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Zhijie Zhang et al., J Cancer Sci Ther 2016, 8:8(Suppl)
http://dx.doi.org/10.4172/1948-5956.C1.082

SRGN interact with TGFβ2 and endow triple-negative breast cancer with higher metastasis properties

Zhijie Zhang, Guopei Zheng, Kai Luo, Yingen Deng and **Zhimin He**
Guangzhou Medical University, China

Patients with triple-negative breast cancers (TNBC) are at high risk for recurrent or metastatic disease despite standard treatment, underscoring the need for novel therapeutic targets and strategies. Several studies have been reported that the proteoglycan serglycin (SRGN) play an important role in tumor metastasis. However, the function of SRGN in breast cancer is not yet clear. Here, we report the SRGN as a functionally significant regulator of metastasis in TNBC. Our results show that SRGN expression levels were significantly higher in TNBC patient tissues and cell lines than those in non-TNBC. The shRNA-mediated inhibition of SRGN expression blocked serglycin secretion and the invasive motility of TNBC cell line (MDA-MB-231), reducing metastatic capacity in vivo by suppresses transforming growth factor-β2 (TGFβ2) secretion and epithelial-to-mesenchymal transition. Conversely, SRGN overexpression in poorly metastatic non-TNBC cell line (MCF-7) increased their motile behavior and metastatic capacity in vivo by promotes TGFβ2 secretion and epithelial-to-mesenchymal transition. Interestingly, TGFβ2 can also increase SRGN mRNA expression by activating Smad3 to target SRGN relative promoter domain in TNBC cells. Our findings establish that SRGN interact with TGFβ2 regulates TNBC metastasis via autocrine and paracrine routes, and that it serves as a potential drug targets to prevent metastatic disease of breast cancer.

Biography

Zhimin Zhang is the Director of cancer research Institute of Guangzhou Medical University. He has published more than 50 papers in reputed journals and has been serving as an Editorial Board Member of repute.

hezhimin2005@yahoo.com

Notes:

Jafari Shobeiri M et al., J Cancer Sci Ther 2016, 8:8(Suppl)
http://dx.doi.org/10.4172/1948-5956.C1.082

Role of educational intervention in improving the knowledge, attitude and practice of Iranian women about breast self examination

Jafari Shobeiri M, Shahamfer J and **Pouraliakbar Y**
Tabriz University of Medical Sciences, Iran

Aim: The aim of this study was to evaluate the effects of education on knowledge and attitude of breast self examination (BSE) among women.

Method: Knowledge and attitude of BSE among 200 married women aged 15-50 years who referred to the preventive health care centers were evaluated by a preliminary study. After that, an educational program about BSE was carried out every month till 6 months. Subjects were divided into intervention group and control group (each group containing100 women) by randomized sampling. Six months later, final situation was evaluated.

Results: The mean age of women was 31 years. The knowledge ratio about BSE in the study group increased from 23.3% to 77.4% while it was 30.8% in the control group. Similarly the ratio of regularly performing BSE in the study group increased from 9.0% to 55.3.3% while the same ratio was found 11.7% in the control group. The differences between two groups before and after training were statistically significant. Also the result determined that there was a meaningful relationship between age and skills of women about BSE (p=0.005). There was significant relationship between literacy and BSE (P=0.000)

Conclusion: The results of this study suggest that an educational program can be significantly effective in improving BSE practice in women which is the best way of screening program.

Biography

Jafari Shobeiri M is working as a Professor at Tabriz University of Medical Sciences Iran, in the department of Women's Reproductive Health Research Center, Department of Gynecologic Oncology and also working in the Alzahra Hospital.

jafarimehri@yahoo.com

Notes:

Ana T Limon-Miro, J Cancer Sci Ther 2016, 8:8(Suppl)
http://dx.doi.org/10.4172/1948-5956.C1.082

Effect of an individualized diet in body composition of breast cancer patients attending a navigator program in Sonora, Mexico

Ana T Limon-Miro
Universidad de Sonora, Mexico

Studies have shown that nutrition interventions in breast cancer patients improve their nutritional status and quality of life. Data about costs of specialized nutrition intervention programs regarding their cultural and socioeconomic status is limited. The aim of this study was to design an individualized diet for each breast cancer patient in a Navigator Program (NP) and determine the economic cost of the nutritional plan according to their socioeconomic status. Total energy expenditure was calculated and a caloric restriction was done according to the patient's nutritional status. The nutritional plan followed NIH guidelines and was adapted to the Mexican Food Equivalent System. A weekly menu was provided by a nutritionist based on four different configurations (w leguminous + w/wo milk or wo leguminous + w/wo milk) generated from the patient's usual diet. Weekly costs were calculated for each configuration based on local market prices in Hermosillo, Sonora, Mexico. From 27 subjects, 85% (23/27) had overweight or obesity, 61% (11/18) had a weekly income above 5 minimum wages, and 41% (11/27) received a 1500 kcal/d nutrition plan. The average weekly cost of a 1500 kcal nutritional menu was $504 MNX ±46 [$27 USD ±2], equivalent to 7 minimum wages/week ($73 MNX [$4 USD], minimum wage in Mexico). Animal protein was the most expensive food group, followed by vegetables and fruits. Health professionals in navigator programs should be aware of diet costs and socioeconomic data of breast cancer patients in order to improve their adherence to treatment, nutritional status and quality of life.

Biography

Ana T Limon-Miro is a nutritionist with a Master degree in Health Sciences at Universidad de Sonora. She is the coordinator of the nutrition area in the Navigator Program for Sonoran Breast Cancer patients at Universidad de Sonora. She is currently a PhD student in the Science Program of Centro de Investigación en Alimentación y Desarrollo A.C. interested in nutrition intervention programs in breast cancer patients.

analimonmiro@gmail.com

Notes:

Jeremy Grant et al., J Cancer Sci Ther 2016, 8:8(Suppl)
http://dx.doi.org/10.4172/1948-5956.C1.082

Importance of a multidisciplinary approach to breast cancer treatment in pregnancy: Case report of new diagnosis of pregnancy-associated breast cancer

Jeremy Grant and **Jessica Hoyson**
Western Pennsylvania Hospital, USA

Pregnancy-Associated Breast Cancer (PBAC) is a rare diagnosis and includes new diagnoses of cancer both during pregnancy as well as within the first year post-delivery. Due to its rarity, there is of yet no gold standard treatment nor is there sufficient scientific data to support a standardized regimen. We report a case involving a 35-year-old G2P1001 who was diagnosed with clinical stage II (T2 N1) breast cancer in the second trimester of pregnancy after physical examination revealed a palpable mass. Ultrasound-guided biopsy revealed poorly differentiated infiltrating ductal carcinoma, nuclear grade 3, with micropapillary features, ER (90%), PR (25%), positive HER2 positive 3+ with Ki67 index 75%. After extensive counseling and discussion between Obstetrics, Maternal Fetal Medicine, Breast Surgery, Neonatal ICU, and Oncology, a decision was made to initiate neoadjuvant therapy with Adriamycin and cyclophosphamide. She completed 4 total NAC treatments prior to delivery then began weekly Taxol plus Herceptin and Perjeta following delivery. This patient strongly desired to carry the pregnancy to term and began treatment prior to delivery, making this case unique in comparison to other publications in which treatment was delayed until after delivery, or the pregnancy was terminated prior to beginning treatment. Our case highlights the importance of a multi-disciplinary approach to counseling these patients as there remains no gold standard of care at this time.

Biography

Jeremy Grant completed his MD at Temple University School of Medicine in Philadelphia, Pennsylvania. He is a third-year resident in Obstetrics & Gynecology at Western Pennsylvania Hospital.

Jessica Hoyson completed her MD at Rush University in Chicago, Illinois, and her residency at MetroHealth/Cleveland Clinic in Ohio. She has published several articles in reputable journals on gynecologic malignancies, minimally invasive surgery, and ethics, a textbook chapter on single-site laparoscopy, and presented a surgical film at the national meeting for the Society of Gynecologic Oncology. She is currently on staff at the Western Pennsylvania Hospital in the department of Obstetrics & Gynecology.

jeremy.grant@ahn.org
Jessica.Hoyson@ahn.org

Notes:

Mandeep Kaur et al., J Cancer Sci Ther 2016, 8:8(Suppl)
http://dx.doi.org/10.4172/1948-5956.C1.082

Targeted four-node sampling of axilla: A simple, reliable and cost-effective approach in the management of breast cancer

Mandeep Kaur, Chintamani, Mukesh Garg, Manu Kaushik, Manish Kumar Mishra, anju Bansal, Usha Agarwal and **Sunita Saxena**
Safdarjung Hospital, India

Background: Axillary lymph nodes are surrogate markers for mapping the optimal management of axilla in breast cancer, and their assessment is pivotal to management and outcome. Until now, the assessment of axillary lymph nodes largely relies upon sentinel node biopsy (dual method) or conventional lymph node dissection. The morbidity of axillary lymph node dissection however is well known. Sentinel node biopsy is, thus, considered in a clinically node-negative axilla. However developing economies face the dilemma and challenges of matching up to the high cost of gamma probe, the vagaries of its learning curve, and often, the advanced stage of disease at which the patients present. Also, with the advent of neo-adjuvant chemotherapy, the axilla can be down staged to a node negative status (N_0). In this setting, a targeted four-node sampling (FNS) can offer a simple, reliable and cost-effective approach to the assessment of axilla.

Material & Methods: A total of 160 patients with locally advanced breast cancer who had received neo-adjuvant chemotherapy from the nucleus of this study. In each patient, axillary mapping was done using peri-areolar injection of 3 ml of methylene blue dye immediately before surgery. Four blue nodes from the specified anatomical site at level-I were picked up and subjected to frozen section. The axillary dissection was subsequently completed in a conventional manner in all patients irrespective of the outcome of frozen section and the entire specimen was sent separately for histopathological examination. The outcome of frozen section was compared and correlated with the actual histopathological assessment of entire axilla to find out the sensitivity, specificity, and false negative rates of the technique.

Results: The sensitivity and specificity of FNS were found to be 89.5% and 93.3% respectively. The negative and positive predictive values were found to be 84.6% and 100% respectively.

Conclusion: It was observed that 'targeted' FNS using methylene blue dye can serve as a reliable and inexpensive alternative to other techniques for addressable of axilla even in locally advanced breast cancers. This is particularly relevant in developing economies where majority patients still present as locally advanced; and high end facilities, such as gamma camera and isotope studies, are scarce.

sandhu.mandeep02@googlemail.com

Notes:

Mandeep Kaur et al., J Cancer Sci Ther 2016, 8:8(Suppl)
http://dx.doi.org/10.4172/1948-5956.C1.082

Claudin-4 as predictor of response to neo-adjuvant chemotherapy in breast cancer

Mandeep Kaur, Chintamani, Niranjan Kumar, Deepak Diwakar, Manish Kumar Mishra, Ravi Prakash Verma, Mandeep Kaur, Anju Bansal and **Fouzia**
Safdarjung Hospital, India

Background: Neo-adjuvant chemotherapy (NACT) is an integral part of multi-modality approach in the management of locally advanced breast cancers (LABC) and is vital to predict response in order to tailor the regimen for a patient. Claudins are important trans-membrane proteins in the inter-cellular tight junctions. Claudin-3, 4 & 7 are often present in breast tumor and are occasionally expressed at elevated levels. A prospective clinical study was conducted to assess whether these markers could serve as reliable predictors of response to NACT in patients with LABC.

Materials & Methods: 80 LABC patients after complete routine and metastatic work up were subjected to trucut biopsy and the tissue evaluated, immunohistochemically for claudin-4. Three cycles of NACT were given at three weekly interval & patients were assessed for clinical response following each cycle. Modified radical mastectomy was performed in all patients three weeks after the third cycle and specimen was re-evaluated for any change in the claudin-4 expression. The immunohistochemical response (change in the expression of claudin-4 marker) and the clinical response were correlated.

Results: A statistically significant correlation was observed between clinical and immunohistochemical response to NACT. Increase in the expression of claudin-4 indicated poor response to NACT and thus a poor outcome.

Conclusions: Claudin-4 can be effectively utilized as predictors of response to NACT.

sandhu.mandeep02@googlemail.com

Notes:

Mandeep Kaur et al., J Cancer Sci Ther 2016, 8:8(Suppl)
http://dx.doi.org/10.4172/1948-5956.C1.082

Effect of vedic hymns on response to neoadjuvant chemotherapy in breast cancer: A randomized clinical study

Mandeep Kaur and **Chintamani**
Safdarjang Hospital, India

Introduction: Vedic hymns are the oldest layers of Sanskrit literature and oldest scriptures of Hinduism considered sacred by vedic religion. Integrative oncology is being studied and considered for complete cancer care. Benefits of yoga have been established and it is being offered at many centers. The healing effect of spirituality and prayers are well recognized. Prayers act by relieving stress. People who worship regularly are more optimistic and hopeful and are less stressed. They have a strong immune system, lower blood pressure and a better capacity to face adversity.

Aims & Objectives: To assess the effects of vedic hymns on response to neoadjuvant chemotherapy and to assess the effects of these hymns on the quality of life of the patients

Materials & Methods: A randomized clinical study was done in patients of breast cancer that were taken up for neoadjuvant chemotherapy. Patients were matched for age, stage of disease, and co-morbidities. Patients were randomized into two groups by closed envelope method. Group 1- Patients that underwent neoadjuvant chemotherapy and were counseled to listen to vedic hymns during neoadjuvant chemotherapy. Group II- Patients that underwent neoadjuvant chemotherapy but were not subjected to hymns. Response to neo-adjuvant chemotherapy was assessed using RECIST criteria [clinical and sonological]. Responders were those with >50% reduction in tumor size. Non-Responders were <50% reduction, stable disease or progression. The Hospital anxiety and depression score (HAD score) was also used to assess the quality of life of these patients. Vedic hymn used was Gayatri mantra

Results: Of these 30 patients who participated in our study 20 patients (66%) patients were responders and of these 20 patients, 13 (65%) belonged to the group 1, which is statically significant. Group 1 minimum HAD score of 2 and maximum HAD score of 6. Group 2- minimum HAD score 7 and maximum of 13. The difference in HAD score is statistically significant.

Conclusion: There was significant increase in response to neoadjuvant chemotherapy in the group that listened to vedic hymns. There was overall better performance in the hymns group as compared to group II.

sandhu.mandeep02@gmail.com

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Fabio Ricci et al., J Cancer Sci Ther 2016, 8:8(Suppl)
http://dx.doi.org/10.4172/1948-5956.C1.082

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Sentinel lymph node biopsy in breast cancer: The approach in day surgery under local anesthesia for quality-of-life and significant cost reduction

Fabio Ricci, L Rossi, C De Masi, G Fanelli, M Dorkin, A M D Achille, S Tomao, D Ribuffo, C Della Rocca and **G De Toma**
Sapienza University of Rome, Italy

Sentinel lymph node biospy (SLNB) is widely used in the management of breast cancer patients. Purpose of the study is to investigate the approach in day-surgery (DS) under local anesthesia (LA), for quality of life and significant cost reduction. We performed 652 quadrantectomy and SLNB in day-surgery (DS) under local anesthesia (LA) at the same time. All patients underwent pre-operative lymphoscintigraphy with injection of 12-15 MBq 99Tc colloidal albumin particles. All patients underwent surgical treatment 3-12 h later. Axillary incision was 3-4 cm. 10 patients underwent pre-operative lymphoscintigraphy the radiotracer did not show any sentinel lymph node (SLN), in 6 cases we performed axillary dissection (AD). In 3 cases the axilla was positive. In 15 cases of multifocal (MF) and 10 of multi-centric (MC) invasive breast cancer, the SLN was identified in axilla and SLNB was performed. Only 2 case of MC cancer the SLN was positive. 30 patients classified T4b, were treated with neo-adjuvant chemotherapy (NC). After completion of NC, we performed SLNB. In these patients SLN was negative. 14 cases showed axillary isolated tumor cells (ITC), 39 micrometastases and 69 macrometastases. The SLN identification rate was 99%. This approach is safe, well accepted by patients who reported with a questionnaire better quality of life (99%). We observed less incidence of nosocomial infection and loss of working days. Operations in DS and LA can be easily managed, leading to a significant cost reduction over 55% less expensive than the same operation performed under general anesthesia.

Biography

Fabio Ricci graduated in Medicine and Surgery with Honors, University of Rome "La Sapienza" in 1984. He is specializing in Gynecology and Oncology with honors. He is a breast specialist surgeon and Surgeon General. He is the author and co-author for 80 scientific papers published in national and international journals.

dr.rossi@ymail.com

Notes:

Vedavyas Gannaman, J Cancer Sci Ther 2016, 8:8(Suppl)
http://dx.doi.org/10.4172/1948-5956.C1.082

Multiple medical problems as a unique risk factor for low utilization of screening mammogram and Pap smear in an underserved population

Vedavyas Gannaman
Saint Peter's University Hospital, USA

Background: Screening mammograms and pap smears have shown to reduce mortality by early detection of malignancy. The utilization of these screening tests is influenced by many factors. We discovered opportunities to improve compliance in our resident clinic patients.

Methods: The study was conducted by residents during their clinic duties and designed as a cross-sectional study. The study period was two separate clinic weeks, Each resident assessed his own patients during respective encounters at the clinic for compliance with screening tests. Among patients who were not up to date, the reasons were asked with both open statements and directed questions.

Results: A total of 56 (N) patients were found appropriate for either screening mammogram (N1= 37 patients) or Pap smear (N2 = 54 patients). Thirteen patients (35%) in Mammogram (M) group and 16 (30%) patients in Pap smear (PS) group were not up to date. The common reason noted was having active or multiple medical issues (10.8% of M group and 9% of PS group) delaying utilization of these tests among other reasons.

Conclusion: Previous studies identified factors like ethnicity, age, education level, socioeconomic status and type of insurance influenced the utilization of these screening tests. Our study revealed having active or multiple medical problems as a common reason for low utilization of screening tests in our clinic population. This group of patients can be targeted with interventions like frequent office visits, dedicated health maintenance encounter or follow up by ancillary providers while using minimal resources.

Biography

Vedavyas Gannaman completed Internal Medicine training from Saint Peter's University Hospital, New Brunswick. He aspired to complete a fellowship in the field of Hematology Oncology. Quality improvement projects are his favorite research projects. He is currently working as Chief resident at Saint Peter's University Hospital.

vedavyasg22@gmail.com

Notes:

Juskaran Chadha, J Cancer Sci Ther 2016, 8:8(Suppl)
http://dx.doi.org/10.4172/1948-5956.C1.082

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September 19-21, 2016 Phoenix, USA

Discordance of oncotype DX score among multi-centric primary invasive cancers in the same breast

Juskaran Chadha
Icahn School of Medicine

Background: Presence of heterogeneity by clinico-pathologic features in multicentric primary invasive breast cancer is known. However, the variability of 21-gene Oncotype Dx® Recurrence Score (RS) in multi-centric cancers is not well described.

Methods: We evaluated the concordance of Oncotype Dx® RS tested on primary ipsilateral multi-centric breast cancer. From the institutional Oncotype Dx® database of 1304 breast cancer patients, 29 were identified to have 2 separate pathology specimens tested for RS. Nineteen patients had synchronous bilateral invasive cancers, while 10 patients had ipsilateral multicentric primary invasive cancer and are the subject of this study. The RS<18, 18-30, and >31, was categorized as low, intermediate, and high risk, respectively. The RS of the multicentric specimens was scored concordant if both values fell in the same risk category, and discordant otherwise. Results: Invasive ductal carcinoma was the most common histology. Overall RS distribution of low, intermediate and high risk was 50%, 35% and 15%, respectively. By histologic grade (G) 1, G2, and G3, the distribution of high risk RS was 0%, 16% and 66%, respectively. In 5 patients (50%), the RS of multi-centric cancers was discordant. Two patients had both low and intermediate risk, 2 patients had low and high risk, and 1 patient had intermediate and high risk.

Conclusion: The 21-gene RS notes a significant rate of discordance in primary multi-centric breast cancer. This observation highlights the heterogeneous biology, and suggests assessing more than one sample in multi-centric disease may be a useful strategy to guide risk-tailored cancer treatment.

jchadha88@gmail.com

Notes:

Aurélie Bellanger et al., J Cancer Sci Ther 2016, 8:8(Suppl)
http://dx.doi.org/10.4172/1948-5956.C1.082

A new isoform oh the znf217 oncogene: deciphering the functional impact and the prognostic value in breast cancer

Aurélie Bellanger[1,2], **Caterina F. Donini**[2,3], **Julie Vendrell**[1,2] and **Pascale A Cohen**[1,2]
[1]Université Lyon 1, Lyon, France
[2]INSERM U1052, CNRS UMR5286, Centre de Recherche en Cancérologie de Lyon, Lyon, France
[3]Département Cancer et Environnement, Centre Léon Bérard, Lyon, France

Breast cancer is the most frequently diagnosed cancer and represents the main cause of women death by cancer. Our group and others have shown that the ZNF217 candidate oncogene provides a selective advantage to cancer cells by inducing resistance to chemotherapy, in particular by interfering with survival pathways or by deregulating apoptotic signals. High expression levels of ZNF217 have also been associated with invasion/migration *in vitro* and metastases development *in vivo* in nude mice. Our group has reported that high levels of *ZNF217* mRNA represent a new biomarker for poor prognosis associated with shorter relapse-free survival in breast cancer. By classic PCR and further sequencing, we have found and validated the existence of a new ZNF217 isoform in a panel of breast tumors samples. We aimed at elucidating the impact that plays this new isoform in breast cancer, in comparison with that of ZNF217 wild-type (WT). We have cloned this ZNF217 variant sequence in a eukaryotic expression vector and MDA-MB-231 breast cancer cells were stably transfected with the ZNF217-WT or the ZNF217 isoform encoding plasmids. Ectopic expression of ZNF217 isoform or ZNF217-WT was validated by RT-qPCR in MDA-MB-231 transfected cells, and several cellular clones were established. We then aimed at investigating and comparing the phenotype displayed by ZNF217 isoform transfected cells in regards with ZNF217-WT transfected cells. Finally, we investigated by RT-qPCR the pattern of expression of ZNF217-WT and ZNF217 isoform in a set of 113 primary breast tumors samples.

Biography

Prof P.A. Cohen is Professor in Molecular Biology and Biotechnology in the University of Lyon, France since 2005. She is also Principal Investigator and manages a team in the CRCL Cancer Research Center of Lyon CRCL UMR INSERM 1052-CNRS 5286, France. She got a degree in Pharmacy (1991), a PhD in Biomedical Sciences (1995, Univ. Montpellier, France). She was Post-doctoral fellow in the Cancer Research Campaign Laboratories, University of Dundee, Scotland, U.K. (1996-98, Advisor: Prof. D.P. Lane, F.R.S.) and in Sanofi-Research company (Montpellier, France), Immuno-Oncology Department (1998-99). Currently, her projects are dedicated to breast cancer research: In vitro, in vivo, genomics and translational medicine approaches to decipher pharmacologic resistance to anticancer therapies, the deleterious role of the ZNF217 oncogene, the identification of new prognostic or predictive biomarkers, and the impact of environmental factors exposure on tumor progression. She got several honors such as Exceptional Class Professor Distinction and her research work has been awarded by many prizes. She is also committed in several national and international education programs and is frequently requested as external scientific referee for international scientific journals or committees.

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Accepted Abstracts

J Cancer Sci Ther 2016, 8:8(Suppl)
http://dx.doi.org/10.4172/1948-5956.C1.082

Perspectives and attitudes of Jordanian male college students on breast cancer screening

Khadeejeh Al Dasoqi, Ruqayya Zeilani, Hala Bawadi and **Aysha Al Dasoqi**

The purpose of this study is to understand the attitudes of young Jordanian men towards breast cancer screening practices. A qualitative descriptive design informed by Clendenin and Connelly was used. Thirty-seven in-depth semi-structured individual audio-taped interviews were conducted. The analysis of the men's attitudes toward breast cancer captures the perception that breast cancer is an illness that occurs mainly later in life. This was associated with the perception of negative impact of cancer diagnosis on a young woman's social status and family role. Men believed that breast cancer preventive practices must be performed in a similar context of women's religious and cultural background. Younger generations are in need for health education related to breast cancer and its screening. It is important to provide support and guidance for young men to be more involved in providing early detection of breast cancer.

Intracystic mucinous carcinoma of breast –A case report

Barani Karikalan and **Thanikachalam Pasupathi**
Mahsa University, Malaysia

Cystic breast mass is one of the common conditions that a female patient presents with in any breast clinic. Carcinomas that commonly present as cystic lesions are papillary carcinomas, cystic degeneration of ductal carcinomas and very rarely mucinous carcinomas. Regardless of histological type, breast carcinomas that present as cysts have a very good prognosis. So, evaluating cystic lesions of breast to diagnose intracystic cancers at an early stage plays an important role in the prognosis of the patient. Here we present a case of intracystic mucinous carcinoma in a 31-year-old patient. The patient came with the complaint of having noticed a mass in her left breast for the past one month. On examination, the mass was located in the upper outer quadrant of left breast measuring about 3x2cm. The mass was found to be soft to firm in consistency and was not attached to the overlying skin or the chest wall. No other masses or axillary lymph nodes noticed. FNAC was done and revealed inconclusive report. The mass was then excised and sent for histopathological examination. On gross examination, the breast lump specimen was a cystic nodule measuring about 3.2x2cm. On cut section, there was a well circumscribed cystic lesion measuring about 3x1.8cm. Excised margins were free. On microscopy, the lesion was a well-circumscribed mucinous cystic lesion containing mucinous pools suspended within which well-differentiated malignant ductal component distributed in the form of solid nests and occasional glandular configuration. A diagnosis of intracystic, grade I, mucinous carcinoma of the breast was made with Modified bloom Richardson's grading of 4/9. Intracystic breast carcinomas are not only of diagnostic curiosity, but are also of prognostic significance.

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J Cancer Sci Ther 2016, 8:8(Suppl)
http://dx.doi.org/10.4172/1948-5956.C1.082

Contrast enhanced digital mammography: Our experience

Bhavika K Patel
Mayo Clinic, USA

Contrast Enhanced Digital Mammography is the newest of the contrast enhanced imaging technologies in breast imaging. CEDM holds great promise to improve breast cancer screening by addressing the potential drawbacks of MRI. CEDM generates a high-resolution, low-energy, full-field digital mammography image and, similar to MRI, a contrast-enhanced image that provides lesion vascularity information. The resulting contrast enhanced subtraction images maximize the conspicuity of iodinated contrast agent in the breast while minimizing the structured noise of non-enhancing fibroglandular tissue, thus revealing lesions with higher neovascularity and extracellular leakage of contrast agent more apparently. The high spatial resolution of the digital detector reveals lesion details with approximately ten times the spatial resolution of breast MRI. We present our clinical experience of over 400 CEDM cases over the past year of diagnostic use. In this presentation we will demonstrate classic examples of benign and malignant breast cases on CEDM. We will also present general overview of study results and a brief discussion on how to implement CEDM into the workplace.

Sentinel lymph node detection in breast surgery using ICG vs. 99Tc: A comparison among different diagnostic protocols

Cattin F, Fogacci T, Frisoni G L, Fabiocchi L, Dellachiesa L, Semprini G and **Samorani D**

Background: Equivalence in sensibility and specificity between 99Tc and ICG (Indocyanine Green) in sentinel lymph node detection for breast cancer is nowadays demonstrated. The radioactive medium of contrast needs to be injected a Nuclear Medicine Department. On the contrary, ICG can be injected directly in the operatory theatre. This implies that, using 99Tc, patients must undergo two travels instead than the one required using ICG. Aim of our study is to determine the economic expenses linked to the two possible ways to detect sentinel lymph nodes in breast surgery.

Materials & Methods: 291 Patients (01/2013-07/2014) of the Breast Unit of the Santarcangelo di Romagna Hospital underwent both a 99Tc injection and a ICG injection during the validation study of the ICG technique. Patients received 99Tc in the Nuclear Medicine of the Cesena Hospital (the nearest to the Santarcangelo one). The cost for each kilometer has been calculated (considering a 0.2788 € refund for kilometer), as well as the carbon footprint (considering a mean CO_2 emission of 118.2 g/km). 99Tc injection has a cost, all considered, of 1500€ for one patient, and just 100€ are due to the tracer itself. ICG costs 302€ each patient, which become 102€ after the first 250 patients, considering the infrared detecting machine amortization.

Results: An overall amount of 49778.5Km has been required when using 99Tc, on the contrary IDG has required 18861.7Km. This implies a carbon footprint of 5.88 tons of CO_2 when using 99Tc and of 2.22 tons of CO_2 when using ICG. The overall amount of costs of the 99Tc pathway has been 450363.62€. Considering the same patients, the overall cost of the ICG pathway has been 84883.39€. This means that ICG costs are 18.84% of the 99Tc costs.

Conclusions: ICG is a safe tracer, as it has a sensibility and specificity equal to the radioactive one. It is cheaper as the traditional radioactive techniques as well, especially if surgery is performed in peripheric centers or in hospitals which do not own a Nuclear Medicine Department. Considering our results, we can suggest the use of ICG for the sentinel lymph node detection in breast surgery, not only as safe technique, but also as cost-effective one.

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J Cancer Sci Ther 2016, 8:8(Suppl)
http://dx.doi.org/10.4172/1948-5956.C1.082

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Value of sonoelastography scoring and strain ratio in assessment of malignant breast solid masses

Doaa Ibrahim Hasan
Zagazig University, Egypt

Aim & Purpose: To detected sonoelastography appearance variation in different pathological types of the malignant solid breast masses.

Patient & Methods: From April 2014 to March 2015, 85 consecutive women presented by solid breast lesions that were confirmed at core needle biopsy to be invasive cancers. A total of 79 histopathologically confirmed malignant lesions as we excluded 6 cases. B-mode sonographic and sonoelastographic images were obtained for each lesion, then elasticity scores had been determined with a 5-point scoring method. Also strain indices of the lesions were calculated. The findings were compared with histopathologic findings. The diagnostic performances of the elasticity scoring and strain index methods were determined.

Results: Hard malignant lesions (score 4.5) were 73 (92.4%) and soft malignant (score 2.3) were 6 cases (7.5%). No statistically significant size difference between tumors classified as true-positive (hard appearing malignant on sonoelastography) and those classified as false-negative (soft appearing malignant on sonoelastography). The mean strain ratio for the hard malignant group was 17.867±0.96, while the mean strain ratio of malignant soft lesions was 4.458±0.721, significant difference was found between the two groups ($P<0.05$) and statistically significant association between histopathologic results and sonoelastographic scores (P-value<0.001).

Conclusion: Malignant solid masses sonoelastography results not affected by tumor size but great variation according to its pathological type.

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J Cancer Sci Ther 2016, 8:8(Suppl)
http://dx.doi.org/10.4172/1948-5956.C1.082

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September 19-21, 2016 Phoenix, USA

Post-quadrantectomy reconstruction of the mammary central quadrant by cutaneous glandular-adipose flap based on the Würinger septum

Domenico Samorani, Federico Cattin, Gianluca Frisoni, Tommaso Fogacci, Laura Dellachiesa, Gloria Semprini and **Luca Fabiocchi**
Santarcangelo di Romagna Hospital, Italy

Introduction: Central quadrantectomy with nipple-areola complex (NAC) resection removes a cylinder of breast tissue deep down to the pectoral muscle. This operation is required to remove any central neoplasia less than two centimeters in diameter, or any Paget disease without mass or with a mass of less than two centimeters. We show our reconstruction approach using a cutaneous-glandular-adipose flap based on the Würinger septum, between the 4th and the 5th inter-costal space, where several perforating vessels do run.

Materials & Methods: This study comprises 35 patients with central breast tumor, who underwent a central quadrantectomy in the Breast Pathology and General Surgery Operative Unit of the Franchini Hospital in Santarcangelo di Romagna (AUSL Area Vasta Romagna), between April 2009 and September 2013. In 16 of these cases we also carried out a reductive mastoplasty based on a superior pedicle arranged symmetrically, while in the remaining 7 cases the contralateral breast was not surgically treated.

Results: Neither major complications such as hematomas or infections, nor total flap necrosis took place. We refer only 3-partial necrosis of the cranial fourth of the flap. In case of a symmetrizing mastoplasty we obtained a very good aesthetic result. In the remaining cases we observed a small asymmetry, absolutely well tolerated by the patients. All the patients were satisfied.

Conclusions: Central quadrantectomy and breast reconstruction using a sub-cutaneus pedicular flap present a valid therapeutic option for patients affected by central breast tumors, and helps to overcome the conflict between oncologic safety and cosmetic satisfaction. This subcutaneous pedicular flap presents a very good mobilization which does not constrain, in its cranial advancing, the breast morphology. Considering the simplicity of the procedure and to the low number of side effects, we consider this method as an optimal alternative to the direct closure after the removal of the central quadrant including the nipple areola complex (NAC).

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J Cancer Sci Ther 2016, 8:8(Suppl)
http://dx.doi.org/10.4172/1948-5956.C1.082

Vertical strip technique: More effective at detecting breast masses

Meredith Amenell, Heidi Braun, Lauren Herring and **Allison Sarcinella**

Background/Purpose: Clinicians use a variety of techniques to conduct a clinical breast exam (CBE). There is ample research evaluating the efficacy of the CBE, but few studies have focused on the examination technique. The purpose of this study was to evaluate and compare the accuracy of CBE techniques on premenopausal women ages 21-55 in order to enhance the ability to detect breast masses in a clinical setting.

Methods: Studies were filtered using specific search limits and inclusion criteria, which included study design, data published within the last 10 years, use of breast search patterns, and age of participants. Observational prospective cohorts and randomized controlled trials were the preferred study designs, with premenopausal females ages 21-55 being the population of interest. The CBE utilizing the vertical strip, circular or radial spoke technique were the interventions included in the search. Any detection of masses was the desired outcome among the reviewed studies. Electronic searches utilizing the Cochrane Library, Medline, Google Scholar, and the *New England Journal of Medicine* were the search engines used to find desired studies. Quality assessment was performed using The Cochrane Collaboration's Tool for Assessing Risk of Bias. Empirical data was extracted from the remaining analyses and only comparisons of breast search pattern techniques within each study were performed to limit potential bias.

Results: The main study that was examined compared the percentage of breast tissue coverage in three CBE techniques; the vertical strip pattern, the circular pattern, and the radial spoke pattern. In the first trial of the study, the vertical strip pattern encompassed more thorough coverage of the total breast area (64.4% coverage) when compared to the circular pattern (38.9% coverage). The results of a second trial showed the vertical strip pattern also produced more thorough coverage of the total area (67.9% coverage) when compared to the radial spoke pattern (44.7% coverage). All differences were statistically reliable.

Conclusion: Overall, clinical breast exams have been shown to be effective at detecting breast masses in premenopausal women who are 21-55 years of age. When comparing the various techniques used during a CBE, the vertical strip technique has been shown to have more thorough coverage of the breast tissue and allows a greater ability to detect breast masses than the circular or radial spoke technique. Some limitations noted include the broad age range used since most malignant masses occur after the age of 40, the years of experience clinicians had performing CBE, as well as the type of clinicians involved in the studies (i.e. OB/GYN, PCP). Future studies should focus on the detection rate of actual breast cancers versus benign findings such as fibroadenomas or fibrocystic breast changes when comparing the vertical strip technique to the circular pattern or radial spoke techniques.

hebraun@utmb.edu

J Cancer Sci Ther 2016, 8:8(Suppl)
http://dx.doi.org/10.4172/1948-5956.C1.082

Detection of BRCA 1 founder mutation 185DELAG in breast cancer patients using pyro-sequencing technique

Marwa Hanafi Saied, Salsabeel El boreai and Dalal El Guizery

Hereditary breast and ovarian cancer due to mutations in *BRCA1* and *BRCA2* is the most common cause of hereditary forms of both breast and ovarian cancer and occurs in all ethnic and racial populations. Till now, no assessments of the *BRCA1* founder mutation have been performed by sequencing in Egyptian population. The aim of this pilot study was to detect the prevalence *BRCA1* founder mutation 185DELAG in familial and sporadic breast cancer patients. Blood samples of 100 Egyptian female including 40 patients who had no significant family history of BC in their families (sporadic BC), 40 patients had at least 2 positive family history in their first degree relatives (familial BC), 20 control patients with no BC or history of breast cancer in their families. All subjects went for detection for 185DELAG mutation using Pyrosequencing technique. There were significant differences between familial and sporadic BC as regards their age (P=0.004) and in the premenopausal patients in familial BC than sporadic BC (P=0.02). Moreover, sporadic BC showed a significant increase in the ER&PR +ve, HER2/neu –ve (luminal A) than familial BC patients (P=0.012). As regards the mutation, we found a carrier frequency of 2.5% (95% confidence interval 1.1-2.4). There was no significant relation between mutation and type of BC, or between the hormonal profile of BC tumor and 185DELAG carriers. Conclusion: The prevalence of *BRCA1* 185AG deletion mutation is significantly lower than previously reported using other molecular techniques.

Homeopathy treatment of chemotherapy-induced nausea and vomiting in breast cancer patients: A randomized controlled trial

Neha Sharma[1, 2]
[1]Warwick Research services, UK
[2]NMP Medical Research Institute, India

Background: Chemotherapy-induced nausea and vomiting (CINV) is a common, often overlooked adverse effect of cancer treatment. With poor quality of life, CINV can also cause decline in performance status, functional and physiological impairment. An adjuvant is required particularly where full range of antiemetic treatments is not accessible.

Objective: To assess the impact of homeopathy on nausea, vomiting and quality of life in breast cancer patients undergoing chemotherapy.

Design: Double-blind, placebo controlled, randomized was conducted in four centers in Rajasthan, India. The study medication homeopathy or placebos as an adjuvant were administered first three cycles of chemotherapy. VAS nausea score, frequency of vomiting and HRQoL profile was assessed.

Results: Ninety two female patients completed the study. The VAS nausea score was significantly lower in homeopathy compared to placebo during acute phase (P=0.000) and sustained for overall treatment effect (P<0.001). Similarly, there was significant effect of homeopathy on vomiting (P<0.001). A slight significant change from baseline for global health status (P<0.05) was detected in placebo group and homeopathy (P<0.0001). A clinically relevant 10 points improvement on role functioning (P=0.002) and appetite loss (P<0.0001) were also documented while patients were on homeopathy.

Conclusion: Evidence derived from this study is sufficiently convincing that homeopathy is an effective complementary therapy for CINV. The findings for HRQoL were encouraging with significant improvement in several domains.

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J Cancer Sci Ther 2016, 8:8(Suppl)
http://dx.doi.org/10.4172/1948-5956.C1.082

CDCP1 cleavage is necessary for homodimerization-induced migration of triple-negative breast cancer

Olga V Razorenova
University of California, USA

Triple negative breast cancer (TNBC) is a highly aggressive and metastatic form of breast cancer that lacks the estrogen, progesterone, and HER2 receptors and is resistant to targeted and hormone therapies. TNBCs express high levels of the trans-membrane glycoprotein, CUB-domain containing protein 1 (CDCP1), which has been correlated with the aggressiveness and poor prognosis of multiple carcinomas. Full-length CDCP1 (flCDCP1) can be proteolytically cleaved, resulting in a cleaved membrane-bound isoform (cCDCP1). CDCP1 is phosphorylated by Src family kinases in its full-length and cleaved states, which is important for its pro-metastatic signaling. We observed that cCDCP1, compared to flCDCP1, induced a dramatic increase in phosphorylation of the migration-associated proteins: PKCδ, ERK1/2, and p38 MAPK in HEK 293T. In addition, only cCDCP1 induced migration of HEK 293T cells and rescued migration of the TNBC cell line, MDA-MB-231, expressing shRNA against CDCP1. Importantly, we found that only cCDCP1 is capable of dimerization, which can be blocked by expression of the extracellular portion of cCDCP1 (ECC), indicating that dimerization occurs through CDCP1's ectodomain. We found that ECC inhibited phosphorylation of PKCδ and migration of TNBC cells in 2D culture. Furthermore, ECC decreased cell invasiveness, inhibited proliferation and stimulated apoptosis of TNBC cells in 3D culture, indicating that the cCDCP1 dimer is an important contributor to TNBC aggressiveness. These studies have important implications for development of a therapeutic to block CDCP1 activity and TNBC metastasis.

Implant-based breast reconstruction with abdominal dermal graft

Phuong Viet The Tran, Huong Thien Pham and **Thiep Van Tran**
Ho Chi Minh City Oncology Hospital, Vietnam

Purpose: Implant-based breast reconstruction is an appropriate procedure for post-mastectomy breast cancer patients and other breast diseases. This technique combined with abdominal dermal graft enhances the aesthetic result and decreases the implant complications.

Methods: 4 patients (4 breasts) including one prophylactive mastectomy, two phyllodes and one breast cancer patient underwent mastectomy and implant-based breast reconstruction with abdominal dermal graft. Dermal flap was harvested through a curvilinear lower abdominal ellipse. The epidermis was de-epithelialized with the scapel and full thickness skin was harvested. The upper border of the flap was sutured into the lower border of the pectoral major muscle and the lower border was sutured into the IMF to cover the inferior part of the implant.

Results: Age of the patients is 39, 32, 48 and 45. Implant sizes are 320g, 253g, 290g and 230g. Follow-up are 14 months, 9 months, 4 months and 1 month. There were no implant losses. One case has skin dehiscence; one case has partial arolar-nipple necrosis. No case with seroma or infection.

Conclusions: Implant-based breast reconstruction combined with autologous dermal graft has the advantages of the bioprosthetic mesh without the associated cost. The technique also has low complication rate and could be a good choice for patients in developing countries.

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2nd World Congress on
Breast Cancer

September 19-21, 2016 Phoenix, USA

An investigation of breast cancer risk factors in Pakistani population

Sajid Iqbal[1], Sania Javaid[2], Ghausia Masood Gilani[2], Nayab Batool rizvi[2], Osman Jaffar[3], Abdul Rehman Khawaja[4]
[1]Emirates College of Technology, UAE
[2]University of the Punjab, Pakistan
[3]Molecular Biology and Genetics Laboratory, UAE
[4]Jinnah Hospital, Pakistan

Brest cancer is the second most widespread and the utmost common cancer among females population in the world. It has foremost influence on women health. In 2012, worldwide 1.7 million women were diagnosed with breast cancer However, deaths from breast cancer account for 1.6% of female deaths every year. It is well acknowledged that not only genetic variation but also the environmental factors plays vital role in increase of breast cancer risk. The main aim of this study was to determine the prevalence of breast cancer, also to determine the associated risk factors and to assess the strength of association between these risk factors with breast cancer among Pakistani women. Due to suitability in examining multiple etiological factors for a single disease we carried out an observational cross-sectional case-control study for the present research. The study includes 105 breast cancer patients and a group of 105 controls (healthy women). The information on demographic characteristics along with potential risk factors was collected from both groups by means of a standardized face to face interview. Pearson's Chi-square/Fisher's exact test was applied to find out the association between risk factor and breast cancer risk. Furthermore Logistic regression analysis was used to measure the strength of association, before and after adjusting for the possible confounding effect of the other factors. Nearly all the cases had self-detected breast lump and breast screening was not a widespread term. Delay in referral of the cases was another noteworthy finding. Most frequent age at diagnosis was found as 31-50 years and the most frequent stage was as 2nd stage. The most common histology was unilateral IDC. In multivariate models, Environmental area and exposure to X-Ray radiations were found to be significantly associated with breast cancer risk (p = 0.012, 0.03). While in chi-square association female with a positive family history of breast cancer/ were at higher risk for developing breast cancer (OR = 1.227, 95% CI = 0.655-2.300). An early age at menarche was found to be a strong risk factor for developing breast cancer (p=0.014). Age less than 12 years increased the risk 2.551 times and an older age at menarche was associated with a significant reduction in the risk of breast cancer. Menopausal status and age at last pregnancy was found strong risk factor of breast cancer in our study (P value<0.05) Overall the findings of our study corporate with the results of other previous descriptive findings, though there were few regional and demographic differences were obvious. This study provides important background information for designing detailed studies that aim to improve our understanding of the epidemiology of breast cancer in the Pakistan.

J Cancer Sci Ther 2016, 8:8(Suppl)
http://dx.doi.org/10.4172/1948-5956.C1.082

A literature review of breast cancer screening barriers among Arab American women

Sarah Alkhaifi
University of California, USA

Background: Immigrants of ethnic minorities are the most likely to be diagnosed with advanced breast cancer (BC), and they subsequently have a higher mortality rate than nonimmigrant women. Despite facing this risk of BC, women from ethnic minority groups, such as Arab American women (AAW), are less likely to participate in breast cancer screening (BCS).

Purpose: This integrative literature review is to provide an overview of BCS barriers among AAW.

Methods: Online searches conducted on PubMed, CINAH, Google Scholar and PsycINFO, for articles dating from 2005 to 2015. Some of the keywords used: Arab American, mammogram, BCS, knowledge, attitude, and culture. Fifteen studies met the inclusion criteria which are (1) studies that exclusively or partially consisted of AAW participants; (2) research that studied AAW's attitudes or practices toward BCS; and (3) studies that were written in English.

Findings & Conclusion: BCS barriers among AAW are divided into four main categories that are further subdivided into subcategories, including socio-cultural barriers (family, stigma, and modesty); psychological (fatalism, perceived susceptibility, and fear); organizational barriers (language issues, health care system navigation difficulties, health care provider (HCP) preferences, and physicians' recommendations); and structural barriers (lack of health insurance, transportation issues, and distance of the facilities). Some BCS barriers, including fatalism and family relationships, were also found to be facilitators for some AAW to obtain BCS. The studies contradicted one another as to whether modesty was a BCS barrier. Acculturation and religiosity are one of possible explanations for results contradiction which need consideration in future research.

The diagnostic role of diffusion weighted imaging in the follow up of breast cancer patients after surgical treatment

Soha Talaat, Safaa Saef, Maha Helal and Rasha Wessam
Cairo University, Egypt

Objective: To assess the additive role of Diffusion weighted imaging (DWI) to dynamic contrast-enhanced magnetic resonance mammography (DCE-MRM) in evaluating breast cancer patients who underwent surgery (conservative or radical) and radiotherapy.

Patients & Methods: 60 female patients were included in this prospective study. This study was conducted at both Kasr El-Ainy hospital, radiology department (Women's imaging unit) and National Cancer Institute (N.C.I) from March-2013 until March 2015. All cases underwent either breast conservative therapy (BCT) or radical mastectomy at least 6 months before doing their MRI. Recurrence or post-operative complications were suspected by clinical examination. Mammography and breast US were done followed by MRI examination. DCM was done with DWI with b values of (0, 50, and 850). Pathology or stationery course of lesions on follow up were the gold standard.

Results: Out of the 60 patients, 27 were pathologically proven as malignant lesions compared to 33 patients with variable spectrum of post-operative changes. In our study, DCE- MRI was superior to DWI in diagnosis of malignant lesions with 2 false positive cases and no false negative cases while DWI showed 3 false negative cases and 4 false positive cases. DCE-MRI sequence & DWI showed sensitivity (100%, 88.9%), specificity (93.9%, 87.9%), PPV (93.1%, 88.9%), NPP (100%, 90.6%) & accuracy (96.7%, 88.3%) respectively.

Conclusion: Although DWI is considered a promising diagnostic tool in the diagnosis of breast cancer, its interpretation requires awareness of its possible pitfalls, weakness and strengths. Better results are obtained by combing DWI with dynamic sequences. DWI possibly can be an alternative to contrast injection at certain conditions as in patients with renal impairment.

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Detection of early biological and immunohistochemical markers for ductal carcinoma in situ and prediction of invasive breast cancer

Tanushri Mukherjee

Early diagnosis of breast cancer and effective treatment is the best modality. The breast ductal carcinoma in situ (DCIS) is an early, premalignant lesion in the evolution of invasive breast carcinoma. DCIS represents 20-45% of all new cases of mammographically detected breast cancer, and about 10% of all breast carcinomas. DCIS cases are identified as suspicious micro-calcifications through mammography but that often underestimates the pathologic extent of DCIS and the number of tumor foci. Early detection of DCIS is very important because it is a highly curable disease, with a 10-year cancer-specific survival rate of over 97%. Biomarkers which can be analyzed immunohistochemically in tissue blocks in a noninvasive and economic way. Early detection of DCIS with molecular markers allows early diagnosis and prevention of breast cancer. These markers are DEPDC1, NUSAP1, EXO1, RRM2, FOXM1, MUC1 and SPP1 which allow early detection of DCIS and invasive carcinomas especially in high risk cases with strong familial predisposition.

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http://dx.doi.org/10.4172/1948-5956.C1.082

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Domenico Samorani, Federico Cattin, Gianluca Frisoni, Tommaso Fogacci, Laura Dellachiesa, Gloria Semprini and **Luca Fabiocchi**
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Nutritional status of women of reproductive age in a selected char of Rangpur district

Md Zahid Hasan Khan
Northern University, Bangladesh

An observational cross-sectional study was carried out at Rangpur district in Bangladesh to assess nutritional status of reproductive aged women residing in char area with a sample size 200. Face to face interview was carried out with the semi-structured questionnaire. Convenient sampling technique was used to collect data on the basis of inclusion and exclusion criteria and written consent was taken prior to interview. Nutritional status was determined according to BMI cut off value for Asian population. Descriptive as well as inferential statistics were used to present data. Mean±SD age of respondents was 34.27±8.60. More than half (67%) of the respondents were illiterate and housewife (84%). Mean±SD income of respondents was 5700.71±282.89 per month. Underweight, normal and overweight were 67%, 30% and 3% respectively. Most respondents took rice 2-3times/day. Vegetables and soybean were taken randomly. Lentil was taken daily. Arthritis, headache, skin disease was more common. Statistical significant association was found between nutritional status and age group ($p<0.05$), education ($p<0.05$), occupation ($p<0.05$) and monthly income ($p\leq0.05$). Half of the respondents suffered from underweight and most of them income was very low. Income generating capacity should be increased as well effective nutrition education program must be instituted.

zahidkhanbangladesh@gmail.com

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Mathematical identification of isolated clustered micro-calcifications based on the distribution of effective atomic number in the mammary gland

V A Gorshkov[1], N I Rozhkova[2] and **S P Prokopenko[2]**
[1]Russian Space Research Institute, Russia
[2]Herzen Moscow Research Oncological Institute, Russia

The goal of this work was to improve the efficiency of early detection of micro-calcifications, the earliest indicators of breast cancer. Studies have shown that the presence of isolated clustered micro-calcifications in the mammary gland significantly increases the range of variation of effective atomic number and significantly changes the form of its distribution. Isolated micro-calcifications may not be visible at neither traditional neither difference, neither dividing mammograms, neither at the distribution of their linear convex combination. However, the fact of its presence in the mammary gland can be set analytically by the form of the distribution of the effective atomic number. The distribution of the effective atomic number in the tissue without micro-calcifications is symmetrical and close to normal law. But breast with isolated clustered micro-calcifications is characterized by asymmetry and high values of the maximum effective atomic number. The coordinates of the location of isolated micro-calcifications can be calculated mathematically.