intravenous administration of gadolinium-containing contrast media is required, where sequences are usually T1-weighted 3D (with or without fat signal saturation).

However, as a screening technique, MRI is limited to women at high risk of developing breast cancer because of its high cost, low specificity, and insufficient evidence of its use in the intermediate or less risk population. According to the American Cancer Society (ACS), the criteria used for this stratification are defined as: Women at high risk of developing breast cancer are characterized by known or suspected mutations in the BRAC1 or BRAC2 gene; history of thoracic irradiation between 10 and 30 years of age; genetic syndromes associated with breast cancer or a risk greater than or equal to 20-25% of developing breast cancer over a lifetime; and women at intermediate risk are characterized by a 15-20% risk of developing life-long breast cancer or a personal history of invasive / in situ carcinoma, lobular neoplasia or atypical hyperplasia, and women with heterogeneously or extremely breast tissue. Predictive models may be used to calculate risk stratification, including the BRCApro model, the Gail model, the Tyrer-Cuzick model and the Claus model, each of which is based on personal history variables or family member of breast cancer.

The role of contrast-enhanced magnetic resonance imaging (MRI) is crucial for enhancing the effectiveness of breast cancer detection in younger patients and consequently with denser breast tissue. Also with the emergence of new techniques within magnetic resonance imaging, the effectiveness of detection Breast cancer can be improved. Notably the introduction of fast sequences and abbreviated protocols, the diffusion imaging technique and other types of contrast are promising, increasing the specificity of this imaging modality.

Unlike other countries, evaluating the relative statistical data from 2015 compared to 2017, the standardized female breast cancer mortality rate per 100,000 women increased from 18.2% and 19.2%, respectively, in Portugal. In 2017, the number of deaths under 65 years old was 629 women and the standardized rates under 65 years old per 100,000 women was 11.7%. In this sense, the objectives of this talk are to explore the new developments in the technique of...
breast magnetic resonance imaging compared to breast cancer mammography in women under the age of 59 so that it can be considered a screening modality, notably with the introduction of shortened protocols and new means of screening contrast.

Thus this presentation will address and explain the evaluation of the usefulness of breast MRI as a complementary technique in women at medium risk of developing breast cancer, the comparison between the diagnostic efficacy using a shortened breast MRI protocol and a full breast MRI protocol, exploring the difference in human brain deposition between linear and macrocyclic GBACs; make the evaluation of DWI's performance, and its algorithms models in detecting mammographically occult breast cancer in women with dense breasts; assess the impact of b values on the specificity and sensitivity of the diffusion technique on MRI overall in the detectability of non-palpable breast tumors in asymptomatic women by mammography, DCE-MRI and MRI without contrast, using T2-weighted images and diffusion and finally verify optimal size of ES-MIONs as contrast agent at T1 image weighting.

Many new breast imaging tools have improved and are being developed to improve the diagnostic in early-stage breast cancer. In the one hand occurred advances in current techniques, like contrast-enhanced mammography digital breast tomosynthesis and ultrasound with elastography or micro bubbles. In the order hand includes new breast imaging platforms such as breast computed tomography (CT) scanning and radionuclide breast imaging; radiation protection system. There are many advances; however, in this era of cost and radiation containment, it is imperative to look at all of them objectively to see which will provide clinically relevant additional information.

**Biography**

Maria Margarida was PhD in Life Sciences, specialization in Clinical Medicine; Expert of merit in Radiology; Master’s degree in Health Management; Graduated in Radiography; Coordinator and member of many projects in the field of Magnetic Resonance Imaging applied to Breast and Brain; Regent of Anatomy and Breast Imaging of post-graduate studies in Medical Imaging and in Biomedical Engineering. Member of Institutional Scientific Council; Vice –President of Portuguese Society of Medical Devices; Coordinator of Applied Radiation to Health Technologies master programme. Branch of Magnetic Resonance Imaging; Council member of the board of biomedical engineering Master Programme. Many speeches and papers in Breast/ Breast MRI; Last speech in the European Congress of Radiology (2019) entitled “Breast imaging in young females: the role of MRI”
Correlation between apparent diffusion coefficient values in breast magnetic resonance imaging and prognostic factors of breast invasive ductal carcinoma

Ricardo Moutinho-Guilherme
Quirónsalud University Hospital Madrid, Spain

Background: We wanted to examine whether the apparent diffusion coefficient values obtained by diffusion-weighted imaging techniques could indicate an early prognostic assessment for patients with Invasive Ductal Carcinoma and, therefore, influence the treatment decision making.

Objective: The main objective was to evaluate the correlation between the apparent diffusion coefficient values obtained by diffusion-weighted imaging and the key prognostic factors in breast invasive ductal carcinoma. Secondary objectives were to analyze the eventual correlations between magnetic resonance imaging findings and prognostic factors in breast cancer; and to perform a comparison between results in 1.5 and 3.0 T scanners.

Methods: Breast magnetic resonance imaging with diffusion-weighted imaging sequence was performed on 100 patients, who were proven histopathologically to have breast invasive ductal carcinoma. We compared the apparent diffusion coefficient values, obtained previous to biopsy, with the main prognostic factors in breast cancer: tumor size, histologic grade, hormonal receptors, Ki67 index, human epidermal growth factor receptor type 2, and axillary lymph node status. The Mann-Whitney U test and the Kruskal-Wallis analysis were used to establish these correlations.

Results: The mean apparent diffusion coefficient value was inferior in the estrogen receptor-positive group than in the estrogen receptor-negative group (1.04 vs 1.1710–3mm2/s, P=.004). Higher histologic grade related to larger tumor size (P=.002). We found association between spiculated margins and positive axillary lymph node status [odds ratio=4.35 (1.49–12.71)]. There were no differences in apparent diffusion coefficient measurements between 1.5 and 3.0T magnetic resonance imaging scanners (P=.513).

Conclusions: Low apparent diffusion coefficient values are related with positive expression of estrogen receptor. Larger tumors and spiculated margins are associated to worse prognosis. Rim enhancement is more frequently observed in estrogen receptor-negative tumors. There are no differences in apparent diffusion coefficient measurements between different magnetic resonance imaging scanners.

Keywords: breast ductal carcinoma, breast neoplasms, diffusion magnetic resonance imaging, magnetic resonance imaging

Biography

Ricardo is a Portuguese resident Medical Doctor at Hospital do Barlavento Algarvio in Portimão, Portugal. Studied Pharmaceutical Sciences in the Faculty of Pharmacy (Porto University) in Portugal. Graduated in Medicine by the Universidad Europea de Madrid in Spain. During his internship, he joined the Clinical Radiology Department in the Hospital Universitario Quirónsalud Madrid, Spain, where he developed great interest in breast pathology, namely diagnosis and treatment for breast cancer.

He published his work about the “Correlation between Apparent Diffusion Coefficient Values in Breast Magnetic Resonance Imaging and Prognostic Factors of Breast Invasive Ductal Carcinoma” under the supervision of Dr. Vicente Vega Martínez, Head of the Clinical Radiology Department. Article published on July 2018 in the “Porto Biomedical Journal”. Received the CIMQ17 1st prize award on best investigation work, by the Faculty of Medicine of Compostela University in Santiago de Compostela, Spain. He has a major Research interest, taking part on several projects on Molecular Research and Cancer Diagnosis and Treatment. Reviewer for several peer-reviewed journals, both national and internationally.
The Prophylactic Use of Hilotherapy (Physical Thermotherapy) Prevents Chemotherapy-Induced-Peripheral Neuropathy (Cipn)

Schaper Trudi
Department Senology, Luisenkrankenhaus Düsseldorf, Germany

Introduction: Chemotherapy-induced peripheral neuropathy (CIPN) is an adverse effect of many commonly used chemotherapeutic agents, especially taxane-based regimen (Paclitaxel, nab-Paclitaxel, Docetaxel). The CIPN reduces patients health-related quality of life for years and often results in dose delay, dose reduction or treatment discontinuation. Therefore avoiding CIPN can support patients medical outcome. The prophylactic use of Hilotherapy® prevents chemotherapy-induced-peripheral neuropathy (CIPN).

Method: 135 breast cancer patients treated with taxane based therapeutic regimen used prophylactic Hilotherapy® to cool hands and feet during chemotherapy infusion between 10/2016 – 02/2019. Hilotherapy® is a new physical thermotherapy device, equiped with hand and foot cuffs to allow a constant cooling in a localized and targeted manner. Continuous cooling of hands and feet was performed 30 minutes before to 60 minutes after completing drug infusion with a temperature of 10-12°C.

CIPN symptoms were evaluated after each treatment cycle using common terminology criteria for adverse events (CTCAE).

The sustainability of the impact was assessed by long-term datas (Follow Up patient contact every 3 months).

Results: 108 patients have finished their chemotherapy treatments with prophylactic hand-foot cooling using Hilotherapy®, 27 patients are still under therapy. 100 patients (92.5%) developed none or mild symptoms of CIPN (grade 0-1).

7 patients (6.5%) reported grade 2 toxicity and 1 patient grade 3 toxicity (Gain2 study participation with dose-dense chemotherapy treatment). The symptoms of CIPN were reversible. Four weeks after the last chemotherapy treatment, 4 patients still reported grade 2 toxicity but none of them suffered from grade 3. Another 3 months later (Follow Up 1), only one patient still reported an intermittent grade 2 symptoms. Long-term Follow Up datas confirm the lasting results.

Conclusion: Prophylactic Hilotherapy® prevented limiting CIPN Symptoms (> grade 1) in 93% of patients.

7% of the patients developed reversible, short-lasting symptoms (grade 2/3). 4 months after chemotherapy treatment, all patients were without any limiting symptoms (grade ≤ 1), except one patient (grade 2 toxicity after dose-dense chemotherapy treatment). No dose modifications or treatment interruptions had been necessary. Longest Follow Up last two years so far.

Biography

Schaper Trudi studied her University degree in 1991-1996 at the Heinrich-Heine University. During 1997, she finished her First examination Sec I / II in Biology, Education and Pedagogy. During 1998 – 2004, schaper was Honorary Lecturer in the Diakonie Duesseldorf Kaiserswerth, Alten-/Krankenpflegeschule. During 1998 – 2003, she studies PhD at the Heinrich-Heine University in Düsseldorf with distinction "summa cum laude" (Botany I) Title of the thesis: "Complex patterns of interaction and the dynamics of development processes in lichen ecosystems" Employment as a research assistant including teaching and research (funded by DFG) During 2004–2005, she was a Post doc: research associate at the Heinrich-Heine University, Department of Botany I, with teaching activities in collaboration with the AGO and the German International Medical Center in 2016, she was scientific advisor of European Academy of Senology.
Isolated Thoracic Perfusion in Lung Metastases from Breast Cancer

Stefano Guadagni
University of L'Aquila, Italy

**Introduction:** The median overall survival of metastatic breast cancer (MBC) patients is still approximately 2 years. This is even lower in triple-negative breast cancer (TNBC) patients with concomitant lung metastases. These patients are often not suitable for surgery and not responsive to systemic chemotherapy. Isolated thoracic perfusion (ITP) followed by chemo filtration has been used for palliation in selected specialized centers.

**Methods:** A retrospective observational study evaluating 162 MBC patients who underwent 407 ITP procedures was performed. The primary objective was the evaluation of the feasibility, safety, tolerability and efficacy of ITP in the complete cohort of 162 patients with LM from breast cancer. The secondary objective of the study was the evaluation of responses and median survivals in 43 TNBC patients with LM.

**Results:** In the 162 patients, ITP appeared safe and well tolerated with MST from LM diagnosis to death or last contact of 19.5 months. In the subgroup of patients treated with systemic chemotherapy followed by ITP at progression, the MST from LM diagnosis to death or last contact was 29 months. In the subgroup of TNBC patients treated with systemic chemotherapy followed by ITP at progression, the MST from LM diagnosis to death or last contact was 19 months (ITP overall response rate was 65.52%).

**Conclusions:** ITP followed by chemo filtration could be adopted in the sequential palliation treatments of BC patients with LM in progression after systemic chemotherapy, especially with TNBC. The present data allow interesting considerations about tolerability and responses, but do not allow robust conclusions about survival.

**Biography**

Stefano Guadagni was born in 1955 and is Associate Professor of Surgery at University of L'Aquila, Italy. He has published more than 170 original articles in reputed journals and is serving as an editorial board member of two Journals indexed by Scopus: BMC Research Notes and World Journal Surgical Oncology.
Therapy Related AML in Breast Cancer: Case Series

Swarnbindu Banerjee
Kolkata Medical College, India

Introduction: The survival rates of breast cancer have increased due to improved chemotherapy & newer radiation techniques & guidelines based on diagnostic tumor characteristics. Secondary leukemia after treatment of Ca Breast is a definite yet rare entity with incidence rates well documented (0.41%). Chemotherapy related acute leukemia is secondary to treatment related translocation errors mainly due to alkylating agents & anthracyclines. Recent studies have linked secondary leukaemiagenesis to older age, dosages of drugs, radiation therapy and usage of G-CSF. Secondary leukaemias secondary to alkylating agents usually manifest after 5-7 yrs associated with chromosomes 5 & 7 abnormalities, background MDS & are of poor prognosis. Myeloid leukaemias that are associated with a topoisoerase II reactive drug typically occur within 5 years of therapy, are not associated with MDS, and are frequently associated with a 11q23 cytogenetic abnormality.

Case Description: The data is collected from OPD follow up between 2010-2015 & are depicted using descriptive statistics. The patients having abnormalities in CBC & manual differential were asked to undergo bone marrow aspiration & biopsy & were subsequently offered treatment according to feasibility. No. of patients =7, median age of presentation = 47yrs, median interval between treatment of breast cancer & diagnosis of acute leukemia=17mons. Tumour stage T2 in all of them (100%), lymphnodal status: majority N0 (4cases=57%) & N1,N2,N3 1each. None of them were metastatic. As neo-adjuvant /adjuvant all of them received anthracycline & alkylating agent (100%) while 2of them additionally received taxane (28%).3 of them received radiation. Among the 7patients 4 developed AML (57%), 2developed APML(28%), 1 MDS(14%). At presentation regarding symptomatology 7 patients (100%) had fatigue, 1 had sore throat, (14%), 6 patients (85%) had thrombocytopenia, 5 patients had leucopenia (72%), 2 had leukocytosis (28%), 2 had circulating blasts in peripheral blood. Marrow cytogenetics showed t(15,17) in 2cases(28%), 1 case (15%) had t(8,21) & del5q, MDS case had del5q &del7q. 1 case(15%) showed complex cytogenetics, 2 cases (28%) showed indeterminate cytogenetics. 4 patients (57%) took treatment, 3 patients (42%) was refd for supportive care. Median survival =1yr 8mon

Conclusions: Though the no. of cases are too small to taste any statistical significance but clinicopathologically almost all are secondary to anthracyclines & median survival is longer (1yr vs 8mon) compared to other series.

Biography
Swarnabindu Banerjee was a medical graduate (Mbbs) in 1997, Calcutta University and Gold Medal in Medical Jurisprudence, Diplomate in Tropical Medicine, 2001, Calcutta University. Diplomate in Chest Medicine & Tubercular Diseases, 2003, Calcutta University, Undergone Fob Training For 1 Yr and during Diplomate in Chest Medicine & Tubercular Diseases. He has done Post Graduate in Medicine I.E Md (Medicine), Wbuh, 2009 and Post-Doctoral In Medical Oncology I.E Dm (Medical Oncology), 2015. Tata Memorial Hospital, Mumbai. Working Experience: 6 Yrs of Medical Oncology Training Of Which 3yrs as Resident Medical Officer Cum Clinical Tutor In Medical College Hospital Now Promoted To Asstt. Prof. & 3yrs As Dm Resident Tmh Mumbai. Worked In Rural Areas For 3 Yrs As Primary Care Physician In Govt. Service,(2003-2006) and Working For 6yrs In The Dept. Of Medical & Pediatrics Oncology In Medical College, Kolkata.
Macroscopic Examination Breast Density versus Mammographic Breast Density in Breast Cancer Conserving Surgery and Its Outcomes - Post Hoc Analysis from a Randomized Clinical Trial

Yedda Nunes Reis
Sao Paulo State Cancer Institute, Brazil

Introduction: High Mammographic Breast Density (MD) is associated with risk of breast cancer and lowers sensitivity for detection of breast tumors. Recognizing high MD may lead to different approaches on breast cancer screening. Breast MRI is well established for screening in high risk patients for breast cancer, but in the context of breast conserving surgery controversy still exists as to whether preoperative staging with breast MRI has an impact on surgical outcomes.

The purpose of this study is to correlate MD and Macroscopic Examination Breast Density (MEBD) in candidates for breast conserving surgery and its outcomes on surgical and clinical features.

Methods: Post hoc analysis from Brazilian Randomized Study Impact of Preoperative Magnetic Resonance in the evaluation of breast cancer conservative surgery - BREAST-MRI trial database. It was a randomized, open label, unblinded trial performed at Instituto do Câncer do Estado de São Paulo (ICESP), Brazil, from November 2014 to October 2018. Biopsy-proven invasive breast cancer or ductal carcinoma in situ (DCIS) women patients 18 years old and older, after triple assessment (physical exam, mammography and ultrasound) were selected to breast conserving surgery. Candidates were stratified for MD according to ACR BI-RADS® (A, B, C or D) and then randomized on 1:1 basis to either MRI or control group. Surgery was modified to Wide Breast Conserving Surgery (WBCS) OR Mastectomy when MRI showed tumor 50% larger than originally assessed by other methods.

Surgical changes were made in the ipsilateral breast in 49 cases (72.1%), in the contralateral breast in 13 cases (19.1%), and in both breasts in 6 patients (8.8%). Groups showed balanced distribution of MD and MEBD, but no correspondence was found comparing MD with MEBD in the breast surgical specimens (p < 0.001). MRI appropriately modified the surgical procedure in 44 of 55 patients (80%) for ipsilateral breast and 10 of 19 patients (52.6%) for contralateral breast. Neither MD (p = 0.77) nor MEBD (p = 0.274) were associated with modifications in the surgical strategy. There was no difference in the accuracy rate of MRI according to the MD (p = 0.74) or MEBD (p = 0.25).

Conclusion: Our study shows that MEBD does not hold a close correlation with MD, which is routinely use. However, neither MEBD nor MD were correlated with the accuracy of Breast MRI in modifying the surgical strategy. Additional studies with adequate methods for evaluation of mammary density might be useful to select properly patients with breast cancer for preoperative staging breast MRI.

Biography

Yedda Nunes is a Medical student at the Botucatu Medical School in 2011, Medical Residency in Gynecology and Obstetrics at the Medical School of the University of São Paulo in 2015 and Medical Residency in Mastology at the Medical School of the University of São Paulo. Specialist Degree in Gynecology and Obstetrics and Specialist Degree in Mastology Yedda Nunes Reis serves the city of São Paulo, focusing on Gynecology and Obstetrics and Member of the Brazilian Society of Mastology.
What is new in the management of the axilla after neoadjuvant chemotherapy?

Zorka Inic
University of Belgrade School of Medicine, Serbia

Historically, patients who were considered for neoadjuvant chemotherapy underwent sentinel lymph node biopsy as a separate procedure prior to the start of systemic treatment. The reasons for this were to stage the axilla before chemotherapy to know the 'true' nodal status and to determine whether complete axillary dissection was needed after chemotherapy at the time of definitive surgery. More recently, however, several studies have demonstrated that patients with a clinically negative axilla at presentation can be staged with sentinel lymph node biopsy after systemic treatment. A more controversial topic is whether patients who convert from node-positive to node-negative after chemotherapy may be able to avoid axillary dissection without increase in risk of recurrence.

The use of NAT may eradicate lymph node disease in up to 40% of node positive breast cancer patients. SNB can be offered to patients before or after NAT, but the timing of SLNB is under debate. Several large prospective randomised trials have been undertaken to address questions regarding the successful identification of sentinel lymph nodes after chemotherapy, the false-negative rate and long-term outcomes for these patients.

A recent addition to the management of the involved axilla, post neoadjuvant chemotherapy is the targeted axillary surgery pioneered at the MD Anderson Cancer Centre. By performing SNB together with removal of the node clipped and diagnosis, the false-negative rate falls to below 5%. The status of the axillary lymph nodes remains the key prognostic factor and further investigation will show when we can omit the axillary treatment.

Biography

For the past ten years, Dr Zorka Inic worked at the Institute of Oncology and Radiology of Serbia, in Belgrade. She is general surgeon and clinical assistant of Surgery in University of Belgrade School of Medicine. She finished doctoral studies in 2015 with doctoral dissertation: “An immunohistochemical investigation into the neovascularisation and proliferative activities of parathyroid tumours”. She is also author and co-author of a number of papers of cancer and oncology which have been published in internationally respected journals. She participated in a lot of congress where she had oral presentation and accepted paper.
Secondary (Reactive) Hilotherapy® Relieves Symptoms of Chemotherapy-Induced Peripheral Neuropathy (Cipn) and Prevents Progression During Chemotherapy

Schaper Trudi
Department Senology, Luisenkrankenhaus Düsseldorf, Germany

**Introduction:** Chemotherapy-induced peripheral neuropathy (CIPN) is an adverse effect of many commonly used chemotherapeutic agents, especially taxane-based therapeutic regimen (Paclitaxel, nab-Paclitaxel, Docetaxel). Without any prophylactic cryotherapy, 91% of our patients receiving a taxan-based chemotherapy developed symptoms of CIPN. The use of the secondary, reactive Hilotherapy® prevented progression - existing symptoms of CIPN have been improved.

**Method:** 41 patients with symptoms of CIPN used for all following taxan-based chemotherapy treatments the "secondary" (reactive) Hilotherapy®. The Hilotherapy® is a new physical thermotherapy device, equipped with hand and foot cuffs to allow a constant cooling in a localized and targeted manner. Continuous cooling of hands and feet were performed 30 minutes before to 60 minutes after completing drug infusion with a temperature of 10-12°C. CIPN symptoms were evaluated after each treatment cycle using common terminology criteria for adverse events (CTCAE). The sustainability of the impact was assessed by long-term datas (FollowUp patient contact every 3 months, longest Follow Up last two years).

**Results:** 45 patients started their taxane-based chemotherapy first without any prophylactic cooling of hands and feet. 41 patients (91%) developed symptoms of CIPN (grade 1-3): 18 patients (44%) showed grade 2-3 toxicities, 23 patients (56%) grade 1. The use of reactive Hilotherapy® for all following chemotherapy cycles, improved CIPN. On day of last drug infusion, 13 patients (31,7%) have been recovered of all symptoms of CIPN (grade 0), 8 patients (19,5%) reported grade 2 and 1 patient showed grade 3 toxicity. Long-term datas confirm the continuous improvement: 3 months after completion of last chemotherapy cycle (Follow Up 1), no grade 3 toxicities have been reported, 29 patients described none or mild symptoms of CIPN (grade 0-1).

**Conclusion:** Secondary (reactive) Hilotherapy® (cooling of hands and feet after onset of first symptoms of CIPN) prevented the progression and showed a therapeutic effect by relieving already existing symptoms. All patients could finish their chemotherapy without any dose delay, dose reductions or treatment discontinuation.

**Biography**

Schaper Trudi studied her University degree in 1991-1996 at the Heinrich-Heine University. During 1997, she finished her First examination Sec I / II in Biology, Education and Pedagogy. During 1998 – 2004, schaper was Honorary Lecturer in the Diakonie Duesseldorf Kaiserswerth, Alten-/ Krankenpfiegenschule. During 1998 – 2003, she studies PhD at the Heinrich-Heine University in Düsseldorf with distinction "summa cum laude" (Botany I) Title of the thesis: “Complex patterns of interaction and the dynamics of development processes in lichen ecosystems” Employment as a research assistant including teaching and research (funded by DFG) During 2004 –2005, she was a Post doc: research associate at the Heinrich-Heine University, Department of Botany I, with teaching activities in collaboration with the AGO and the German International Medical Center, In 2016, she was scientific advisor of European Academy of Senology

During 2004 –2005, she was a Post doc: research associate at the Heinrich-Heine University, Department of Botany I, with teaching activities (including management of various student courses, supervision of master and doctoral students, scientific project work. During 2005 to present, Schaper held Development and management of the clinical trial department, Brustzentrum Düsseldorf Luisenkrankenhaus
Negative progesterone receptor identifies subgroups at higher risk of recurrence for Luminal B (HER2-) and Luminal B (HER2+) breast cancer

Toshiaki Utsumi
Fujita Health University, Japan

**Purpose:** The aim of this study was to evaluate impact of progesterone receptor (PgR) on outcomes among patients with luminal B (human epidermal growth factor receptor 2 (HER2)-) (estrogen receptor (ER)+, PgR+ or -, HER2-, and Ki-67 high) or luminal B (HER2+) (ER+, PgR+ or -, and HER2+) breast cancer.

**Methods:** A retrospective review was conducted. Survival analysis was performed to estimate the likelihood of distant metastasis and death of 469 patients. ER, PgR, and Ki-67 were assessed by immunohistochemistry. The threshold for ER and PgR positivity was 1%. HER2 status was assessed by HERCEP test or FISH. Being 3+ on HERCEP test or amplification on FISH, it was defined as positive. The Ki-67 labeling index was categorized as low (<14%) or high (≥14%).

**Results:** Luminal B (HER2-) cancers were significantly more often PgR+ than luminal B (HER2+) cancers (PgR+, 86.3% vs. 61.0%; P<0.001). Distant metastasis-free survival and overall survival is shown in Table1.

**Conclusions:** The absence of PgR in luminal B breast cancer was at higher risk for distant metastasis and death.

**Biography**

Dr. Toshiaki Utsumi is Professor of Breast Surgery at Fujita Health University School of Medicine. Dr. Utsumi has been extensively involved in both translational research as well as in clinical research on breast cancer treatment. A notable area of Dr. Utsumi’s focus has been related to the intracrinology of breast cancer. He received his PhD from Keio University.
Study of microRNAs-21/221 as potential breast cancer biomarkers in Egyptian women

Nermin Abdel Hamid Sadik Ibrahim
Cairo University, Egypt

MicroRNAs (miRNAs) play an important role in cancer prognosis. They are small molecules, approximately 17–25 nucleotides in length, and their high stability in human serum supports their use as novel diagnostic biomarkers of cancer and other pathological conditions. In this study, we analyzed the expression patterns of miR-21 and miR-221 in the serum from a total of 100 Egyptian female subjects with breast cancer, fibro adenoma, and healthy control subjects. Using microarray-based expression profiling followed by real-time polymerase chain reaction validation, we compared the levels of the two circulating miRNAs in the serum of patients with breast cancer (n=50), fibro adenoma (n=25), and healthy controls (n=25). The miRNA SNORD68 was chosen as the housekeeping endogenous control. We found that the serum levels of miR-21 and miR-221 were significantly overexpressed in breast cancer patients compared to normal controls and fibro adenoma patients.

Receiver Operating Characteristic (ROC) curve analysis revealed that miR-21 has greater potential in discriminating between breast cancer patients and the control group, while miR-221 has greater potential in discriminating between breast cancer and fibro adenoma patients. Classification models using k-Nearest Neighbor (kNN), Naïve Bayes (NB), and Random Forests (RF) were developed using expression levels of both miR-21 and miR-221. Best classification performance was achieved by NB Classification models, reaching 91% of correct classification. Furthermore, relative miR-221 expression was associated with histological tumor grades.

Therefore, it may be concluded that both miR-21 and miR-221 can be used to differentiate between breast cancer patients and healthy controls, but that the diagnostic accuracy of serum miR-21 is superior to miR-221 for breast cancer prediction. MiR-221 has more diagnostic power in discriminating between breast cancer and fibro adenoma patients. The overexpression of miR-221 has been associated with the breast cancer grade. We also demonstrated that the combined expression of miR-21 and miR-221 can be successfully applied as breast cancer biomarkers.

Keywords: MiRNA, miR-21, miR-221, Breast cancer Fibro adenoma

Biography

Nermin Abdel Hamid Sadik Ibrahim has joined the Biochemistry Department in a permanent full time job since 1990 as demonstrator, lecturer (2004), Associate Professor (2009) and then Professor since May 2014. Nermin has published more than 40 papers in reputed journals https://www.ncbi.nlm.nih.gov/pubmed/?term=sadik+na and has been serving as a reviewer for many journals.
Association between SIRT1 gene rs3758391, rs3740051 and rs12778366 polymorphisms and breast cancer risk in Egyptians

Sherine Maher Rizk Abdelaziz
Cairo University, Egypt

Silent mating-type information regulator 2 homolog 1 (SIRT1) gene expression have been reported to be associated with breast cancer. However, no studies exist on the role of SIRT1 gene polymorphism in breast cancer risk or prognosis. The present study aimed to assess the association between SIRT1 gene polymorphisms and breast cancer in Egyptians. Breast cancer patients exhibited elevated serum SIRT1 levels which varied among different tumor grades. SIRT1 rs3758391 and rs12778366 TT genotypes were more frequent, exhibited higher SIRT1 levels than CC and CT genotypes and were associated with histologic grade and lymph node status. SIRT1 rs12778366 TT genotype also correlated with negative estrogen receptor (ER) and progesterone receptor (PR) statuses. The T allele frequency for both SNPs was higher in breast cancer patients than in normal subjects. Combined GG and AG genotypes of rs3740051 were more frequent, showed higher serum SIRT1 levels than the AA genotype, and were associated with ER and PR expression. Furthermore, inheritance of the G allele was associated with breast cancer. In conclusion, rs3758391 and rs12778366 polymorphisms of SIRT1 gene are associated with breast cancer risk and prognosis in the Egyptian population.

Biography

Sherine Maher Rizk Abdelaziz has joined the Biochemistry Department in a permanent full time job since 1992 as demonstrator, Lecturer (2004) and then Associate Professor (2011) and then Professor since 2016. Sherine has published more than 25 papers in reputed journals and has been serving as a reviewer of repute.
ACCEPTED Abstracts

Global Conference on
BREAST CANCER RESEARCH
September 02-03, 2019
Rome, Italy

CBCR-ROME 2019
Current controversies in screening mammography

Adil Mohammed Aljarrah Al-Ajmi
Sultan Qaboos University Hospital, Sultanate of Oman

Breast cancer mortality is declining in most high-income countries which is attributed to screening mammogram, which is very controversial and debatable role. The main benefit of mammography screening is reduction of breast-cancer related death. Relative reductions vary from about 15 to 25% in randomized trials to more recent estimates of 13 to 17% in meta-analyses of observational studies.

Screening improves survival through decreasing the incidence of number of advanced cancers, on the other hand, treatment modalities and patient management reduces mortality by decreasing the fatality of cancers. The aim and objective of cancer screening is the ability of a screening to reduce the incidence of advanced cancers in screened populations. The incidence rates of advanced cancers that should decrease after the introduction of screening in the same population.

Cancer-specific mortality rates should decline more in areas with screening compared to areas without screening but where patient management is similar. These two criteria have provided evidence that screening for colorectal and cervical cancer contributes to decreasing the mortality associated with these two cancers.

It’s noticed from different statistical analysis, that in populations where mammography screening has been used for a long time, there has been no decline in the incidence of advanced cancers. Moreover, breast cancer overall survival are similar in areas with early introduction and widely used of screening and in areas with late introduction and low compliance.

Over diagnosis of breast cancer is the main harm of mammography screening. Based on recent estimates from the United States, the relative amount of over diagnosis (including ductal carcinoma in situ and invasive cancer) is 31%.

Over diagnosis from screening, representing almost 20% of all breast cancers among screened women. Over diagnosis leads to overtreatment and negative social and economic impact. On the other hand, the rate of radical mastectomies has not decreased following the introduction of screening or increasing inother countries (UAS). Hence, the epidemiological picture of mammography screening does not closely resembles that of screening for cervix and colon cancers.

In the Swedish mammography trials they have overestimated reductions in breast cancer mortality associated with screening, in part because of the statistical analyses themselves, and the role of improved therapies, Swedish trials should correlate the survival with the stage of breast cancer.

The long follow-up, the United Kingdom (UK) Age Trial showed no benefit from mammography screening starting at age 39-41.

Women should be informed about the cons and pros of mammography screening using absolute effect sizes in a comprehensible way. In economical constrains of many nations, screening need to be studied carefully and compared and to assess the feasibility of screening mammograms.

Keywords: mammogram screening, breast cancer, overdiagnosis, overtreating, 5 year overall survival
Breast cancer disparities between Eastern and Western countries

Adil Mohammed Aljarrah Al-Ajmi
Sultan Qaboos University Hospital, Sultanate of Oman

Breast cancer is the highest cancer incidence worldwide, the incidence and prevalence is more in western countries compared to eastern countries, nevertheless, the incidence is increasing more rapidly in the East, with industrialization and urban development, delayed child births and reduced fertility, westernisation of life styles and increasing life expectancy among women.

Different papers and studies from Asian, African and Western countries showed that there is a epidemiologic and clinical outcome disparities of breast cancer between west and east, some differences cannot be ignored and left without further research and investigation, the mean age of incidence of breast cancer is between 45-50 years in the Asian and African, whereas its between 60-65 years in Western countries, the stage at time of diagnosis is different too, majority are of early stages in the west, on the other hand more than 80% are of locally advanced breast cancer in the Asian and African countries, the aggressiveness and the biological features of breast cancer (grades and Ki67 proliferations) are different, the immunohistochemistry (estrogen receptor, progesterone receptors and Her2 status) is different too.

The overall survival for 5 years of breast cancer patients in the western countries is 85%, on the other hand its only 50% in eastern countries. This significant disparity is multi factorials, environmental, alimentation and due to massive research effort in the west, free dissemination of knowledge Know How to handle this disease after almost a century of experience. More collaboration between east and west is needed and prospective data collection from Asian, African and Western countries may provide further interesting epidemiologic and outcome data regarding the outcome of women with breast cancer.

**Keys Words:** Breast carcinoma- western-Eastern countries- biological features- mean age of incidence- grades- estrogen receptors status, progesterone receptors status, Her2 status, 5 year overall survival
Fuzzy neutral networks for the identification of breast cancer using shape and texture features

Abdulkader Helwan
Near East University/Biomedical Engineering Department, Turkey

Breast cancer is still one of the major medical images diagnosis dilemmas. The rise of artificial intelligence and fuzzy logic motivated researchers to overcome this problem in order to find a method that can help in identifying this cancer. In this thesis, we propose the integration of fuzzy logic and neural network in a way that helps in the identification of breast cancer X-ray images.

The three phases taken to come up with this design are: image pre-processing, features extraction, and finally features classification using FNN. First, the images are processed using image processing methods used to enhance the images quality and made it easy to segment the tumor. After segmentation, texture and shape features are extracted from the segmented tumor. Those seven features are thought that distinguish the malignancy of the breast tumor. The classification stage is a fuzzy neural network that aims to classify those extracted features in one of the two classes: benign tumor or malignant tumor. The data used in training the designed system are obtained from the DDSM.

The data operations used to detect and extract the tumors are thresholding, filtering, adjustments, canny edge detection, and some morphological operations such as image opening. The texture features are extracted from the segmented tumors using the Gray-Level Co-Occurrence Matrix (GLCM). However, the shape features are extracted directly from the images. Additionally, both types of features are combined and fed into the FNN to be classified. Asymmetry, shape, and roundness are the shape features selected to be extracted from images. However, the texture features selected to be used are the mean, entropy, standard deviation, and uniformity. Once the feature extraction is achieved, the extracted features are classified by a fuzzy neural network designed with different number of rules.

Experimentally, the designed FNN was tested using different images and different number of rules in order to find the optimum number of rules that ends up with the highest identification rate. The system was capable of achieving a high identification rate of 97.5% and 0.269 error rate with 36 rules. This performance is considered as good and it may prove that selected texture and shape features can be enough for distinguishing the malignancy of breast tumor in order to the learning capability of the fuzzy neural network design employed in this thesis.

Keywords: Malignancy, breast cancer, texture and shape feature, fuzzy neural system, GLCM
A Low-Cost Flexible Wearable Antenna for Early Breast Cancer Detection

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Passive Microwave Imaging (PMI) has been widely studied for breast cancer detection in recent times. Sensing dielectric property differences of tissues over a wide frequency band has been made possible by ultra-wideband (UWB) techniques. Authors in this presentation, propose a flexible compact monopole antenna on a Kapton polyimide is designed and fabricated, using MEMS technology, to be in contact with biological breast tissues over the S-Band (2-4 GHz). The antenna parameters are optimized to obtain a good impedance match over the required frequency range. Operation of the antenna close to the human body necessitates adjusting its design for the intended applications whereas the maximum SAR value estimated in such conditions has to respect the standards. In this context, simulation tools that can take into account specific biological models offer a range of possibilities for investigating and optimizing the performance of Body-Centric Wireless Networks (BCWNs) devices.

Biography
Dr. AFYF Amal is currently a Postdoc researcher in Aix-Marseille University, IM2NP; she received her Ph.D. in May 2019 from Univ. Med V/ Morocco & Univ. Le Mans of France. Her thesis is concerned about the Conception & Fabrication of Flexible & non-Flexible Antenna Structures for Early Breast Cancer Detection. She is the author of over 12 peer reviewed journal and proceeding papers and handbooks. She taught many classes especially in MEMS, RF technologies, Optical transmission, PABX networking and smart systems in her projects during her Ph.D. thesis.
Pharmacological Inhibition of Notch-Activating Enzyme γ-Secretase Attenuates Oncogenic Potential, Emt And Stemness In Triple Negative Breast Cancer (Tnbc) And In Vivo, By Modulating Autophagy/Apoptosis Balance

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Introduction: Notch signaling is the key regulator of stemness and drug resistance properties in breast cancer specially TNBCs. The enzyme γ-secretase plays an important role in the activation and nuclear translocation of Notch intracellular domain (NICD). Hence, pharmacological inhibition of γ-secretase might lead to the subsequent inhibition of Notch signaling in cancer cells.

Method and Materials: Effect of NMK-T-057 on the oncogenic properties of TNBCs were determined by MTT assay, colony-forming assay, Boyden-Chamber migration, and AnnexinV/PI-based apoptosis (Flow cytometry). Stem properties were determined by Flow-based ADH assay, CD44/CD 24 dual staining and mammospheres. γ-secretase activity was determined by fluorescence-based assay. NICD-1 (active-Notch) was either knocked down or overexpressed by transient transfection. Tumor xenografts were done in Balb/c mice with 4T1 cells.

Results: We observed that 3-(3´4´,5´-Trimethoxyphenyl)-5-(N-methyl-3´-indolyl)-1,2,4-triazole compound (NMK-T-057) binds to γ-secretase complex and inhibits proliferation, colony forming ability, motility in various triple-negative breast cancer cells (TNBCs). It also inhibited epithelial to mesenchymal transition (EMT) and stemness in TNBCs. The in silico study revealing the affinity of NMK-T-057 towards γ-secretase was further validated by fluorescence-based γ-secretase activity assay, which confirmed inhibition of γ-secretase activity in NMK-T-057 treated TNBC cells. We also observed that NMK-T-057 induced significant autophagic responses in TNBCs and inhibition of autophagy attenuated NMK-T-057 induced cell death. Also administration of NMK-T-057 drastically reduced the tumor load in female Balb/c mice.

Conclusion: Hence, we concluded that NMK-T-057 could be a potential drug candidate against breast cancers, specifically TNBCs, which can trigger autophagy-mediated cell death in breast cancer cells by inhibiting the γ-secretase-mediated activation of Notch-signaling.
Starvation Enhance Interaction of Gapdh-App in Autophagic Breast Cancer Cells and Affect Cellular Metabolism

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Introduction

Dysregulation of autophagy has been implicated in cancer infection, aging, and degenerative diseases. In most of the cases, either main drugs induce autophagy in cancer cells at the time of treatment or are responsible for more and more proteins, organelles degradation in cells. In this direction, the usual practice is providing drugs with autophagy inhibitors like chloroquine, Bafilomycin A, 3-Methyladenine, Hydroxychloroquine, etc. Glyceraldehyde 3-phosphate dehydrogenase (GAPDH), a glycolytic enzyme, is a central regulator of autophagy with Sirt 1.

Method

Cell viability and cytotoxicity were evaluated by MTT assay, Neutral Red Uptake (NRU) Assay, Sulforhodamine B (SRB) assay, Lactate Dehydrogenase (LDH) assay, and Trypan blue exclusion assay. Autophagy and necrosis were evaluated by AO/EtBr staining, AVO formation, Morphological assessment assay. Apoptosis was evaluated by DNA fragmentation study and Annexin V-FITC. We observed RNS by Dihydroethidium (DHE) assay, ROS production by H2DCFDA, Nitric Oxide assay, and GST assay. The expression level of autophagic genes (Beclin-1, LC3A/B, Atg5, Atg12, Atg16L1, Atg7, LC3B, Atg 3), APP, BACE 1, p53, beta-actin, and GAPDH were detected by ELISA. GAPDH-APP interaction was studied by sandwich ELISA. We have got interesting results which helped us to understand the metabolic pathway; which switch ON at the starvation stage and have a major role in cell signaling.

Result

A new role of GAPDH and APP protein have been identified in autophagic breast cancer cells. It was observed that the expression level of GAPDH increased in response to starvation in both the control and experimental cells. This may be due to the reason that GAPDH besides being involved in glucose metabolism to provide energy, also acts as a regulator of autophagy by preventing cell death. To rule out the possibility that oxidative signal associated with nutrient deprivation is leading to apoptosis, we estimated the nitrate, nitrite, and nitric oxide in nutrient deprive condition. Taken all together, our study enlightens that starvation and nutrient deficiency-induced autophagic survival and switch to ‘autophagic’ apoptosis or necrosis in response to intense stress, whereas inhibition of autophagy could be a promising strategy for cancer therapy but also affect normal cells.

Conclusion

We suggest that despite many connections between autophagy and apoptosis, a strong causal relationship wherein one process controls the other has not been adequately demonstrated. Knowing when and how to modulate autophagy therapeutically depends on understanding these connections. Specifically, nutrient-induced stress can stimulate autophagy and/or apoptosis in the same individual cells, and autophagy precedes apoptosis. The cell’s first homeostatic response appears to induce autophagy at low stress/toxicity but it resorts to apoptosis with increasing stress levels.
Assessment of Physical Activity Levels in Greek Women Suffered From Breast Cancer during Their Treatment

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National and Kapodistrian University of Athens, Greece

Introduction

It is well documented that both cancer and aggressive therapies of the disease are associated with detrimental effects on cardiorespiratory, immune, nervous and musculoskeletal system. Exercise can reduce or reverse some of those adverse effects by reducing the expression of oncogenes and atrophy genes, inducing antioxidant pathways and contributing to combat chronic inflammation. The purpose of the present study was to assess the physical activity (PA) levels of women under different breast cancer (BC) treatments and compared them with PA levels of age-matched healthy females.

Methods

In the present study 158 females participated, 93 patients with BC under treatment [age: 50.91 yrs, height: 1.61 m, mass: 72.94 kg, Body Mass Index (BMI): 27.68 kg/m²] and 67 healthy women who served as control group [age: 49.60 yrs, height: 1.65 m, mass: 69.04 kg, BMI: 25.30 kg/m²]. Patients with BC were divided in 3 groups: a) those undergoing chemotherapy only, b) those undergoing radiotherapy only and c) those who have been subjected to both treatments. Levels of PA were self-estimated both by the patients during their treatment and the healthy participants using the International Physical Activity Questionnaire (IPAQ).

Results

BC patients were classified as overweight according to their BMI values (27.68 kg/m²), in contrast with the control group whose BMI was marginally normal (25.30 kg/m²). All BC patients refrained from high-intensity PA while, 49.30% of the control group participated in high-intensity PA. However, 53.85% of the patients under chemotherapy, 51.43% of those subjected to both therapies and 47.37% of those who have been subjected to both treatments. Levels of PA were self-estimated both by the patients during their treatment and the healthy participants using the International Physical Activity Questionnaire (IPAQ).

Conclusion

Our findings revealed that BC patients didn’t engage in high-intensity PA at all, nevertheless their levels of moderate-intensity PA were similar to those of the healthy controls. BC patients were willing to exercise but hesitated to participate in intense physical activities, possibly because of their cancer-related fatigue. In addition, BC patients were overweight, highlighting the need to follow the specific exercise guidelines for this clinical population. Moreover, BC patients revealed a sedentary lifestyle, potentially due to the overall burden of their treatment.
Clinicopathologic Features of Isolated Bone Metastasis in Breast Cancer

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Objectives: The most common site for metastasis in patients with breast cancer is the bone. In this retrospective study, we investigated patients whose surgical and medical treatment for primary breast cancer was conducted at our center and whose first disease recurrence was limited to only one bone.

Materials and Methods: We analyzed 995 breast cancer patients, 932 had no metastasis and 63 cases had a single bone metastases ≥6 months after their first diagnosis. Demographic, epidemiological, histopathological and intrinsic tumor subtype differences between the non-metastatic group and the group with solitary bone metastases and their statistical significance were examined. Among established breast cancer risk factors, we studied twenty-nine variables.

Results: Three variables were found to be significant in multivariate logistic regression analysis. Accordingly, the risk of developing respectively single bone metastasis (SBM) was approximately 12 times higher in patients who did not receive tumor surgery and 6.3 and 2.5 times higher in those with TNM Grade III tumors and with mixed type (invasive ductal carcinoma + invasive lobular carcinoma) histology, respectively.

Conclusion: In non-metastatic patients with Stage III and mixed type tumors, the risk of developing isolated bone metastases should always be considered. Knowing this risk, especially in patients with mixed type tumors, may be instrumental in taking measures with different adjuvant therapies in future studies.

Keywords: Breast cancer; isolated bone metastasis
Deep learning in Breast Cancer Diagnosis

Cyrus Ahmadi Toussi
Dalhousie University, Canada

Breast cancer is a common malignancy in which early breast cancer detection by the help of imaging is the key to improve survival rate. Infrared thermal imaging or thermography is a promising screening tool as it is able to warn women of breast cancer ten years in advance. Thermography utilizes infrared beams which are fast, non-invasive, and non-contact and the output created images by this technique are flexible and useful to monitor the temperature of the human body.

It’s been a while that deep learning is being used for the diagnosis of breast cancer and nowadays researchers seek optimized methods to improve the tumor diagnosing. By now, accuracy is close to 100% using deep learning based methods which have been more successful than any other previously approved technique. Recently, we have proved that it can also be used for the follow up process. Our patient was a 25-year-old woman who was referred to Tehran's Imam Khomeini Hospital, Tehran University of Medical Sciences, in October 2014 and June 2017 to perform clinical examinations of breast cancer at the Invasive and New Radiology Research Center of Tehran., using the non-contact infrared imaging camera VisIR 640 (Thermoteknix Systems Ltd, Cambridge, UK), the feasibility of thermography method in the patient's follow-up was investigated and the accuracy of the identification and matching of patient cysts in mammography and ultrasonography with the results of thermography was consistent with each other.

Similarly, breast tumor cell lines data can also be used in solving detection and characterization problems through deep learning. Most of the work comprises of systematic data cleaning, analysis and building prediction models with deep computational architectures and establish that the transformed data can help in better distinction of the respective categories. Many cases with suspicious abnormal findings in mammography who went for further biopsy, eventually were found to have unnecessary biopsies while capabilities of deep learning based models in learning from raw data enables us to reduce biopsies. The mammographic abnormalities are linked to specific histological information and can predict how the microbiological changes are reflected in macro-images.

Current challenges include Data availability, Combinational ground truth, Robustness to data acquisition methods and Interpretability of model layer information

Biography

Cyrus Ahmadi Toussi received his M.Sc. degree in biomedical engineering with the second rank from Hakim Sabzevari University, Sabzevar, Iran, in 2015. His research interests include machine learning, medical images and computer-aided drug design. He has published several papers in these areas. Currently, he is serving as a Visiting Research Scholar at Dalhousie University, Halifax, Canada.
Synthesis and biological evaluation of derivatives of 7-chloroquinolinyl 4-S-thiazole and 4-N-2-aminoin dane

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Central University of Venezuela, Ecuador

The present work describes the synthesis and evaluation of the possible antimalarial and antineoplastic activity of a series of derivatives of 7-chloroquinolinyl 4-S-thiazole and 4-N-2-aminoin dane. The synthesis design for obtaining the derivatives of 2- [2- (7-chloroquinolin-4-ylthio) -4-methylthiazol-5-yl] acetic acid, was based on a linear procedure, obtaining as a key intermediate to 2- [2- (7-chloroquinolin-4-ylthio) -4-methylthiazol-5-yl] acetic acid, which through subsequent reactions of nucleophilic substitution to acyl, used for this purpose EDC, and the corresponding anilines or hydrazides, allowed obtaining forty (40) derivatives. In the case of the synthesis of the derivatives of 7-chloro-N- (2,3-dihydro-1H-inden-2-yl) quinolin-4-amine, a convergent synthesis was carried out, in the which were obtained aminoin danes through procedures reported by our research group, and finally were reacted by an aromatic nucleophilic substitution with 4,7-dichloroquinoline in the presence of phenol to give a total of five (5) final compounds.

In the evaluation of cytotoxic activity compounds 112.7, 113.4 and 113.10, showed inhibitory activity at both 24 and 72 hours in both cell lines. These compounds were better cytotoxic-anitumoral agents than CQ, whereas compared to As2O3 only compound 112.7 was found to be the most active on the two cell lines at the two measurement times. Compared with doxorubicin they all turned out to be less active on the two cell lines. Derivatives 113.1, 113.5, 113.6 and 113.7 showed a direct correlation between the inhibition of β-hematin (IC50 <1 μM), the reduction of parasitemia (% P < 9.5), and the survival time of the mice infected with P. berghei (DSPI = 15-21 days).

Biography

Hegira Ramirez Padilla has completed her undergraduate at age 21, obtaining the title of Professor in the Specialty of Chemistry and completed her PhD in Chemistry of medicines at age of 29 years from Central University of Venezuela. She is a professor of chemistry at UDLA (University of the Americas). She was a professor (won through an opposition contest) of the UPEL-IPC (Universidad Pedagógica Experimental Libertador-Pedagogical Institute of Caracas).
Zinc finger protein (ZFP) is a DNA binding protein that has a major determinant of immune system development and function. Many evidences revealed that it is a tumor suppressor gene, only one recent study suggests that it has oncogenic effect. There is more scientific evidence related ZFP to hematological malignancies. However, there is rare evidence about its role in inflammation-related breast cancer. Thus our work aims to investigate its role in breast carcinogenesis from the view of its association with inflammation. Blood samples were collected from 70 confirmed newly diagnosed breast cancer patients and 20 healthy volunteers. Gene expression of ZFP was performed by Real time polymerase chain reaction (Taq DNA Polymerase) technique.

Also, quantitative analysis of of C-reactive protein (CRP) and Neutrophiles/lymphocytes ratio were performed. In addition, study the overall survival rate and disease free survival rate were done by kaplan meier method to follow up the cases. Our data show that significant decrease of ZFP gene expression and significant elevation of CRP and N/L were noticed in breast cancer patients comparing to healthy people. Recent study supports our work in that a ZFP acts as a tumor suppressor. In this aspect, it has been demonstrated that deficiency of ZFP is associated with lymphoblastic cells deficiency, autoimmunity and malignancies development, including hematological malignancies and solid tumors. Also, our data reveal that CRP and N/L may be useful prognostic factors for breast cancer patients. We concluded that coadministration of anti-inflammatory therapy with anti-cancer therapy may improve the clinical outcomes in breast cancer patients.

Biography

Hewida Hassan Fadel has completed his PhD at the age of 30 years from Medical Research Institute, Alexandria University. I share in the establishment of academic system in Faculty of Allied Medical Sciences, Pharos University, Alexandria, Egypt since academic year 2009-2010 till now. I published paper in Cancer Research Journal (Publishing Science Group). I have achieved publon course for academic reviewer.
Core Biopsy of Axillary Lymph Node Suspicious From Patients With Breast Cancer, Clinical Experience in 52 Patients, Hospital La Linea Spain

Jack Antonio Diaz Brito  
Hospital La Línea, Spain

**Objectives:** To study the correlation between the ultrasonography (US) characteristics of suspicious axillary lymph nodes, from patients of breast cancer and the histopathological results of core needle biopsy (CNB) of the axillary lymph nodes, and the final histological results of axillary dissection.

**Materials and Methods:** This is a retrospectively study that reviewed the US images of patients with suspicious axillary lymph nodes metastasis from breast cancer, we practiced axillary US to all patients between January 19, 2011 and June 12, 2014. The US pathological characteristics of the lymphatic nodes were cortical thickening (CT), absence of fatty hilum (AFH), non hilar blood flow (NHBF) to the cortex and conglomerate adenopathic (CA). We use for the biopsy procedures, the 14 G needle core biopsy, the asepsia of the axilla and the upper outer quadrant of the compromised site, local anesthesia was used and written informed consent. We used the χ² test to correlate the four US variables to metastatic lymph nodes.

**Results:** We include 52 patients with US characteristics of suspicious axillary lymph nodal metastases, the CNB was positive in all patients (100%). We perform the following procedures: 46  
Axillary lymph Node Dissection (ALND) (88%), 3 local exeresis (LE) (5.7%) and 3 Sentinel Lymph Node Biopsy (SLNB) (5.7%). Neoadjuvant chemotherapy (NC) was performed in 6 patients. The US images were following: CT 38%, AFH 34%, NHBF 21% and CA 5%. There were significant correlation when we join at least two or more variables to metastatic lymph nodes p<0, 01, but there is not statistical significance with US variables separately to metastatic lymph nodes at the CNB

**Conclusion:** Axillary lymph nodes with abnormal US findings in patients with breast cancer can be sampled with high accuracy and without major complications by using a 14 gauge CNB technique.

**Key Words:** Axillary Lymph Node; Core Needle Biopsy; Sentinel Lymph Node Biopsy.
Estrogen receptor, Progesterone receptor and Her-2 receptor status of breast cancer patients of southern India: A single institutional study

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Context

There is a paucity of any significant data on the estrogen receptor (ER), Progesterone receptor (PR) and Her-2 receptor status of breast cancer patients from the eastern part of India.

Aims

This study aims to document the ER, PR and Her-2 status of breast cancer patients in the south Indian population, as catered by a premier tertiary care hospital in Madurai.

Subjects and Methods

All breast cancer patients registered between January 1, 2016 and December 31, 2018, in the Department of Medical Oncology, of Government Rajaji Hospital, Madurai, who had at least undergone a core biopsy or surgery, were analyzed retrospectively for documentation of their ER PR and Her-2 status, using the 2010 American Society of Clinical Oncology/College of American Pathologists (ASCO/CAP) interpretation guidelines.

Results

Over a period of 2 years, a total of 427 patients were included for the study. A total of 395 (92.5%) patients had their ER PR and Her-2 data available for evaluation. ER and PR positive was seen in 138 (32.5%) patients, ER and PR negative in 179 (42%) patients, ER positive and PR negative in 29 (6.7%) patients, and ER negative and PR positive results was found in 17 (3.98%) patients. Her-2 was positive in 89 patients (20.8%). Triple Negative status was seen in 158 patients (37%).

Conclusions

This is one of the first single-institutional documentation of ER, PR and Her-2 status from southern India, having a modest number of patients and one of the earliest documentations using the latest ASCO/CAP interpretation guidelines. These findings resemble the data from other parts of India and also reiterate the fact that majority of the Indian breast cancer patients are still ER and PR negative and close to 40% of them are Triple-negative which carries a poor prognosis.

Keywords: 2010 American Society of Clinical Oncology/College of American Pathologists guidelines, breast cancer, southern India, estrogen receptor/progesterone receptor/Her-2 status, Madurai
The Role of Stress in Patients with Breast Cancer and Depression

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Introduction

Stress or stressful reaction is response to stressful situations. The aim of this study was to identify and analyze the stress factors and the level of stress a year preceding the onset of breast cancer and depression in the studied female patients.

Methods

The research in this work was mostly prospectively (clinical and analytical). The study covered 153 respondents, including 103 (67.3%) respondents with breast cancer who constituted the study group and 50 (32%) of women with cancer-free depression as a control group. During the research, Scale of Life Events-Paykel was applied.

Results

Stressful life events differed significantly between the groups. In the studied group, the following events were significantly more prevalent: partner infidelity ($\chi^2=12.663; p<0.001$), failure at work ($\chi^2=44.429; p<0.001$), and spontaneous abortions or stillbirths ($\chi^2=13.818; p<0.001$). In the control group, the following stressful life events were significantly more common: death of a close family member ($\chi^2=36.959; p<0.001$), serious financial difficulties ($\chi^2=57.994; p<0.001$), hospitalization of a family member ($\chi^2=17.389; p<0.001$), death of a close friend ($\chi^2=6.872; p<0.001$), frequent marital disputes ($\chi^2=8.461; p=0.004$) and disputes with an extended family member or a colleague at work ($\chi^2=10.648; p=0.001$), menopause ($\chi^2=4.175; p=0.041$), a less serious organic disease ($\chi^2=4.175; p=0.041$), and marriage of a child with parental consent ($\chi^2=4.175; p=0.041$).

Conclusion

According to the results of this study, stressful life events differed significantly between the observed groups. These stressful life events had a significant impact on the increase of risk for breast cancer, as well as on depressivity.

Keywords: stress, breast cancer, depressivity

Biography

Primary school and secondary mathematics gymnasium "Bora Stankovic", I ended up in Nis. That same year, I enrolled in the Medical Faculty of the University of Nis, which I finished with an average grade of 8.35 during the course of my studies. I defended my diploma paper "Stationary health care" with a medium grade 10. During my student exchange, I was in Egypt in the city of Assiut, where I spent a month and during that time I acquired a comprehensive practical knowledge in Neurology. I am currently associate clinic for the subject Psychiatry at the Medical Faculty of the University of Pristina with a temporary headquarters in Kosovska Mitrovica.
Role of multidisciplinary practice in critical pathological scenarios

Lobna S. Shash
Ain Shams University, Egypt

Nowadays routine Pathology workload in breast lesions comprises a lot of challenging experiences. Despite few of these challenges are due to actual diagnostic complexities, yet such difficulty can be overcome with the mounting experience of the pathologist directly proportion to his practice in breast pathology. However, there are still a significant proportion of difficulties related to the need of multidisciplinary practice that has become crucial to orient the pathological diagnosis as an effective angle in tertiary assessment. Setting a standardized protocol with common language among pathologists, clinicians and radiologists is mandatory for objective decisions; such mission is becoming one of the supreme roles of pathologists nowadays more than it ever was.

Core needle biopsy had remarkably set its foot as the gold standard of primary diagnostic approach in breast lesions, but fallacies in its retrieval and preparation alleviate such role and may render confusing, ambiguous and non-reproducible results. Recently, with the evolving priority of conservative breast surgeries in the luxury of diverse and effective oncology based therapies, post neoadjuvant pathological assessment of tumor response is becoming a frequent encounter. Nevertheless, in absence of dedicated multidisciplinary practice and insightful communication, cancers would likely fire back fiercely because traces of their original growth had been missed due improper initial localization and processing.

Intraoperative consultation and frozen section is an area of vague consensus as regards indications, cons and pros. Centers all over the world had tailored their utility of such facility as per their individualized experiences; balancing its outcome yield versus the drawbacks and questioned certainty of their intraoperative decisions. Again, reproducibility of this procedure warrants multidisciplinary pre-operative, intra-operative and post-operative communication to approve indication, set expectations and tailor decisions accordingly. Putting these concerns and the diverse consequences that might either promote breast pathology practice to excellence or compromise it to mislead, one must consider that the evolving wave of personalized management can never launch safely except in presence of parallel dedicated multidisciplinary practice.

Biography

Lobna S. Shash has completed his PhD years and postdoctoral studies from Faculty of Medicine- Ain Shams University at the age of 32. She is the principal pathologist of the breast multidiciplinary team of Demerdash Centralised Hospital. She has published and is working on several projects involving breast lesions diagnostics, breast cancer immune microenvironment and other prognostic pathological findings.
Study of epigenomic changes in biopsied primary tissue cells from patients with breast cancer

Mehrnaz Ajourloo
Shahid Beheshti University of Medical Sciences, Iran

Genes have memory for events. For example, two generations may be exposed to an event, and this incident will be marked in the genes of that generation (Gene Imprinting). And the same pattern continues for 4 or 5 generations later or more. In this way, the pattern of gene expression changes without changing the DNA sequence. From the perspective of medicine, epigenetics is a modern science from molecular genetics which examines the effects of transgenic factors, the expression of genes and its effects on the health and illness of humans and other organisms.

Most cancers come from a single cell during episodes of genetic and epigenetic disorders. These disorders cause no control cell division, genetic instability, resistance to apoptosis, tumorigenicity, invasion, metastasis, and angiogenesis, apoptosis inhibition, and eventually become Cancer Cells immortal. Considering the high heterogeneity of breast cancer, many current therapies have different results, depending on the molecular status and progression of the disease in many different patients. Therefore, due to the lack of definitive treatment to cope with this cancer, the need for a greater understanding of the molecular basis of breast cancer investigation and recognition of Diagnostic biomarkers for early detection and ultimately improving and developing new therapies one of the research needs.

Epigenetic inheritance is the expression of different phenotypic states which is inherited, but there is no change in the DNA sequence. This means that two individuals have different phenotypes with the same sequence in a particular locus. Epigenetic effects can be caused by changes in the histone acetylation pattern. That is means although the two versions of a gene have the same sequence, due to the difference in the amount of histone that acetylate, these genes are expressed in one person, while not expressed in another person.

Epigenetics express changes in chromatin and DNA that changes the gene expression. Although Changes in the DNA sequence can alter the gene expression or encrypts a modified protein product.

Keywords: Coping strategies, oncology, breast cancer

Biography
She is a Biotechnologist working in the Society for Infertility Sciences, Avicenna Research Centre and Tehran, Iran. She completed her medical studies in Genetic engineering at Rudehen Azad University, Tehran, Iran. She has published more than 10 papers in reputed journals and has been serving as an editorial board member of repute.
Clinical and Pathological Factors Predicting Axillary Nodal Metastasis in breast cancer patients of central Sudan: experience from Sudan

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University of Gezira, Sudan

Background
Data on factors predicting axillary lymph node metastasis among Sudanese patients with breast cancer are rare. The aim of this study is to provide baseline information of the clinical and pathological factors predicting axillary lymph node metastasis in patients underwent modified radical mastectomy or breast conserving surgery at Medani Teaching Hospital, Medani, Sudan.

Methods
We performed a prospective study to examine the correlation between axillary lymph node status and clinico-pathological characteristics of 81 patients with breast cancer patients.

Results
The median age at diagnosis was 47 year (range, 25-85 years). The Median number of Lymph nodes retrieved was 14 (range 2-31). Axillary lymph nodes containing metastases were found in 52 patients (64.2%), more than half of them (n=30) had three or more positive lymph nodes. Factors associated with lower chance of developing lymph node metastasis were: age more than 60 years, postmenopausal status, smaller tumour size, and tumour tumors that are positive for estrogen receptor and/or progesterone receptor. The number of axillary lymph nodes retrieved was the only factor showed statistically significant association with ALNS metastases.

Conclusion
Our finding reveals a high incidence of axillary lymph node metastasis among patients with breast cancer in Sudan, which is likely due various factors such as young age at diagnosis and large tumour size as a result of late diagnosis.
Prevention of Breast Cancer by Beneficial Use of Islamic Lifestyle

Mohammad Rabbani Khorasgani
University of Isfahan, Iran

In recent decades, the morbidity and mortality rates of many important infectious diseases in the world declined, but new challenges for human health especially in the field of non-communicable diseases such as cancers have developed. Breast Cancer (BC) as an important disease and a life-changing event, has attracted public health systems, scientists, and many peoples. Therefore, the pay attention to predisposing and preventive factors and beneficial use of lifestyle modification for BC prevention as a multidisciplinary subject is necessary. In this article, the potential effects of Islamic lifestyle on BC prevention have been presented as the following titles:

1. The Influence of lifestyle on different aspects of human life
2. Influences of lifestyle on breast cancer (BC) development
3. Essential aspects of Islamic lifestyle
4. Islamic lifestyle and breast cancer (BC) prevention

Islamic lifestyle affecting different aspects of human body and soul, can influence breast cancer development, prevention and control. Some important characteristics of Islamic lifestyle with potential effect on BC are included:

4.1. The Necessity of health care: Emphasis on the necessity of pay attention to keep healthy and preventing harmful health effects, Encouraging the acquisition of health-related sciences, the emphasis on the importance of medicine and preventing the non-scientific intervention on human health, insistence on: “prevention is better than cure” and prohibition of Jobs and activities with potential harmful effects

4.2. Diet and nutrition style: Essential guidelines for foodstuffs exploitation (Necessity of carefulness about foodstuff usage and evaluation of the benefits and harms of potential foods, classification of foodstuffs as “Halal” or permissible foods such as vegetables, fruits, meat of lamb, goat, beef, chicken and fish and “Haram” or forbidden foods such as alcoholic drinks, pork, carcasses meat, blood and filthy materials, forbidden of overeating and food extravagance), necessity of fasting during Ramadan and emphasis on beneficial and curative effect of honey for human health

4.3. The religious beliefs and practices: The emphasis on spiritual health strengthening, piety and abstinence “Taghva” and emphasis on human ethical improvement and stress management with trust and reliance on Allah, tolerance, hopefulness for the future and necessity of pay attention to the rights of others

4.4. Encouraging the marriage and childbearing at the first suitable time and also, prohibition of unlawful and illicit sexual activities

4.5. Sleep and awakening pattern

4.6. Social lifestyle: Essential preparations to prevent people loneliness control of sedentary behavior, suitable recreation activities joined with people communication, helping together, friendship with the nature and prohibition/limitation of high-risk behaviors: alcohol consumption, smoking, drug abuse & addiction.

Conclusion: According to essential role of lifestyle on development and prevention of BC, carrying out in-depth studies about lifestyle especially Islamic lifestyle and BC relationship will be helpful to take effective modifications in lifestyle for reduction in the rate of BC in human communities’ especially Islamic countries.

Biography
Dr. Mohammad Rabbani Khorasgani (DVM, PhD), He has completed his PhD at the age of 30 years from University of Tehran. He is now an associate professor in Department of Biology, University of Isfahan, IRAN. He has published more than 50 papers in reputed journals.
Innovative Therapeutic Approaches in Breast Cancer

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Introduction

Recent evidences showed improved efficacy when platinum compounds added to Anthracycline-Taxane regimen in any clinical setting (neoadjuvant, adjuvant and metastatic) for treating Triple Negative Breast Cancer (TNBC). But safety data on each regimen in TNBC is limiting although established data available on individual drug only. A crucial factor is to understand the impact of therapy on Quality of Life (QoL) of patients as it is influenced by every step of the treatment. In this prospective, cohort questionnaire based study, we evaluated whether ADRs and QoL from 2 different chemotherapy regimens differed in patients with triple negative breast cancer.

Methods

The study was conducted in the Dept. of Radiotherapy, Govt. Medical College, Calicut, over a period of 8 months from January 2017 to August. Patients with TNBC who satisfied eligibility criteria were selected and divided into 2 groups .The patients who received AC followed by T were assigned to group AC-T and those who received AC followed by docetaxel and carboplatin (Cb) were in group AC-TCb. List of ADRs were prepared using Cancer Care Ontario (CCO) drug formulary list. ADRs documented either from the patients or from their laboratory reports were graded as per NCI CTCAE guidelines. QoL mean scores were analyzed using EORTC QLQ C30 and EORTC QLQ BR23 questionnaires filled up by the patients during the study. Statistical analysis were done using PASW statistics 18, version 2009.

Results

Data of 81 TNBC patients were collected in which 29 (35.8%) patients received AC-T and 52 (64.2%) AC-TCb regimens. Mean age of AC-T was 50.28±9.071 and 49.87±9.30 years for AC-TCb. Among thirteen system organ classification studied, ADRs in dermatological system, gastrointestinal (P value=0.644), cardiovascular (P value=0.131), ophthalmological (P value=0.533), neurological (P value=0.904), musculoskeletal (P value=0.066), auditory (P value=0.452), psychological (P value=0.303), hematological (P value=0.753), administration site (P value=0.252), respiratory (P value=0.094), were statistically insignificant. A statistically significant difference in ADRs under general disorders was confirmed among different chemotherapy regimens and confined to AC-TCb regimen (P value=0.011). Hand-foot syndrome, grade 3 was present in 1 subject from AC-T and 1 from AC-TCb; 1 subject from AC-T with grade 4. Vomiting, grade 4 type was present for one subject from AC-TCb. Constipation, grade 3 type was present for one subject from AC-TCb. Mucositis grade 4 type was observed from one subject each in AC-T and AC-TCb.

Diarrhea, grade 3 was reported from a subject receiving AC-TCb. Although hematological reactions were a few, most of them belongs to grade 3/4. Anemia, grade 3/4 was reported in 1 from AC-T, 1 from AC-TCb. Febrile neutropenia, grade 3/4 was observed in 4 subjects from AC-T and 5 from AC-TCb. 10 subjects from AC-T and 12 from AC-TCb had neutropenia, grade 3/4. 9 subjects from AC-T, 8 from AC-TCb had insomnia, grade 3/4. One subject from AC-T had hearing impaired, grade 4. QoL mean score was insignificant among the regimen. Among EORTC QLQ C30 functional scale, emotional, cognitive and social domains shows significant difference; higher mean scores were observed for subjects receiving AC-T for all these three ((62.7, P = 0.046), (74.3, P=0.000) and (66.02, p=0.010) respectively). Higher functional scale score indicates better functioning and quality of life. Among EORTC QLQ C30 symptom scale, a significant difference in the mean scores were observed in dyspnea and constipation domains; for both, the higher mean scores were reported for subjects receiving AC-T ((35.6, P = 0.001) and (48.7, P=0.046) respectively). Higher symptom score indicates poor quality of life. All the domains from both functional and symptom scale in EORTC QLQ BR 23 found to be insignificant among the groups.
Conclusion: Both regimens were tolerated by the subjects reasonably very well with majority of adverse effects were mild. Severe (Grade 3 or 4) adverse effects were rare. In our study ADRs from two different taxane based chemotherapy regimens were observed statistically insignificant except in general disorders while QoL, functional domains of breast and disability due to breast symptoms were independent of the chemotherapy regimens showing that no regimen is superior to another. On the other hand, three variables from the functional and two from symptom scale indicate carboplatin based chemotherapy is better in TNBC compared to taxane alone. The major limitation of this study was the small sample size and shorter duration. A more comprehensive study with a greater number of patients is required to get more conclusive results.

Keywords: Triple negative breast cancer; Taxane; Carboplatin; Adverse Drug Reaction (ADR)
Anomalous Magnetic Field Breast Cancer Cause and Therapeutic Possibilities of Natural Earth Magnetic Fields

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Introduction: Biosphere is characterized by Earth magnetic field, gravitational field and cosmic radiation. Magnetic and electromagnetic forces which rule in it, have great impact upon the living world and, along with it, upon human health. Breast cancer, as other malignant diseases, appears in anomalous magnetic and variable magnetic field (AM-VMF), where a body viscous magnetization (BVM) occurs, producing pathological states, what is to be proven in this work.

Work Aims: 1. Prove that anomalous magnetic field (AMF) from external environment is the breast cancer cause. 2. Show, by measurements, those valid breast diseases appeared in AMF only in diseased persons' beds. 3. Find correlation between AMF and the affected breast. 4. Prove that moving the diseased persons away from AMF into a natural Earth magnetic field (EMF) causes healing and recovery. 5. Explain etiological data from literature, i.e. document that breast cancer cause is only AMF, and effects are official risk factors.

Work Methods: Magnetic field measurements performed by protonic magnetometer and Brunton compass. The research, lasting for two years, included, first, two groups of breast cancer patients. First, experimental group (group A), consisted of 41 patients, aged 21 to 65, whose health condition was followed in AMF. A control group (group B) consisted of 22 breast cancer patients, aged from 22 to 64, whose health condition was followed in natural EMF. Separately was followed a third group, over 20 years, breast cancer group with metastases, 26 of them, from which only 4 were moved to live in natural EMF, and 22 lived in AMF and their therapy was according to the official medicine protocol. Two patients living in natural EMF were added to these ones and were treated by official medical therapy, while other 2 from the natural EMF refused the official treatment protocol, one of them accepted only surgical operation of metastased cancer under arm, refusing all other therapy (she was a specialist doctor) accepting to live in natural EMF. The fourth patient refused all medical treatments and accepted only to live in natural EMF. She was found by an oncology doctor and told to take an urgent breast operation. After 2 years, she went to her doctor for a checkup and the doctor got surprised seeing that cancer had completely disappeared. Asked what she had done about it, the patient showed the name and surname of this work author.

Study of etiopathological literature imposes a conclusion that the officially accepted cancer appearance risk factors are only effects of AMF.

Results: In health conditions of experimental group patients (group A), who lived in AMF during treatment, we found deterioration as well as lethal disease outcomes, compared to the control group patients (group B), where we found health improvements after living in natural EMF. We have come to the conclusion that between these two groups there exists a high statistical difference ($X^2=32; p<0.001$). The third breast cancer patients groups with metastases results were various. 22 patients passed away after 3 years of living in AMF, while 4 patients living in natural EMF are still alive (20 years after) with no recedives. The officially accepted risk factors are effects of AMF presence and not breast cancer cause.

Conclusion: Measurements of AMF have confirmed the correlation between AMF and malignant disease breast region. It has been found that external environment AMF created BVM producing pathological states leading to breast cancer. We have proven that moving patients away from AMF and locating them into natural EMF leads to a complete recovery of the diseased ones. Four persons from the third group with metastases were followed and they got healthy. Additional explanation can suggest that it is an excellent therapy for malignant breast disease with metastases. It, also, should be emphasized that all cancer diseases should be treated in natural EMF.

Keywords: EMF, AMF, BVM, breast cancer
Targeting Breast Cancer with Innovative Gold-Based Nanosystem

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Nanotechnology is in the spotlight of therapeutic innovation, and gold nanoparticles (AuNPs) are particularly promising tools to improve cancer treatment. Due to their unique optical properties, non-toxic nature, relatively simple preparation, and functionalization, AuNPs are excellent candidates for many biological applications, such as imaging, drug delivery, and photothermal therapy. AuNPs can accumulate in tumor tissue either passively via EPR effect or actively via their conjugation with a targeting molecule. Thus, AuNPs conjugation with drugs can enhance drug uptake into cancer tissue. At present, we are only beginning to understand the molecular mechanisms that underlie the biological effects of AuNPs, including the structural and functional changes of cancer cells.

The goal of our study was to develop more efficient gold nanoparticles for therapeutic purpose, and to provide new insights on AuNPs interaction with anti-cancer molecules and breast cancer cell lines. In this contribution we showed some results obtained assessing the influence of the size and shape of different gold nanoparticles coated with biocompatible polymers in determining a successful interaction with cancer targeting molecules (i.e. trastuzumab antibody or fungi-derived lectin) and with breast cancer cells. All the findings proved their crucial role in the developing of specific anticancer systems for an enhanced and personalized therapeutic treatment, with further potential application in bioassays and cancer diagnostics studies.

Biography

Bloise Nora has completed her PhD in 2015 at the University of Pavia. Currently, she is a post-doctoral researcher at the Department of Molecular Medicine and Adjunct Professor in Biochemistry (SSD BIO10) for bioengineering master’s degree at the University of Pavia. Her present research interests mainly focus on nanomedicine for cancer therapy and tissue regeneration. She is author of 29 published papers in peer-reviewed international journals, and presented her research results at national and international meetings.
IL-6 and TGF-beta inhibitions by the Tetragona clavipes Propolis extract in MDA-MB-231 cell cultures coadjuvant to low dose radiation

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The investigation of cellular viability and the soluble expressions of interleukin 6 (IL-6) and TGF-beta from in vitro breast adenocarcinoma MDA-MB-231 cells exposed to low radiation dose as a function of the incubation concentrations of the Tetragona clavipes Propolis extract (Ext), in time kinetics, due to the interest of the clinical radiation therapy (RT). The MDA-MB-231 cells were exposed to Co-60, at 2 Gy equivalents to the RT fraction dose. Experimental cell groups were in the following conditions: non-irradiated and irradiated groups with 0, 1 and 10% concentrations of extract. Supernatants in control and irradiation groups were collected at 24, 48 and 72 h. The optical density responses in the MTT assay were also evaluated.

The soluble IL-6 and TGF-beta cytokines in the supernatants were measured by two-site sandwich ELISA. The analysis showed an MDA-MB-231 clonogenic expansion at low dose rate in 48–72 h after radiation showing its radio resistance behavior at 2 Gy. The expressions of IL-6 and TGF-beta in the supernatant in irradiated cultures at 2 Gy were reduced at 24 h; however, returned to the same level of control at 72 h. A significant decrease in IL-6 expression at 48 and 72 h at 2 Gy irradiated samples was observed when incubated with 10% Ext. There is a possible potential recovering of the MDA-MB cell viability at 2 Gy at 48 and 72 h after radiation exposition. The expression of IL-6 and TGF-beta in breast MDA-MB cells were modulated by the presence of the tetragona clavipes Propolis extract, avoiding later clonogenic recover in irradiated cells.

**Keywords:** IL-6, TGF-beta, MDA-MB-231, radiation, tetragona clavipes propolis.

**Biography**

Master of Science in Cell and Molecular Biology from the Oswaldo Cruz Foundation (1994) and PhD in Cell and Molecular Biology from the Oswaldo Cruz Foundation (2000). He holds postdoctoral degrees in physiology and immunology / biochemistry, ICB / UFMG and postdoctoral degree in radiobiology from the Department of Nuclear Sciences and Techniques of the School of Engineering / UFMG. She acts as a collaborator / adviser of the Postgraduate Program in Nuclear Sciences and Techniques. Advisor of the Postgraduate Program in Science and Technology for Amazonian Resources at the Federal University of Amazonas. In research, She has experience in radiobiology, radioisotopes, tumor and inflammatory biomarkers with application of flow cytometry techniques and molecular biology used in human cancer research and in autoimmune diseases. She has experience in quality management in the laboratory and development of protocols and public health management.
Anticancer Potential of Mn (II) Arginine-dithiocarbamate Complex Compounds on MCF-7 Breast Cancer Cell Lines

Prihantono
Hasanuddin University, Indonesia

Introduction

Breast cancer is the leading cause of cancer deaths in women worldwide. In Indonesia, mostly breast cancer patients present in an advanced stage at the time of diagnosis; at this stage, chemotherapy plays an important role. The drug often used for breast cancer chemotherapy is platinum derivative compounds such as cisplatin. Unfortunately, cisplatin has side effects, such as febrile neutropenia, nephrotoxicity, neurotoxicity, and drug resistance. This study aimed to test the potentials anticancer effects of transition metals compound to MCF-7 breast cancer cell line.

Methods

The complex of Mn(II)argininedithiocarbamate was prepared by “in situ method” and characterized by using Ultraviolet-Visible, Infra-Red spectroscopy, and melting point.

Results

The UV-Vis maximum spectrums of Mn (II) arginine dithiocarbamate at 246 nm, and 385 nm. The IR spectra at the wavelength in the region of 354-499 cm-1. The cytotoxic test of the Mn (II) argininedithiocarbamate complex has IC50 = 211 μg/mL, which indicates that the compound can induce morphological MCF-7 breast cancer cell changes and causing apoptosis of cancer cells.

Conclusion

The complex of Mn (II) arginine dithiocarbamate has potentials of anticancer effects on MCF-7 breast cancer cell line.

Keywords: Complexes; Arginine; Breast cancer; MCF-7; Cytotoxic

Biography

Prihantono, MD is the lecture and clinicians in Faculty of Medicine, Hasanuddin University, Makassar, Indonesia. We are interested in basic and applied research on breast cancer.
Comparison of Expression of Micrornas Which Regulate Metastasis Genes in Breast Cancer Stem Cells and Primary Breast Cancer Tissues

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University of Medical Sciences, Iran

Introduction

Recent progression in cancer research has shown that tumors are highly heterogeneous, and multiple phenotypically different cell populations are found in a single tumor. Cancer development and tumor growth are driven by specific types of cells—cancer stem cells (CSCs)—which are also responsible for metastatic spread and drug resistance. Recent progress has highlighted the significant role of miRNAs in controlling the Metastasis in CSCs. Therefore, the present Systematic analysis based on literature mining and bioinformatics approaches was performed to find the miRNAs which regulate metastasis potential in breast cancer. The main goal of the project was to describe the comparison of miRNAs and Metastasis genes expression of breast cancer stem cells and primary breast cancer tissues.

Methods

After systematic analysis and literature mining, we found miR-200c and miR-30c as regulators of metastasis in breast cancer. Then using form the mammosphere in serum-free condition and colony formation assay were conducted to check the stemness properties, and in addition invasion and migration assay was carried out for metastatic potential of MDA-MB231 breast cancer cell. After RNA extraction of four group: mammosphere, adherent culture (control group) of MDA-MB231, primary breast cancer tissue and primary breast normal tissue (control group) obtained from seven patients, then Real-time PCR analysis were performed of Metastasis genes (CDH1/2, SNAI1, TWIST1/2 and ZEB1) and the selected miRNAs. Finally, differentially expressed genes and miRNAs in mammospheres have been determined and compared with seven malignant breast tissues. Correlations of miRNAs with EMT candidate genes were assessed in mammospheres and metastatic tumors.

Results

The results showed that mammospheres represented more colonogenic and spheroid formation potential than MDA-MB231 cells (P<0.05). Additionally, they had enhanced migration and invasive capabilities. Mammospheres demonstrated higher expression of metastasis genes (CDH2, SNAI1, TWIST1/2 and ZEB1) in comparison to their parental also have shown down regulated miR-200c and up regulated of mir-30c in mammospheres. Interestingly, three metastatic patients with grade II/III who received neo adjuvant therapy have higher expression of metastasis genes (CDH2, SNAI1, TWIST1/2 and ZEB1) and have shown down regulated miR-200c and up regulated of mir-30c in comparison to primary breast cancer tissue and primary breast normal tissue like mammospheres (P<0.05).

Conclusions

This study validates the use of breast cancer cell lines as models to elucidate the nature of BCSCs that may represent a novel target for therapy. These stem cell-like cancer cells have a unique gene-expression profile could be used as initial data for subsequent functional studies and drug design.

Additionally, by correlating EMT related genes with miR-200c and miR-30c expression we suggest that simultaneous reduction of miR-200c and increasing in miR-30c might be signature of BCSC enrichment in patients post neo-adjuvant therapy. Therefore, targeting both miR-200c and miR-30c could be useful for developing new therapeutic approaches, against BCSCs and an indicator for resistance to treatment or secondary metastasis.

Keywords: Breast cancer stem cells (BCSCs); mammosphere; MDA-MB231; primary breast cancer tissues; Metastases
**Efficacy of Nalbuphin Combined With Dexmedetomidine for Local Infiltration Analgesia after Breast Cancer**

**Ren Yi-feng**
Henan University, China

**Objective:** The study aimed to observe the analgesic effect of nalbuphine and dexmedetomidine, which as adjuvant of ropivacaine on local infiltration of incision after breast cancer surgery.

**Methods:** Forty-six female patients underwent modified radical mastectomy of breast cancer were randomly divided into two groups: ND group (20 ml: dexmedetomidine 1μg/kg + nalbuphine 10 mg + 0.375% ropivacaine) and C group (20 ml 0.375% ropivacaine). The activity NRS (numerical rating scale) pain score and Ramsay sedation score were observed at 2 hours, 4 hours, 8 hours, 12 hours, 24 hours after surgery. Both consumption of remedial analgesics (morphine) and adverse reactions such as nausea and vomiting, bradycardia, hypotension and wound infection in 24 hours after surgery were recorded.

**Results:** Morphine consumption in 24 hours and the movement NRS scores at 2 hours, 4 hours, 8 hours, 12 hours and 24 hours after surgery were significantly lower in ND group (P < 0.05); Ramsay scores in ND group at 2 hours, 4 hours and 8 hours after surgery were significantly higher in ND group (P < 0.05). But, there were no statistical differences in Ramsay sedation score between the two groups at 12 and 24 hours after surgery. There were also no significant differences in adverse reactions between the two groups.

**Conclusion:** Nalbuphine combined with dexmedetomidine as adjuvant of ropivacaine for local infiltration of incision after breast cancer surgery can effectively improve the limitation in postoperative analgesia only with ropivacaine. As well reduce the use of opioids after surgery with fewer adverse effects. This method can provide more effective postoperative analgesia and comfort for patients.
Autologous Breast Reconstruction with the Latissimus Dorsi Muscle With Immediate Fat Grafting
Long-term Results and Patient Satisfaction

Renata Suzuki Brondi
Santa Casa de São Paulo School of Medical Sciences, Brazil

Objective
The aim of this study was to describe a variation of the breast reconstruction technique with myocutaneous flap of the fat-grafted latissimus dorsi muscle and its outcomes and evaluation of patient satisfaction.

Method
This prospective cohort study included 18 patients and 19 reconstructed breasts, with 1 bilateral case. There were 7 cases of late reconstruction and 11 cases of immediate reconstruction. The flap was prepared with fat at the time of surgery, which was injected before its preparation. The evaluation of the results regarding shape, volume, and symmetry was performed through a satisfaction scale completed by patients and 2 physicians from 12 to 18 months after reconstruction.

Results
On average, 171.31 mL of fat was injected (100–275 mL); the average time of unilateral surgery was 3 hours 42 minutes (3 hours to 4 hours 30 minutes).

After a mean follow-up of 26.38 months (13–38 months), we did not observe complications of this new technique. In the evaluation performed by patients regarding the shape, volume, and symmetry, more than 80% rated the outcome as excellent and good, and the evaluations by the medical team were also satisfactory.

In the comparative analysis between immediate and late reconstruction, patients who underwent immediate reconstruction were more satisfied.

Conclusions
This reconstruction technique with autologous fat injection was effective, with satisfactory and long-lasting results, and without the requirement for implants to set breast shape and volume.
Micro Cavity Array System for Size-Based Enrichment of Circulating Tumor Cells and Circulating Cancer Associated Fibroblasts From The Blood of Patients with Breast Cancer

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University of California, United States

Introduction

Hitachi chemicals have invented a microfluidic device that isolates Circulating Tumor Cells not on the basis of EpCAM expression, but based on the cell size. Cancer Associated Fibroblasts (CAFs) in the tumor microenvironment promote carcinogenesis. Hitachi’s Micro cavity Array System has not been evaluated in the detection of CTCs and CAFs in the blood of cancer patients. The purpose of this study is to demonstrate that CTCs and CAFs can be enumerated using our platform and the circulating CAFs can serve as biomarkers of metastasis simultaneously with CTCs.

Methods

We undertook a Pilot study of 20 patients each with breast cancer across Stage I, Stage II, Stage III and Stage IV. A total of 10ml of peripheral blood was obtained from each patient. Enumeration of CTCs and cCAFs was carried out by the size based mircocavity array system invented by Hitachi Chemicals. Identification of these cells was done by a triple Immunofluorescence staining for pan-CK (cytokeratin), FAP (Fibroblast Activated Protein) and CD45. CTCs were identified as CK+, CD45-, FAP- cells and cCAFs were identified as FAP+, CK- and CD 45 negative cells.

Results

Our method had a high cell recovery rate (90% or higher) and efficient white blood cells depletion rate (99.99%). We present the data from a total of 16 patients in this abstract, (three with stage III and thirteen with stage IV breast cancer). Data from rest of the subjects will be presented at the actual meeting. We detected the presence of CTCs in 13/13 (100%) in patients with stage IV (mean of 40) and in 3 out of 3 (100%) patients with Stage III Breast Cancer. We detected the presence of cCAFs in 1 out of 3 patients (33%) with stage III and in 11 of 13 (84.6%) (Mean of 8) patients with stage IV breast cancer. The number of CTCs and cCAFs was significantly elevated in patients with MBC and the number were clinically associated with a high metastatic burden.

Conclusions:

CTCs and cCAFs can be enumerated using a size based size based micro cavity array invented by Hitachi Chemicals that does not rely on the expression of epithelial markers in CTCs. CTCs and cCAFs can be detected in patients with stage III and stage IV breast cancer. CTCs and cCAFs were associated with high metastatic burden and their numbers were significantly elevated in patients with MBC. cCAFs could serve as biomarkers of CTCs in MBC.
The role of APAF-1 coding gene in the mRNA methylation process in coding of the activator of apoptosis protease in breast cancer in Iranian women

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Guilan University of Medical Sciences, Iran

Breast cancer or B.C is a type of cancer that begins from breast tissue. Being woman is one of the most important risk factors for this cancer, although men may also be affected by this cancer. This disease is one of the most common types of cancer among Iranian women and yearly about 7,000 women are affected by this cancer. Therefore, considering that the 5-year survival of 70% of these patients have more than 5-years survival, Now we have about 70,000 women with this cancer in the country. Particularly, the incidence of this cancer in Iran is 5 years below the global average and between 45 and 55 years of age.

In this regard, the effect of genetic factors such as DNA methylation is a good biomarker for the prognosis and treatment of breast cancer. In normal cells, methylation causes the chromatin organization, silencing expressible genes, inactivation of chromosomes, expression of the specific genes of each tissue and genetic role play.

DNA methylations occur mainly on cytosine bases which is present in conjunction with guanine as CPG dinucleotide. The expression of these genes can ultimately be sensitive to methylation in non-methyl normal cells. Ultimately, hyper methylation of promoters leads to the inactivation of the genes involved in the cell cycle, cell connections, DNA repair and apoptosis. There are several factors involved in the process of planned cell death, which is a physiological process and keeps the hemostasis of multicellular organisms. In this study, we scrutiny the effects of APAF-1 coded protein in the prognosis and treatment of breast cancer. Researches show that terminal domain of APAF-1 protein controls the activity of cell caspases and generally cause direct effect on it in the process of apoptosis, through activation the proteases involved in the planned cell death.

Biography

He began his education in 2013 in medicine in Guilan University of Medical Sciences; Rasht-IRANHe has published more than 10 papers in reputed journals and has been serving as an editorial board member of repute.
Feeding and Abscess Free Breast

Shazia Shadab
Cloudnine Hospitals, India

Background and Rationale

Pregnancy and lactation are the two significant stages which brings about physiological changes in the breast environment. There are certain breast conditions which will have an impact on breast feeding which eventually leads to suppression of breast milk. Suppression of feed which in turn has a negative impact on the newborn’s health and emotional wellbeing of the mother. The following are the major conditions,

a) Block duct

b) Mastitis (Studies show that incidence of mastitis ranges from 9.5% to 27% in the first month of post-partum)

c) Breast Abscess (has an incidence range between 0.4 % and 11%)

Of the three, blocked duct and Mastitis are more manageable but when it leads to abscess more intensive intervention is needed. Nursing mothers are most vulnerable to breast abscess at two stages

• At the first month

• At weaning

Till date the treatment for the above conditions are,

a) Conservative management – This method is practically not feasible due to the time taken and effective only when it is done at a regular interval of time.

b) Medical line of management - Helps mostly at the initial diagnosis but has its limitations at a later stage. And continued therapy may lead to tissue destruction.

c) Surgical management like needle aspiration, catheter drainage and surgical incision.

Needle aspiration – Thick pus, multicentric abscess and larger size in diameter.

Catheter drainage and surgical incision – painful, destructive, might result in adhesions in glandular tissues, breast deformity, and aesthetic issues.

Therefore, non-operative treatment is the most viable alternative.

Dynamic taping, a biomechanical tape which is extensively used in the sports and therapeutic category can be used to resolve the abscess. This tape works with the principles of strength, recoiling, and elasticity that would help in resolving the breast abscess. To prove this hypothesis, a pilot study was conducted in a tertiary care hospital in Bangalore.

Methods: A prospective cohort of 20 participants was built after obtaining the Ethical approval from the Institutional Ethics Committee of the tertiary care hospital. Participants were identified from the Gynecology OPD of the hospital over a period of one year after a thorough clinical examination by their treating OBG & Gynae. A written informed consent for participation was obtained and a detailed history was recorded. Breast ultrasonography scan was done to measure the lump, volume of collection and location. A patch sensitivity test was done prior applying the Dynamic tape. Following types of Dynamic tapes were used for the study.

• Dynamic Taping 5cm x 5cm (Beige Tattoo)

• Dynamic Taping 7.5 cm x 7.5cm (Beige Tattoo)
Breast feeding was advised and if the mother is not able to feed, syringing or hand expressing was advised. Appropriate exercises, breathing techniques were advised along with medication prescribed as per the consultant.

On the subject’s next visit, the tape was removed and re-assessment was done by clinical examination and if found satisfactory, breast ultrasononography test was done to see the changes in lump size. If required, re-taping was done and advised accordingly.

**Results:** Data from 20 participants have been used for the analysis. The mean age at abscess diagnosis was 28.7 years with a median of 67.2 cms of abscess.

Breast abscess was measured radiologically pre and post taping.

Appropriate nonparametric bio statistical tests were employed to analyze this data and found to have a p value of 0.0001 which was lower than the significance level of alpha= 0.05.

**Conclusion:** In this pilot study we observed the complete resolution of abscess and mothers were able to breast feed the baby as per its requirement. There were no cases of recurrence reported. This non operative method hence proves, cost effective, more reliable in preventing with minimal pain and scar free.

Dynamic taping has worked as per the following mechanism to resolve the abscess.

- **Manual Lymphatic Drainage (MLD):**
  
  By applying the Dynamic tape on the inflamed area/ abscess, with an accurate rhythm, direction and depth, it stimulated the lymphatic flow with the up liftment of skin and helped to restore the skin texture.

- **Multi-layer Compression Therapy:** Dynamic tape caused a light pressure in the lymphatic structures located in the subcutaneous tissues by stretching which resulted in the increase of lymphatic activities, thereby causing the flow of lymphatic fluid into the lymphatic vessels and aid in the drainage. And this in turn resulted in enhancement of blood circulation and muscle activation.

- **Decongestion:** Dynamic tape on the direction of the lymphatic flow, created a pressure which is effective enough to stretch the fascia in desired direction to support the reduction of size of the lump and fluid. This created a suction effect in the healthy lump vessels located in the drainage area and enabled accumulated lump fluid to move from a region of insufficient lymphatic drainage to an area with normal lymphatic drainage and eventually venous system.

- **Natural opening:** Dynamic tape created a stress pressure on the skin and with baby’s repeated suckling, the superficial skin softened up and when there was pus load it naturally oozed out, there by evacuating the collection. The repeated suckling of the baby and the stretch of the superficial skin in the opposite direction also helped in assembling the collection at one location in case of multicentric abscess.

**Biography**

I have completed my bachelor's of Physiotherapy and certified in Basic and advanced Dynamic taping, presently am pursuing my certification in Lamaze Childbirth & educator. I am working as a Physiotherapist at Cloudnine hospital, Jayanagar, Bangalore. (Leading chain of maternity, childcare and fertility) I am passionate about treating and preventing musculoskeletal issues during pregnancy and post-partum which drove me to conduct this pilot study to improve the quality of life of lactating mothers and babies. I have attended various workshops and seminars and have been an Instructor for various physio therapy students.
To Compare Two Boost Protocols of Hypofractionated Radiotherapy with Vmat in Patients with Breast Cancer

Shipra Gupta
Post Graduate Institute of Medical and Research, India

Objective:
Dosimetric comparison of hypofractionated simultaneous integrated boost (SIB) versus sequential boost (SB) approach with Volumetric Modulated Arc Therapy (VMAT) after breast-conserving surgery (BCS) in breast cancer (BC) patients.

Methods
A total of 55 BC patients were enrolled in this phase II study approved by IEC and registered with CTRI (registration number CTRI/2018/04/013008). A total of 35 women were assigned to the SIB arm, 20 to the SB arm randomly. This study compared the target volume coverage and normal tissues sparing with SIB-IMRT and SB-IMRT. Planning 4DCT was done and images were transferred to a commercial planning system for structural delineation. The CTV included the whole breast volume and CTV nodal (if nodal irradiation was indicated) in both arms. A margin of 0.7cm was given to form PTV in both arms. CTV BOOST was contoured based on the seroma of cavity or clips placed during the lumpectomy. ITV was generated for both arms and a PTV margin of 0.5cm in SIB and 1cm in SB arm was given. A commercial IMRT treatment planning system (Varian) was used to provide treatment planning. For SIB, the dose prescribed to PTV was 34 Gy (3.4Gyx10 Fr) and 40 Gy was given to PTV boost (4 Gyx10 Fr). For SB, dose delivered to PTV was 34 Gy (3.4Gyx10 Fr) and PTV boost of 8Gy (4 Gyx2 Fr) was given. A statistical analysis with Paired Student's t-test was used to compare the dose-volume-histogram of target volumes and critical organs between the two techniques.

Results
The mean PTV volume was 1215.6 ± 566.9 ml and 1160.6 ± 522.8 ml and PTV boost volume was 74.5 ± 46.9 ml and 69.6 ± 56.2 ml (p=0.7) in SIB and SB arms, respectively. The mean dose to PTV was 35.40 ± 1.41 Gy and 34.75 ± 0.54 Gy (p=0.05) for SIB and SB, respectively. The mean PTV boost dose was 40.86 ± 1.29 Gy for SIB and 40.39 ± 0.80 Gy (p=0.1) for SB. Homogeneity index (HI) was better for SIB than SB techniques (p = 0.03) with comparable target coverage. D98 was also better in SIB arm (p=0.015) than SB. The mean dose to the contralateral (C/L) lung was 7.82 ± 3.6 Gy and 10.38 ± 5.4 Gy in SIB and SB (p=0.042), respectively. Mean heart dose was similar in both arms, 18 ± 1.9 Gy. Mean dose to the LAD depended significantly upon the laterality of the breast treated (p=0.001). The mean dose to the LAD was 3.5 ± 1.3 Gy for right sided and 6.2 ± 1.6 Gy for left sided for SIB and 3.4 ± 1.1 Gy for right sided and 6.8 ± 1.9 Gy for left sided for SB, respectively. The mean dose to the ipsilateral lung, C/L breast, and spinal cord were lower with SIB but comparable. Dose constraints were better achieved in SIB, for esophagus and C/L lung (p= 0.003, 0.03 respectively).

Conclusion
In this study HI was better with SIB than SB with comparable coverage. Doses to esophagus and C/L lung were significantly reduced with SIB technique. However, dose to heart was similar in both the techniques with no variation in heart dose with laterality of BC

Biography
Dr. Shipra Gupta has completed her MBBS at the age of 22 years from Delhi University and doing post doctoral studies in Radiation oncology from Post Graduate institute of medical and research, Chandigarh, India. She has presented a poster in an international conference and won a gold medal for her oral presentation in a national conference. She has presented case reports and also one in process of publication.
Is There An Alternative To Surgery In Patients With A Complete Response After Neoadyuvant Chemotherapy?

Silvia Perez Rodrigo
MD Anderson Cancer Center, Spain

**Introduction:** The treatment of the local breast cancer has had many advances in the last years, especially since the Neoadyuvant chemotherapy has been established. Nowadays, the triple negative and HER 2 positive cancers have a high percentage of complete responses. The efforts are focused now on identifying with reliability which of those patients has had a pathological complete response with the different imaging techniques and if it is possible to avoid surgery on them. Mammography and ultrasound are not the best techniques to assure a complete response because they have low agreement with the pathological results. MRI is the choice technique to assess a complete response with high accuracy but however it has some false results. It has been proposed to use percutaneous biopsy systems that obtain high amount of tissue to get this purpose.

**Material and methods:** In this scenario with a high complete response rates in some breast cancer subtypes, the questions that have been made are:

- Is it possible to identify reliably the patients with a complete response with imaging techniques only? In this case, the most important thing is to avoid the false negative cases.
- Then, is it possible in those cases to avoid the surgery?
- How could we get it if the imaging techniques have some false results?

The objective of the presentation is to review the different imaging techniques, the main breast cancer subtypes that have a complete response and which methods we have to avoid finally the surgery.

We review the different breast biopsy systems where a high volume of samples is obtained. These methods are mainly the INTACT system and VABB system. These methods are the solution to avoid the surgery in patients with a complete response on imaging after the Neoadyuvant chemotherapy.

I will review the different clinical trials that are ongoing and the different characteristics of every of them.

**Conclusion:** Nowadays there is some breast cancer subtypes with a high percentage of complete responses. Those patients undergo surgeries with the subsequent aesthetic deformation. Avoiding surgery in some cases have been proposed as an alternative. The INTACT and VABB are been studying as a reliable alternative.

**Biography**
She completed her medical degree from Autónoma University in Madrid. She is the head of breast department in MD Anderson Cancer Center in Madrid and in Hospital Quirón La Luz. She is also a board member of the SEDIM society (Breast Imaging Spanish Society). She has been participating in many congresses as a speaker, has published papers in different journals and chapters of books. She has been specialized in breast imaging since her first years as radiologist, focusing on MRI, biopsy procedures, reconstruction techniques and research.
The Role of Microbiota in Breast Cancer Etiology, Progression and Treatment, Within the Frame of a New Field Of Oncology: Oncobiotic

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Microbiota consists of microorganisms that colonize a given habitat; human microbiota is mainly found in the gastrointestinal tract, but also in other sites, including breast. Microbiome’s composition plays a decisive role in maintaining human health, but also contributes to the etiology of several chronic diseases, such as metabolic syndrome, diabetes, obesity, and cancer. It is estimated that up to 20% of cancer cases are driven by microbial pathogens and many malignancies are associated with an impaired microbiome composition defined as dysbiosis.

Gut dysbiosis is responsible for an imbalance between pro-inflammatory and anti-inflammatory response to external factors and nutrients, through the intestinal barrier, causing both local and systemic inflammation.

In addition, some enteric micro biome populations, called Estrobolome, are able to metabolize estrogens and influence their level in blood stream, impacting on sexual hormones bioavailability and women’s risk of hormonal dependent cancers, including 70% of breast cancers. Plenty of studies confirmed that microbiota has an interdependent relationship with the immune system, influencing the pharmacokinetics, anticancer activity and toxicity of chemotherapy and lately of immunotherapy. Recent reports are exploring the correlation between breast tissue dysbiosis and cancer, studying on the hypothesis of a gut-breast axis, which might explain the correlation between unhealthy lifestyles (bad diet, lack of exercise, distress) and at least 40% of breast cancers.

All these important evidences have given birth to a brand-new field of study, called Oncobiotic, which may play a key role in improving the efficacy of cancer prevention and personalized therapies in a precision medicine strategy.

Biography

Stefano Magno, is a breast surgeon, chief of the Integrative Therapies Service at Women’s Health Department of Fondazione Policlinico Universitario A. Gemelli IRCCS in Rome and scientific coordinator of the master degree in “Integrative Therapies in Female cancers” at Università Cattolica. His work is focused in clinical and scientific aspects of oncoplastic procedures in breast cancer surgery and integrative oncology. He’s Principal investigator in four clinical trials, in the fields of microbiota and lifestyles, rehabilitation, psycho-oncology in breast cancer patients. Since 2000, is a member of non-profit organization “Susan G. Komen Italia”, focused on breast cancer prevention and treatment.
Breast cancer incidence in South Indian women in relation to ABO blood groups and Rh factor

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Background

Association of ABO blood group with salivary gland, gastric, pancreatic, renal and bladder cancer is well documented. However, the association of ABO blood group and Rh factor with breast cancer is yet to be clearly understood because of conflicting reports from various studies. Present study is an attempt to test the actual facts regarding the issue.

Aims and objectives

1. To find any association between breast cancer and ABO blood group.
2. To know the frequency of each blood group in relation to patients with breast cancer.

Materials and methods

It is designed as a case control study. Ethical approval was obtained. The study was conducted for 2 years from 2017 to 2018. The patient’s demographic and clinical data were extracted and evaluated from the medical records. The studying population was divided into two groups. The case group included patients with breast cancer whereas women with no diagnosis of breast cancer were taken as control. Blood grouping was done by standard agglutination method.

Results

During the period 300 breast cancers were diagnosed. The mean and limit of patient’s age 45 ±5.5 years and 16-75 years respectively. Association of ABO blood groups and breast cancer was found out with Odd Ratios (ORs) with 95% Confidence Interval (CI). ABO blood group distribution among patients with breast cancer was as follows: Group A- 49%, Group O-30%, Group B- 16% and Group AB- 5% Among 100 healthy controls, ABO blood groups percentage was: Group O- 30%, Group A- 17%, Group B- 43%, and Group AB- 10%. There is significant association between blood group A and breast cancer with the p value of <0.05. This study showed that there is strong association between ABO blood group system and female breast cancer with the highest risk noted for blood group A and the minimum risk for blood group AB.

Conclusions

The possibility of breast cancer in women with blood type A+ is more than other blood groups of ABO system. Therefore, it is recommended that the ABO/Rh system blood groups control should be considered as a possible risk-factor for breast cancer.

Keywords: Breast cancer, ABO and Rhesus blood groups, Risk factors.
A Randomized Control Study Comparing Two Doses Of Dexmedetomidine As An Adjuvant To Bupivacaine In Ultrasound Guided Pec 1 And Pec 2 Blocks For Perioperative Analgesia In Mastectomy Patients

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Introduction

Breast cancer is the most common cancer among women with more than one million new cases diagnosed every year. (1-3) It accounts for 25%–32% of all female cancers in India.4 Modified radical mastectomy is a common surgical procedure, accounting for 31% of all breast surgery cases performed.5 Acute postoperative pain is an integral risk factor in the development of chronic post mastectomy pain; 40% of women will have severe acute postoperative pain after breast cancer surgery, whereas 50% will develop chronic post mastectomy pain with impaired quality of life. (5,6) Thoracic epidural block, thoracic paravertebral block (TPVB), interpleural block, interscalene block and wound infiltration have all been used in anesthesia and / or analgesia in breast cancer surgery.(7-12) TPVB does not block medial and lateral pectoral nerves as effectively as long thoracic and thoracodorsal nerves, leading to inadequate analgesia.13 The TPVB also involves the risk of pneumothorax, spinal cord trauma, sympathetic block, and hypotension.7 Pectoral nerve (PecS) block is a new technique for providing surgical anesthesia and postoperative analgesia during breast surgery that relies upon the placement of local anesthetic between the thoracic wall muscles(14,15) and is therefore devoid of major adverse effects.13 Dexmedetomidine is a highly selective α2-adrenergic receptor agonist. It can affect the brain and spinal cord α2-adrenergic receptor and inhibit neural discharge to produce sedative, analgesic, and anxiolytic effects.16

The present study was done using two doses of dexmedetomidine (0.5 and 1 microgram per kg body weight ) as an adjuvant to 0.25% bupivacaine in ultrasound guided both Pec 1 and Pec 2 blocks in mastectomy patients and mainly emphasized upon intraoperative hemodynamic stability and analgesia in early postoperative period i.e first 24 hours after surgery.

Materials and methods

After obtaining hospital ethical committee approval, the study was carried out as a prospective randomized double-blind study on 90 female American Society of Anesthesiologists (ASA) Grade I and II patients of age 18 years and above, scheduled to undergo elective unilateral modified radical mastectomy (MRM) under general anaesthesia at a tertiary care teaching hospital in India. The study period was 1 year from August 2017 to July 2018.

Patients were randomly allocated into three groups with 30 patients in each group using computer generated random numbers. The group allocation numbers were concealed in sealed opaque envelopes that were opened after enrolment of the patients.

Group B received Pec 1 and Pec 2 block with 30 ml 0.25% bupivacaine alone.

Group Bd received Pec 1 and Pec 2 block with 30 ml 0.25% bupivacaine with dexmedetomidine 0.5 microgram per kg body weight.

Group BD received Pec 1 and Pec 2 block with 30 ml 0.25% bupivacaine with dexmedetomidine 1.0 microgram per kg body weight.

Patients with pre-existing infection at the block site, morbid obesity (BMI > 40 kg m –2 ), allergy to local anaesthetics, coagulopathy, decreased pulmonary reserve, major cardiac disorders, renal dysfunction, pre-existing neurological deficits, and psychiatric illness were excluded. Procedure of block and visual analog scale (VAS) was explained and
written informed consent was obtained at preanesthetic checkup.

The patient was first administered general anesthesia and then received Pecs block. One of the investigators prepared 30ml of study drug with either 0.25% bupivacaine or 0.25% bupivacaine along with 0.5 microgram per kg body weight dexmedetomidine or 0.25% bupivacaine along with 1.0 microgram per kg body weight dexmedetomidine. The patient received ultrasound guided Pec 1 and Pec 2 blocks by an experienced anaesthesiologist who was blinded to the contents of the drug given. Using an in-plane medial-to-lateral approach, 10 ml of diluted prepared solution was injected into the interfacial plane between the two pectoralis muscles and 20 ml was injected into the interfacial plane between the pectoralis minor and the serratus anterior muscle after negative aspiration over 1 min with repeat aspiration every 5ml.

The HR and blood pressure were recorded before induction, after induction, after tracheal intubation, at skin incision, and then every 5 min until the end of surgery. After extubation, the patient were transferred to the postanesthesia care unit where pain was assessed by a blinded observer using VAS at 0,15,30,60 minutes over first hour and then at every 2 hours for first 12 hours and at every 4 hours for next 12 hours. Analgesia was given when VAS was 3 or greater in the form of 1 mg/kg diclofenac intravenously. Duration of analgesia was assessed by recording the time to first rescue analgesia after administration of block. Total analgesic consumption was recorded intraoperatively and in first 24 hours after surgery. Postoperative nausea and vomiting (PONV) was recorded and rescue antiemetic ondansetron 0.1 mg per kg was given intravenously if present. Sedation was assessed in the recovery room with Ramsay scores. Intercostobrachial nerve dissection and preservation by the surgeon was recorded intraoperatively.

Sample size was calculated on the basis of variation in total duration of analgesia in the two groups included in the reference study using the formula: Where \( \sigma_1 = 81.5, \sigma_2 = 42.3 \). The standard deviations of total duration of analgesia in the two groups studied in the reference paper (Dexmedetomidine as an adjunctive analgesic to ropivacaine in pectoral nerve block in oncological breast surgery: A randomized double-blind prospective study by Haramritpal Kaur et al); \( d = \text{mean}(\sigma_1, \sigma_2) \) the minimum mean difference consider to be medically significant; type I error \( \alpha = 5\% \) corresponding to 95% confidence level; type II error \( \beta = 10\% \) for detecting results with 90% power of study.

Data were entered into MS Excel spread sheet and analysis was performed using the Statistical Package for the Social Sciences version 23.0 (IBM Corp, Armonk, NY, USA). The intergroup differences amongst various parameters were compared using Chi Square test, One Way ANOVA and Kruskal Wallis H test. For all statistical analyses, \( P < 0.05 \) was considered statistically significant and \( P < 0.001 \) was considered highly statistically significant. The consort diagram of the study is show below.

Results

The groups were comparable in terms of demographic parameters of age, sex, weight and ASA status. There was also no significant difference observed amongst the three groups in terms of duration of surgery, induction HR, induction MAP and intercostobrachial nerve resection.

There was significant reduction in heart rate in the dexmedetomidine groups right from the time of intubation till the end of surgery. The bigroup comparison showed that the reduction in heart rate in Group BD is significantly higher at almost all time points with maximum mean difference of -8.43 (p<0.001)seen at 75 minutes of surgery than in Group Bd with a maximum mean difference of -8.53 (p<0.001) seen at 45 minutes when compared to the control group. However the intergroup comparison between Groups BD and Bd showed no significant difference at any point of observation (maximum mean difference of -2.30; p<0.199).

Similarly, intraoperative MBP showed significant reduction in the dexmedetomidine groups at all points of observation after intubation. The bigroup comparison showed significant differences in MBP between Groups BD and B at all time points since induction with the maximum mean difference of -7.40 seen at the time of incision (p<0.001) whereas the differences in MBP between Groups Bd and B were not significant at any point of time with the maximum mean difference of -2.63 seen at the time of intubation and incision. In general Group BD showed greater reduction in MBP.
than Group Bd. However the intergroup comparison between the two dexmedetomidine groups showed a different trend than HR with significant differences at all time points after intubation (maximum mean difference of -5.00; p<0.001 at 15 minutes) except at 60 and 90 minutes.

The VAS scores showed significant reductions in the dexmedetomidine groups as compared to the control groups beginning from 2 hours postoperatively to 16 hours postoperatively with marked reduction (p<0.001) at 2, 4, 6, 8 and 10 hours postoperatively.

The highest average VAS score observed in Group BD was at 24 hours postoperatively (3.10±0.66) while in Group Bd (3.23±0.57) and Group B (3.17±0.70) at 16 hours postoperatively. The mean difference in VAS scores between the two dexmedetomidine groups observed significant reductions from 2 hours to 16 hours postoperatively with a maximum difference of -1.27; p 0.000 observed at 6 hours postoperatively. Thus Group BD with a higher dose of dexmedetomidine showed better quality of postoperative analgesia than Groups Bd and B.

The duration of analgesia showed significant difference in the dexmedetomidine groups in relation to the control group. First breakthrough pain occurred after around 19.46 hours in Group BD and 18.18 hours in Group Bd as compared to a mere 11.74 hours in Group B which correlates well with early resolution of sensory analgesia in Group B. The intergroup comparison with Group B showed significant difference in both Groups BD and Bd. However the mean difference in the duration of analgesia between the two dexmedetomidine groups BD and Bd was not significant statistically.

Intraoperatively maximum analgesic requirement was observed in Group B with 8 out of 30 patients requiring intraoperative fentanyl whereas only 5 patients in Group Bd and 2 in Group BD required intraoperative analgesic. However the intraoperative analgesic consumption showed no statistically significant difference amongst the three groups. As far as total analgesic consumption in the first 24 hours after surgery is concerned, there was significant reduction observed in the dexmedetomidine groups. However the intergroup comparison between the two dexmedetomidine groups showed no significant difference.

The RSS scores amongst the three groups were statistically significant at all points of observation for the first 4 hours of the postoperative period.

There was no significant difference observed amongst the three groups in incidences of other adverse outcomes like postoperative nausea, vomiting and respiratory depression although nausea was reported maximum in Group B whereas respiratory depression was seen only in dexmedetomidine groups.

**Conclusion**

We found that dexmedetomidine prolongs the duration of sensory analgesia when used as an adjuvant with local anaesthetic in Pecs block. The patients receiving Pecs block with dexmedetomidine as an adjuvant had stable and better controlled intraoperative hemodynamic parameters, better quality of postoperative analgesia and lesser requirements of intraoperative as well as postoperative analgesics. Comparison with previous studies shows similar findings. The study done by Kaur et al17 in 2018 and Hassn et al16 in 2016 also found statistically significant reduction in HR and MAP, reduced VAS scores in the postoperative period and greater time to rescue analgesia in the dexmedetomidine groups as compared to their control groups. The absence of any significant difference in HR at any point of observation in the intergroup comparison between Groups BD and Bd implies that the increment of dose of dexmedetomidine from 0.5 to 1 µg/kg body weight does not lead to better controlled heart rates. However the differences observed in MAP at most of the times in the bigroup comparison amongst the two dexmeitomidine groups was significant which might be explained by the sympatholytic activity of dexmedetomidine causing hypotension at higher dose. Similarly increasing the dose of dexmedetomidine from 0.5 to 1 µg/kg body weight does not lead to a significant increase in the duration of analgesia or lowering of postoperative analgesic consumption. The only parameter exhibiting significant difference is the quality of postoperative analgesia assessed using VAS score which might be due to the confounding sedative effects seen more with larger dose of dexmedetomidine and owing to the subjective nature of assessment. Increasing the dose
of dexmedetomidine to 1 µg/kg body weight however leads to greater sedation and respiratory depression.

Dexmeditomidine 0.5 µg/kg body weight as an adjuvant in Pecs block is found to be equally efficacious as 1 µg/kg body weight for intraoperative and early postoperative analgesia in mastectomy patients.

Our study did not include ASA III or IV patients. We could not assess the quality and onset time of the sensory block as it was performed after induction of general anaesthesia. Patient-controlled analgesia (PCA) was not used in this study, which could help standardise diclofenac administration for all patients. We also could not evaluate the effect of Pecs block on chronic postsurgical pain and metastasis or recurrence of carcinoma breast. Assessment of dynamic VAS scores at limb movements could have further added to the significance of this study.

**Biography**

VIJIT KUMAR has completed his undergraduate (MBBS) and postgraduation in Anaesthesiology and Critical Care from Department of Anaesthesiology and Critical Care, King George’s Medical University, Lucknow, UP, India 226003. At present he is working as a Senior Resident in the same department.
Radiologist’s role in evaluating the margin status in lumpectomy specimen

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Breast conserving surgery or lumpectomy has been established as a standard treatment option for women with early-stage invasive breast cancers. Surgical margin status has a significant impact on local recurrence. Goals of lumpectomy are to remove the cancer with negative margins and preserve maximum cosmetic appearance of the breast. Achieving a negative lumpectomy margin is a complex process which requires team efforts from surgeon, pathologist and radiologist. As a member of a multidisciplinary team, the radiologist needs to be familiar with the tumor and technical factors that associated with higher risks of positive surgical margins and understand how to work together with surgeon and pathologist to obtain negative margins. Despite the common use of mammography to help avoid positive surgical margins, it is important to remember the limitations of standard intraoperative specimen radiographs. After attendance of this lecture the audience will be able to understand the complexity of achieving a negative lumpectomy margin; describe the risks and predictors of positive surgical margins; understand the limitations of specimen radiographs; and appreciate the importance of working as a member of the multidisciplinary team.
Finesse in Aesthetic Breast Recontouring

Yueh-Bih Tang Chen
National Taiwan University Hospital, Taiwan

The breast with its unique role in esthetics and function, brings about beauty and sorrow in a woman’s life long journey. The problems are breast asymmetry, undesirable form and volume, deformity and displacement of nipple-areolar complex, and breast cancer associated complications. Refinements in breast shape involve thorough evaluation for not only the inherent problem, but also the status of the counterpart breast form. The nipple-areola complex is also an important esthetic unit that should be taken into consideration as a whole. Breast cancer surgery/radiation treatment may create deformity, scar contracture, loss of nipple-areola complex, chest wall tightness, or even recurrence, radiation necrosis and infection of the severely afflicted individuals. Reconstructions of the breast cancer surgery/treatment associated problems involve placement of implant, with differential augmentation or reduction mammoplasty/mastopexy at the contralateral side. Nipple-areolar reconstruction can be elaborated with nipple-areolar sharing from the contralateral side, or by using local flap. The implant breast reconstructions are suitable for skin sparing mastectomy patients.

Transverse Rectus Abdominis Myocutaneous flap or free Deep Inferior Epigastric Perforator flap breast reconstructions are options for those with skin deficiencies or secondary Reconstructions. Choice of reconstruction modalities should consider the severity and general condition of the patient, expectation of the patients, times of operation that’s desirable to the patients. Pursuing excellence has been always the ultimate goal for breast surgeries and reconstructions. Breast recontouring is a common request in the modern era. With the advent of the current plastic and reconstructive surgery modality, almost all the problems can be solved to significantly improve the figure and life quality of the afflicted individuals. Pursuing excellence in plastic surgery, and bringing excellence to life has always been our ultimate goals.

Biography

Yueh-Bih Tang Chen, MD, PhD,( Professor in plastic surgery, National Taiwan University Hospital; Director of Center for Human Appearance, Taipei, Taiwan), has been working in Plastic Surgery for 38 years, focusing mainly in aesthetic facial recontouring, and aesthetic breast recontouring, has published over 200 articles, written 4 books and completed 3 chapters in related books.
An Efficient Breast Cancer Prediction System Using a Machine Learning Technique

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Introduction

The effectiveness of machine learning techniques in healthcare exploration is growing progressively. Most of the possible medical flaws can be avoided by using an efficient system to compromise healthcare data to be analyzed in lesser time and a more comprehensive manner. Breast cancer turns out to be the major source of death amongst women. Accurate and timely prediction of breast cancer permits Doctors or physicians to make the most favorable decision about patient treatment. The convenience of healthcare datasets and data analysis encourages the researchers to apply a study in mining unknown design from healthcare datasets. The goal of this study is to proposal a prediction system that can predict the prevalence of breast cancer on a patient by analyzing a set of features that has been designated from the clinical dataset developed from symptoms and risk factors of breast cancer.

Methods

The Naïve Bayes classifier and the interface were developed using Java programing Language to classify the nature of the tumours. The algorithm was simulated using WEKA class. The cleansing of the data was made through data mining techniques and then applied a Naïve Bayes algorithm to classify the breast cancer type as benign or malignant. The dataset used was gotten and formed from Federal Medical Centers (FMC) Yola and Gombe in Nigeria. All the patients from May, 2018 to May, 2013 constituted the sample population size of the data from the two hospitals. The total number of instances used for the study is 2,048 instances consisting of 11 attributes. The Naïve Bayes technique rest on the famous Bayesian theorem which is a simple probabilistic classifier with strong (naive) independence assumptions.

Results

In analyzing the performance criterion for the Naïve Bayes classifier in predicting breast cancer, accuracy, sensitivity, and specificity have been computed to give a deeper insight into the automatic prediction. Accuracy is the percentage of correct predictions. The precision is the measure of accuracy provided that a specific class has been predicted. The sensitivity is the measure of the ability of a prediction model to select instances of a certain class from a data set. The specificity corresponds to the true negative rate which is commonly used in two-class problems. The experimental result of the prediction model shows a percentage accuracy score of 98.9%, Sensitivity Rate 99.9 and specificity 88.9.

Conclusion

This work was realized using a machine learning technique which is useful in diagnosing cancer type. It assists oncologists in decision-taking for the cancer patients. The experimental results shows that our method provides better accuracy in predicting the cancer type as Malignant or Benign.

Biography

UPCOMING CONFERENCES 2020

2nd Dentistry and Oral Health Summit
during 13-14, April, 2020 Las Vegas, USA
https://www.dentalcareconference.com/

2nd International Conference on Aging & Gerontology
15-16 June, 2020 London, UK
https://www.agingcongress.com/

Global Conference on Sexual Medicine
during 30-31 March, 2020 Dubai, UAE
http://wwwsexualmedicineconference.com/

Human Nutrition and Food Science Conference
during 30-31 March, 2020 Dubai, UAE
http://www.hnfsconference.com/

Catalysis and Chemical Engineering Conference
15-16 June, 2020 London, UK
http://catalysisummit.com

Global Summit on Climate Change
15-16 June, 2020 London, UK
http://climatechangecongress.com