4th World Congress on

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Scientific Tracks & Abstracts

DAY 1

S Silverman et al., Breast Can Curr Res 2017, 2:4 (Suppl)
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Electron microscopy of encapsulated and solid papillary carcinomas, is this an in-site or an invasive entity

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Background: For long time encapsulated and solid papillary carcinomas have been debated either an *in-situ* or an invasive entity. The goal of our study was to examine the presence or absence and the quality of myoepithelial cells, the presence or absence and thickness of basement membrane in all the selected cases.

Methods: 8 cases of encapsulated and solid papillary carcinomas, 3 cases of low to intermediate grade DCIS in association with low grade IDC NOS and 2 cases of combined IG DCIS and encapsulated papillary carcinomas as well as 2 cases of normal breast were selected from the database. The morphology was reviewed, immunohistochemical stains to highlight myoepithelial cells were performed and all cases were subjected for digital electron microscopy.

Results: All 5 cases of encapsulated papillary carcinoma show the presence of continuous or discontinuous attenuated basement membrane and absence of myoepithelial cells, 3 solid papillary carcinomas showed possible small myoepithelial cells.

Conclusions: We think that encapsulated papillary carcinomas represent a category of neoplasms in transition from an *in-situ* to invasive carcinomas, and at this stage it should be interpreted as low grade invasive ductal carcinomas with favourable behaviour. Solid papillary carcinomas should be divided into 2 categories: an invasive solid papillary carcinoma and an *in-situ* solid papillary carcinomas.

Biography

S Silverman began her medical career as a Paediatric Surgeon in the former Soviet Union. After she made Canada as her home in 1991, she broadened her studies and work into the field of Pathology. As a Pathologist, she is really good at finding the root causes of medical problems and also good at finding ways to heal medical conditions.

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Rani Kanthan, Breast Can Curr Res 2017, 2:4 (Suppl)
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Adenoid cystic carcinoma of the breast- A focused review

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Adenoid cystic carcinoma [ACC] is the most common malignant epithelial tumor of the minor salivary glands and is characterized by the presence of a dual population of both epithelial/luminal and myoepithelial/basaloid (abluminal) cell proliferation. Rarely, ACC is detected outside of the salivary glands in locations including the uterine cervix, bartholin's glands, lacrimal glands, auditory canal, skin, upper respiratory tract and lung, kidney, esophagus, prostate, and breast. Adenoid cystic carcinoma of the breast is rare, with an incidence of ~1/1 million female-years, a rate that has remained stable since the 1980s despite increases in mammogram screening. These tumors usually occur in Caucasian women, though rarely this tumor has also been reported in the male breast. This talk will provide a focused review on the clinical features, radiological findings, and key pathological features including the unique immunohistochemical staining properties with a brief purview on the differential diagnosis. The controversial views on its histopathogenesis will be explored including the underlying molecular mechanisms. Similarities and differences to salivary gland tumors will be highlighted. Best practice management and the role for surgery, radiotherapy, chemotherapy and hormonal therapy will be discussed. This talk will conclude with an update on the prognostic and predictive factors of this unique breast tumor.

Biography

Rani Kanthan is a Consultant Anatomical Pathologist in the Dept. of Pathology and Laboratory Medicine at the University of Saskatchewan with a focused interest in surgical oncology including breast and gastrointestinal tract. She has published more than 100 peer reviewed manuscripts that are indexed in PubMed/Google scholar and serves as an Editorial Board Member in various journals. She is an active educator and continues to participate and present at various national and international meetings.

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Notes:

Roberto N Miranda, Breast Can Curr Res 2017, 2:4 (Suppl)
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Breast implant-associated anaplastic large cell lymphoma: A newly recognized entity: Diagnosis, outcomes and misconceptions

Roberto N Miranda
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Breast implant-associated anaplastic large cell lymphoma (BI-ALCL) is a newly recognized clinicopathologic entity that affects patients who received breast implants for cosmetic or reconstructive reasons. The lymphoma arises in the capsule around the breast implant and usually presents with effusion, less frequently with a mass, and more rarely with lymphadenopathy. Based on our experience with more than 100 cases, we have developed a pathologic staging that correlates with the risk of lymphadenopathy and clinical outcomes. We have determined that complete surgical resection is the cornerstone of therapy, and in many cases makes the use of chemotherapy unnecessary. We have also evaluated pathogenic mechanisms and assessed epidemiologic evidence that may result in the develpment and progression of this lymphoma. Therefore, I would like to present my experience with this lymphoma with a focus in the diagnosis, provide a historical perspective and summarize the features that determined the World Health Organization to recognize that this is a distinct clinicopathologic entity. Lastly, I would like to propose a strategy for screening of patients with suspicion of having this lymphoma, a diagnostic algorithm, the pathological handling, sampling, and reporting for this lymphoma.

Biography

Roberto N Miranda has completed his MD at the Universidad Peruana Cayetano Heredia, in Lima, Peru and after emigrating to United States, completed an AP CP Residency at Brown University, fellowship in Hematopathology at Vanderbilt University, and has been Faculty at MD Anderson Cancer Center since 2007, where he is currently working as a Professor in the Department of Hematopathology. He has an interest in T-cell lymphomas and has developed an expertise in breast implant-associated anaplastic large cell lymphoma, a topic on which he has several landmark publications and book chapters, and on which he has lectured nationally and internationally.

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Notes:

Hallgeir Rui, Breast Can Curr Res 2017, 2:4 (Suppl)
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Use of quantitative immunohistochemistry to evaluate marker expression in breast cancer

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Breast cancer is a heterogenous disease and there is a great need for further individualized treatment. Due to extensive intertumor and intratumor heterogeneity, immunohistochemistry provides valuable spatially resolved marker analysis at the tissue level. Pathologists typically evaluate protein marker expression visually in formalin-fixed paraffin-embedded tumor sections by chromogenic immunohistochemistry. However, pathologist scoring of chromogen staining intensity is subjective and provides only reduced data that is discrete, either ordinal (e.g. 1, 2, 3) or nominal (negative/positive). In contrast, emerging digital pathology platforms allow quantification of chromogen or fluorescence signals by computer-assisted image analysis, providing continuous signal intensity values. Fluorescence-based immunohistochemistry (IF-IHC) provides greater dynamic signal range than chromogen-immunohistochemistry. Combined with image analysis software, fluorescence-based immunohistochemistry holds potential for enhanced sensitivity and greater analytic resolution resulting in more robust quantification. However, commercial fluorescence scanners and image analysis software differ in features and capabilities. Vendors' claims of objective quantitative immunohistochemistry are difficult to validate since pathologist scoring is subjective and, importantly, there is no accepted gold standard to measure against. We will present validation studies and progress with quantitative immunohistochemistry on large cohorts of breast cancer using different technologies. The path towards implementation of objective tumor marker quantification in pathology laboratories will be discussed.

Biography

Hallgeir Rui is a PhD holder and serves as the WBCS Endowed Professor of Breast Cancer Research in the Department of Pathology at the Medical College of Wisconsin, Milwaukee, WI. He has previously held positions at Thomas Jefferson University, Philadelphia, PA, Georgetown University, Washington DC, and Uniformed Services University, Bethesda, MD. He completed his Post-doctoral training at NCI, Frederick, MD and Moffitt Cancer Center, Tampa, FL. He received his MD and PhD degrees at the University of Oslo, Norway. His laboratory research is centered on analyses of human breast cancer to improve tailored therapy.

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R M Kappel et al., Breast Can Curr Res 2017, 2:4 (Suppl)
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Dissemination and accumulation in the whole body of silicone material through gel bleed and rupture of silicone breast implants in a deceased woman investigated by light electron microscopy and energy dispersive x-ray analysis

R M Kappel, L L Boer and **H Dijkman**
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We studied a patient (NS), who passed away († 2008) at the age of 56. She had been exposed to gel bleed from her silicone breast implants for 17 years. She was one of the women who developed health complaints while she had these implants. She donated her body, so that her organs and nervous tissue could be obtained for analysis.

Methods: During autopsy, many tissue samples were harvested, frozen and embedded in paraffin and EPON. The paraffin samples were stained with haematoxylin and eosin (HE) as well as with Modified Oil O Red (MORO). Tissues embedded in EPON were sectioned and prepared for light microscopy using toluidine blue staining for electron microscopy and EDX measurement of elemental Si.

Results: Through this work we have found 2 types of silicone material in multiple body and brain samples of this patient. The first is a droplet-like form. EDX measurements demonstrated that the droplets are composed of elemental Si. The second is a plaque-like form. EDX measurement of the EPON embedded samples revealed that these structures are comprised of elemental Si and Ti (Titanium). All the plaque-like structures are morphologically the same and contain small dense particles. Occasionally we found that these plaques are located inside the tissue without a lining and sometimes they were located inside the lumen of blood vessels.

Conclusion: This novel approach, presents a contributing factor for the establishment of silicone bleeding and migration throughout the whole body, which therefore also highlights the phenomenon of epigenetic aging as the likely explanation of the health related concerns of silicone breast implants, rather than autoimmunity.

Biography

Rita Margaret Kappel initiated her work in 1982-1986 as Head of the Department of Anatomy of Univ. of Suriname. In 1996-1998 she worked in Plastic Reconstructive Surgeon Univ. Hospital Groningen later she became Hand of Surgeon Univ. Hosp. During 2000-2005 Rita worked as Plastic Reconstructive surgeon in Private Clinic. Currently she is the Director of Dr. Kappel Institute.

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Lei Wei, Breast Can Curr Res 2017, 2:4 (Suppl)
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Pitfalls of improperly procured adjacent non-neoplastic tissue for somatic mutation analysis using next-generation sequencing

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Next-generation sequencing-based somatic mutations detection is becoming a standard analysis in neoplasms, which often requires a matched non-neoplastic sample for excluding germline events. One common tissue source for this purpose is non-neoplastic tissue adjacent to the excised neoplasm. However, these non-neoplastic tissues frequently contain low-level somatic mutations, which may impose additional challenges to somatic mutation detection as it complicates germline variant filtering. To test if this problem can be related to inadvertent contamination by neoplastic cells during the surgical pathology gross assessment or tissue procurement process, we applied a systematic protocol designed to collect multiple grossly non-neoplastic tissues using four different methods surrounding each single neoplasm. In each case, all samples were first sequenced by whole-exome sequencing, and then followed by ultra-deep sequencing targeting tumor-specific mutations to assess the exact contamination levels. Contamination was identified in at least half of the collected non-neoplastic tissues, at levels up to 20.9%. These contamination levels exhibited consistent pattern correlated with the manner of grossing and procurement. Our results suggest that the process of tissue procurement may contribute to contamination in non-neoplastic tissue, and the level of contamination can be minimized by using a carefully designed collection method. A standard protocol dedicated for acquiring adjacent non-neoplastic tissue that minimizes neoplasm contamination should be implemented for all future somatic mutation detection studies.

Biography

Lei Wei is a Computational Biologist and is currently working as an Assistant Professor at Roswell Park Cancer Institute. Specializing in genetic variation and somatic mutation detection through developing and unitizing sophisticated computational and statistical methods of next generation sequencing (NGS), he has analyzed large numbers of NGS data sets, authored and co-authored many publications on high impact journals such as *Nature, Nature Genetics, Cancer Cell* and *European Urology*. His current research focus on tumor heterogeneity, single cell sequencing and neoantigen in immunotherapy. Besides human tumors, he has extensive experience in analyzing patient-derived xenograft and genetically engineered mouse models.

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Anne Wilkinson, Breast Can Curr Res 2017, 2:4 (Suppl)
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Endogenous sex steroid hormone levels in women with breast malignancy

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Hormones play a critical role in breast carcinogenesis. In the recent past there has been extensive focus on the role of estrogen as a growth regulator of normal breast tissue and breast cancer. However, progesterone is also a potent breast mitogen. Testosterone or its metabolites might play a role in breast cancer etiology by altering the availability of estrogens or by acting as an estrogen precursor. 30 cases of newly diagnosed breast cancer cases were selected of which 12 were premenopausal and 18 were postmenopausal women. Most of the cases were in the age group of 41-50 years (47%), followed by 31-40 years. 79% of the patients were presented with complaint of breast lump. Upper outer quadrant was most commonly involved followed by the upper inner quadrant. 73% of the cases were of infiltrating ductal carcinoma. Other cases included were of infiltrating lobular carcinoma, medullary carcinoma, mucinous carcinoma, apocrine carcinoma, metaplastic carcinoma, spindle cell sarcoma and malignant phyllodes. Serum endogenous sex steroid hormone levels (estradiol, progesterone and testosterone) of the 30 women with breast cancer and 40 healthy controls were analyzed using the *enzyme linked immuno fluoresence assay* (ELFA) method. Serum levels of estradiol were found to be raised in the premenopausal and postmenopausal phases with statistically significant association of $p<0.05$. Serum values of progesterone and testosterone were statistically insignificant with $p>0.05$. Although comparable data was found in other Western studies, we do not have many studies done on the endogenous sex hormone levels in breast cancer patients in our country and the surrounding areas. Concentration of serum estradiol may predict the risk for breast malignancy and hence may help the clinicians to decide further management to decrease breast cancer risk.

Biography

Anne Wilkinson has completed her MD in Pathology from Christian Medical College and Hospital, Ludhiana, Punjab. She is currently working as an Associate Professor in Pathology at NKP Salve Institute of Medical Sciences and Research Centre, Nagpur, India. She has been teaching Pathology to Undergraduate students and is also a guide for Post-graduate students. She has more than 50 publications to her credit. She has been actively involved in organizing CME's and conferences and is the Past President of Vidarbha Association of Pathologists and Microbiologists in 2015-16.

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Pusceddu Claudio, Breast Can Curr Res 2017, 2:4 (Suppl)
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Percutaneous cryoablation in the treatment of metastatic breast cancer

Pusceddu Claudio
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Metastatic breast cancer is considered an incurable disease, and the main treatment goal is palliation, with the aim of maintaining or improving the quality of life and possibly improving survival. Palliative treatment options currently available to these patients include external-beam radiotherapy, chemotherapy and combined modalities, endocrine therapies, and biologic agents. Traditionally, the local treatment of stage IV breast cancer, through either surgery or radiotherapy, has been reserved for palliation of advanced local disease to prevent local complications. Population and institutional data base reviews suggest that a significant percentage of women (approximately 40%–60%) receive surgery for their primary breast tumor as a component of therapy for stage IV disease. The biologic rationale for removing the primary breast tumor in cases of proven disease dissemination is debatable, but several observational studies have exhibited a higher survival rate among patients with stage IV breast cancer in whom the primary tumor is completely excised at the time of diagnosis. Ablative techniques, such as radiofrequency ablation percutaneous cryoablation, interstitial laser ablation, and high-intensity focused ultrasound ablation, are being explored in the hope to avoid the need for surgery. Among these local ablative therapies, percutaneous cryoablation is a minimally invasive technique that has been proven to be a safe and effective technique for the treatment of local malignant disease in various organs. The aim of this retrospective review of our hospital's database was to assess the technical safety, feasibility, and efficacy of percutaneous cryoablation to treat primary breast tumors in patients with metastatic breast cancer.

Biography

Pusceddu Claudio graduated in March 1986 from the University of Cagliari (Italy) and specialized at the same university in Diagnostic Radiology in 1996 and in Medical Oncology in 2004. He has worked in an oncological hospital since 1992, and he has specialized in extra-vascular interventional radiology in the field of Oncological Disease. Every year, he performs more than 300 procedures (radiofrequency thermal ablation, microwave ablation, cryoablation, percutaneous screws fixation, osteoplasty with PMMA injection and combination of these procedures) in cancer patients.

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Mahboob Hasan et al., Breast Can Curr Res 2017, 2:4 (Suppl)
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Bilateral occult breast carcinoma presenting as bilateral axillary mass: An unusual presentation

Mahboob Hasan, Kafil Akhtar, Feroz Alam and **Murad Ahmad**
Aligarh Muslim University, India

Occult breast cancer presenting as an axillary mass is a rare clinical finding. Less than 5% of breast carcinoma presents as an axillary mass without an obvious primary tumor. Axillary lymph node showing metastatic adenocarcinoma poses diagnostic and therapeutic problems, when it is the only clinical presentation. In a significant proportion of breast cancer cases, mammographic detection of micro-calcifications is indicative of the presence of a breast lesion. We present a rare case of a bilateral occult breast carcinoma in a 40 year female with bilateral axillary mass without any palpable breast mass.

Biography

Mahboob Hasan has completed his MBBS and MD in Pathology from Jawaharlal Nehru Medical College, Aligarh Muslim University, Aligarh, India. He is presently working as a Professor in the department for 06 years. He has published more than 35 research papers in reputed journals and has been the Organizing Secretary of International Symposium on Women's Pathology. He is the Teacher In-charge of the Paramedical courses of the Medical College and actively involved in the establishment of the College of Para-Medical Sciences. He has been involved in WHO funded project Development of an atlas of cancer in India under the aegis of National Cancer Programme and supervised and co-supervised more than 12 MD/MS theses.

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Maurizio Montella, Breast Can Curr Res 2017, 2:4 (Suppl)
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Diabetes, obesity and breast cancer prognosis in mediterranean women

Maurizio Montella
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Obesity and diabetes reached epidemic proportion and may be associated with breast cancer (BC) survival outcomes. We therefore studied the association of obesity, diabetes and their combination (DM&Ob) with disease-free survival and overall survival. Our study included 991 pre and post-women with non-metastatic BC treated with mastectomy or breast-conserving surgery in two oncologic hospitals in Naples (Italy). Obesity was assessed as body mass index >30kg/m^2, while diabetes was categorized according to the American diabetes association guidelines. Patients and tumor characteristics including staging and molecular subtyping were evaluated using the Kruskal-Wallis H test for age, the Mantel-Haenszel linear-by-linear association chi-square test for trends for the ordered categorical variables and chi-square test for other categorical variables. Patient outcomes were analyzed in terms of both disease-free survival (DFS; with local, contralateral and distant disease recurrence and secondary primary tumors and death from any cause defined as event) and overall survival (OS; with death from any cause defined as event). There were a total of 137 recurrences after five years, mostly in the DM and Ob group (28%). There were no significant differences in DFS or OS between obese only (p=0.4 and 0.7, respectively) or diabetes only (p=0.8 and 0.5, respectively) compared to those without obesity or without diabetes. The fully adjusted multivariate Cox regression analyses showed a direct association of DM and Ob with DFS (HR=2.54, 95% CI 1.30-4.98) and with OS (HR=2.30; 95% CI 1.02-5.17), suggesting that the co-presence of diabetes and obesity had an independent and strong prognostic value.

Biography

Maurizio Montella is a Medical Doctor having Specialization in Epidemiology and Public Health. He is the Head of Department of Epidemiology of the National Cancer Institute of Naples. He works with the Ministry of Health on low glycemic index diet, exercise and vitamin D to reduce breast cancer recurrence (DEDiCa): design of a clinical trial. He has 282 published papers with citation 6896 and H-Index 46.

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Michael Grube, Breast Can Curr Res 2017, 2:4 (Suppl)
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Psychopathology and psychiatric interventions in a group of hospitalized breast cancer inpatients - A contribution to liaison-consultation psychiatry

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Background: Psychosocial stress and psychopathological abnormalities are expected in cancer patients at a frequency of 30% to 60%. Apart from decreased quality of life psychological factors may cause a negative impact on treatment-compliance and on the biological course of the tumor development subsequently.

Materials & Methods: We examined the association of different psychiatric and psychotherapeutic interventions in liaison-consultation psychiatry with the four psychopathological dimensions derived by factor analysis based on the items of psycho oncological basic documentation in a group of 141 breast cancer patients without pre-existing mental disorders that were inpatients of a gynecologic cancer center. In addition information concerning subjective stress experience was gathered with the distress-thermometer.

Results: The plausible fit of the various psychiatric and psychotherapeutic interventions due to the psychopathological dimensions and due to the subjective experience of stress could be demonstrated. Those intervention variables that were associated with an improvement of the psychological state could be described as well. The findings showed that improvement or at least permanence of the psychological state was associated with completing of oncological treatment regularly in the relevant index inpatient stay. In addition, it was found that the interventions offered could contribute to improved psychological well-being in the subgroup of patients without mental disorders particularly in normal grief reactions.

Conclusions: Despite methodological limitations our investigation contributes to describe relevant psychopathological syndromes in a group of breast cancer patients without pre-existing mental disorders and the goodness of fit of the different psychiatric and psychotherapeutic interventions. Finally the study confirms the assumption that the stabilization of the mental state may help to avoid treatment interruptions in an oncological inpatient setting and therefore decreases the likelihood that reduced psychological well-being which may impact the biological course of the tumor development negatively.

Biography

Micheal has received the license as a physician in 1983 after finishing school and medical studies at the University of Aachen (RWTH). In 1986, he moved to the municipal clinic Frankfurt Höchst, a teaching hospital of the Johann Wolfgang Goethe University Frankfurt in 1988 he became specialist for psychiatry, in 1998 as specialist for psychiatry and psychotherapy. In 1999, he completed his psychoanalytic training. In 2007, Micheal was appointed as an assistant professor of the Johann Wolfgang Goethe University and in 2008 he was appointed as physician of the clinic for Psychiatry and Psychotherapy - Psychosomatics at the municipal clinic Frankfurt Höchst. In 2011 he passed the exam for forensic psychiatry. Micheal's main scientific topics are: psychooncology, perinatal psychiatry, aggression in psychiatric patients, and psychotherapy in patients suffering from psychosis.

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Areej Al Nemer, Breast Can Curr Res 2017, 2:4 (Suppl)
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The frequency of breast cancer among young Saudi females with palpable breast lumps: Knowledge that mandates revision of the current practice

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While the incidence of breast cancer (BCa) shows less geographic variability than many other malignancies such as prostate cancer, the biologic behavior is, however, different. Many local studies have documented the earlier age of onset in Arab females and a more advanced stage at the time of diagnosis. Therefore, we planned to determine the spectrum of pathologies of palpable breast lumps in Saudi females and their significance in different age groups. This knowledge is crucial for modifications in the current screening programs, which is adopted from the international guidelines. All needle biopsies for the complaint of breast mass felt by the female patients were retrospectively included over 4 years. Fisher Exact test was used to determine the age of significant cancer risk. Out of 140 cases met the inclusion criteria, 110 were BCa. The median age of BCa was 46 years. There was 68% positivity for BCa in cases belong to females below 40 years, and 75% in patients aged younger than 50 years. The age of 40 year-old show significant cancer risk. The results showed that almost 4 out of 5 females with palpable breast lumps subjected to needle biopsy had BCa. Although this risk is higher with increased age, BCa is a disease of young in the population under study. Review of the current preventive and management measures is critically needed in our nation. Besides, it is advisable to customize the screening age for each country.

Biography

Areej Al Nemer is an Anatomic Pathology Board certified Pathologist since 2010. She then completed her Breast Pathology Fellowship program from University of Toronto in 2013. Currently, she is working in the University of Dammam and King Fahd Hospital of the University, SA as an Associate Professor and Consultant. She is the presentor of Pathology Department in KFHU breast unit. She has published more than 25 papers in reputed journals and has been serving as peer reviewer for different scientific journals.

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Notes:

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Scientific Tracks & Abstracts

DAY 2

Usha Rani Singh et al., Breast Can Curr Res 2017, 2:4 (Suppl)
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Molecular classification of breast carcinoma using manual tissue microarray: An Indian study

Usha Rani Singh, Aakanksha Singh, Sonal Sharma and **Navneet Kaur**
University College of Medical Sciences, India

Patients attending government hospitals cannot afford immunohistochemistry for prognosis and therapeutic decisions. Tissue microarray (TMA) brings down the cost of immunohistochemistry. Automated tissue array being expensive the aim of this study was to validate if manual TMA could be used in molecular classification of breast carcinoma. The study included 65 cases of histologically confirmed carcinoma breast. Manual TMA was constructed using two techniques (Kononen et. al. and Chen et. al.) and were assessed in terms of ease of preparation, microtomy, quality of sections and molecular classification of breast carcinoma. Immunohistochemistry for ER, PR, Her-2 and CK 5/6 were performed on manual TMA sections. Whole section immunohistochemistry was used as control. Both the methods were found to be easy and economical. No significant difference in the average time for TMA construction was seen between the two techniques. Sections from both methods were of optimum quality. The Chen-technique had an easier learning curve and the number of sections with all cores was higher. Mal-alignment of cores was frequently associated with Kononen-technique. The molecular distribution of carcinoma breast was: Luminal A- 40 %, Luminal B-27%, Normal breast like-5%, Basal type-17% and Her-2 positive- 11% by both the techniques. A good agreement was found between the immunohistochemistry results on routine and tissue microarray sections. It was concluded that manually created tissue microarrays could be used instead of routine whole sections for molecular classification. The decreased reagents used would have a tremendous implication in the Indian context by reducing the overall cost of immunohistochemistry.

Biography

Usha Rani Singh completed MBBS & MD Pathology from LLRM Medical College, Meerut, India. She worked at AIIMS Delhi as Assistant Research Officer and joined University College Of Medical Sciences, Delhi in 1985. Presently she is the Director and Professor in the Department of Pathology at University College of Medical Sciences. She is the Chief of Histopathology & Autopsy department. She has more than 50 publications and won best international poster award at ASCP Conference held at Chicago in 2013. She was one of the Visiting Professor at B.P.Koirala Institue of Health Sciences, Dharan, Nepal for 3 years. She is the Supervisor & Co Supervisor for numerous MD and PhD thesis.

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Notes:

Sirin Adham, Breast Can Curr Res 2017, 2:4 (Suppl)
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Novel targets in the peripheral blood mononuclear cells and circulating plasma differentiate poor prognosis breast cancer subtypes

Sirin Adham
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Circulating plasma and peripheral blood mononuclear (PBMCs) cells provide an informative snapshot of systemic physiology state. The role of neuropilin-1 (*NRP-1*) and its interacting molecules was investigated in breast tumor tissue however the clinical impact of their systemic levels was not fully evaluated. In this cross-sectional study, we found that plasma *NRP-1* and placental growth factor (PlGF) were increased in advanced nodal and metastatic breast cancer compared with locally advanced disease. Triple negative breast tissues expressed higher levels of both *NRP-1* and PLGF compared with other subtypes. Furthermore, in PBMCs, *NRP-1* and its interacting molecules *SEMA4A* and *SNAI1* were significantly down regulated in breast cancer patients compared with healthy controls. *SEMA4A*, *SNAI1*, *PLXNA1* and *VEGFR3* were inversely expressed with disease stage, indicating protective role. Moreover, two signature molecules; *VEGFR3* and *PLXNA1* were exclusively unregulated in PBMCs of Triple Negative Breast cancer (TNBC) cases, which underline the ability of PBMC expression profiles to differentiate among tumor molecular subtypes. These molecules showed differential levels according to patient's age a notion which might impact therapeutic plan. Finally, this work supports the importance of *NRP-1*-associated molecules present in the circulation to characterize poor prognosis breast cancer and emphasizes on their role as favorable drug targets.

Biography

Sirin Adham has obtained her PhD degree in 2002 from University of Leon, Spain. She has worked as Post-doctoral Fellow at University of Waterloo and University of Guelph, Canada from 2003 to 2009. From 2009 until present, she is working as an Assistant Professor at Sultan Qaboos University, Oman.

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Notes:

Angela Flavia Logullo Waitzberg, Breast Can Curr Res 2017, 2:4 (Suppl)
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Prognostic relevance of claudins 4 and 7 in invasive breast carcinoma subtypes

Angela Flavia Logullo Waitzberg
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Aims: Recently, a new molecular subtype denominated "claudin-low" (CL) was described in breast cancer and correlated to worse prognosis and to CD44+/CD24- stem cell profile. Among 19 known claudin proteins, isotypes 4 (CL4) and 7 (CL7) are the most common in the breast biology. Our aim was to verify differences in CL4 and CL7 immunoexpression between Luminal A, HER-2, and triple-negative breast cancer phenotypes; and their association to CD44/24 status and tumor prognosis.

Methods: Estrogen and progesterone receptor status (ER/PR), HER-2, CL4 and CL7 expression and CD44/24 profiles were evaluated in 803 invasive ductal breast carcinomas arranged into four tissue microarrays (TMA) and results were correlated with prognosis and important clinical data.

Results: 503 (62.6%) cases were positive for CL4 and 369 (46.0%) cases for CL7. The majority (199/283, 70.3%) of CL4 negative cases were clustered in the luminal A subtype whereas 63 (22.3%) showed triple-negative profile and the remaining 21 cases (7.4%) exhibited positive HER-2 expression ($p<0.001$). Claudin 7 negative samples (44.2%) tended to follow the same pattern. CL4 positive expression was significantly associated to HER-2 expression, presence of lymph nodes and increased tumor grades and inversely correlated to ER and PR expression. However, there was no association between CL7 expression and any of these features. Both CL4 and CL7 did not show correlation to the stem cell markers (CD44+/CD24-) or worse prognosis (survival and disease-free interval).

Conclusions: Claudins 4 and 7 individual status did not provide additional prognostic information within breast cancer subtypes.

Biography

Angela Flavia Logulo Waitzberg is currently appointed as an adjuvant professor at University of Sao Paulo Sp Brazil in the department of pathology. Her research interest is Pathology, Immunohistochemistry and oncological tumours.

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Notes:

Feng Yan, Breast Can Curr Res 2017, 2:4 (Suppl)
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MicroRNA-145 functions as a tumor suppressor by targeting matrix metalloproteinase 11 and Rab GTPase family 27a in triple negative breast cancer

Feng Yan
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Through increasing evidences have documented that microRNA-145 (*miR-145*) acts as a tumor suppressor in breast cancer, its exact role in triple negative breast cancer (TNBC) remains poorly defined. In this study, the expression of *miR-145* in human TNBC cells and samples from 30 patients was analyzed by stem-loop real-time PCR. We found that *miR-145* was significantly downregulated in TNBC tissues and cells. Upregulating *miR-145* in HCC1937 cells dramatically suppressed cell proliferation and induced G1 phase arrest, whereas MDA-MB-231 cells did not show growth inhibition. *MiR-145* exhibited inhibitory role in cell invasion through the post-transcriptional regulation of the novel targets MMP11 and Rab27a in TNBC cells. Additionally, *miR-145* silencing could be reversed by DAC. These results demonstrated that *miR-145* plays inhibitory role in TNBC malignancy by targeting MMP11 and Rab27a, which might be potential therapeutic and diagnostic targets for TNBC.

Biography

Feng Yan is the Vice Director of Department of Clinical Laboratory in Nanjing Medical University Affiliated Cancer Hospital and Jiangsu Cancer Hospital. The research works focus on the Bioanalytical Chemistry in laboratory medical diagnostics, particularly in detection of tumor markers and tumor cells. She has published 42 papers in SCI journals.

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Bennani Amal, Breast Can Curr Res 2017, 2:4 (Suppl)
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Primary angiosarcoma of the breast (about two cases)

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Primary angiosarcoma (AS) of the breast is a rare neoplasia that is not related to radiation exposure. It represents less than 0.05% of all malignant breast tumors. We report two cases of primary angiosarcoma of the breast. The first patient was a 33- year-old woman with a highly vascular mass in her right breast which is suggestive of malignancy at radiology. Initial core needle biopsy showed a benign hemangioma. The patient underwent a mastectomy. The tumor histology showed an angiosarcoma grade III. The patient is now receiving chemotherapy. She is still alive. The second patient was 19 year old women with a large and fast growing mass of her right breast which is no specific at radiology. Surgical biopsy showed a well differeciated angiosarcoma. She underwent a mastectomy and after that she received chemotherapy and died within 2 years. This tumor is exceedingly rare, characterized by aggressive patterns and poor prognosis and by the absence of typical features at radiologic examination. His prognosis is usually poor because of the high rates of local recurrence and early development of metastasis. Surgical removal followed by adjuvant chemotherapy seems to improve the prognosis. We report these two cases in the aim of avoiding the common trap of a benign differential diagnosis, and achieving a better definition of the treatment of this cancer.

Biography

Bennani Amal has completed his medical studies from Mohamed Ben Abdellah FES School of Medicine. She is an Assistant Professor in University Hospital Mohamed VI of Oujda in Morocco. She has published more than 10 papers in reputed journals.

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Kaiso roles in racial disparity of TNBC prevalence and outcomes

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Breast cancer (BC) is the most frequent female cancer and 2nd leading cause of female deaths worldwide. However although BC death rates have significantly declined globally in the past 20 years, women of African ancestry (WAA) still have a disproportionately high BC mortality rate despite a lower overall BC incidence rate than Caucasian women. Intriguingly, the aggressive and often fatal BC subtype, triple negative breast cancer (TNBC), is most common in young WAA but the reason for this racial disparity in TNBC prevalence and mortality is currently unknown. Nonetheless, mounting evidence hints at genetic risk factors rather than socio-economic status as a cause for this racial disparity. Recently, increased expression of the unique transcription factor Kaiso was found to correlate with basal/TNBCs, suggesting that Kaiso may play a role in TNBC aggressiveness and racial disparity in WAA. Using tissue microarray and immunohistochemistry, we investigated Kaiso expression in a cohort of WAA TNBC patient tissues from Barbados and Nigeria, and a multi-ethnic cohort from the USA. We found a significant correlation between high Kaiso expression, the degree of African ancestry, and shorter metastasis-free survival in WAA. Notably, when Kaiso is depleted in BC cells, the cells exhibit decreased TGF® signalling (a known promoter of metastasis), and did not metastasize to lungs or liver in a mouse model of breast cancer. Collectively these data implicate Kaiso in TNBC aggressiveness and racial disparity.

Biography

Juliet M Daniel obtained her PhD in 1994 from the University of British Columbia, Vancouver, and conducted her Post-doctoral studies at St. Jude Children's Research Hospital (Memphis) and Vanderbilt University (Nashville) in Tennessee, USA. She is a Professor and Cancer Biologist in the Dept. of Biology at McMaster University in Hamilton, Ontario, Canada. He has mentored over 20 graduate students and postdoctoral fellows, and published more than 30 articles in reputed journals such as PLoS ONE, Oncotarget and Oncogenesis.

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Potentials of lung injury after single electron beam postmastectomy radiotherapy

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Breast cancer patients are treated by a variety of options. Electron beams are utilized in the irradiation of the chest wall post mastectomy due to its dose distribution in the irradiated body, which does not penetrate deep into the body. Our objectives were to determine the possibility of inducing lung injuries during postmastectomy radiotherapy (PMRT) using single-field electron beams. Electron beams with different energies, and gantry angles were simulated using EGSnrc and checked for consistency with the measured beams. The simulated beams were then used for irradiating the chest wall in PMRT. XSTING software tool was used to superimpose the beam distribution on the CT data and generate dose volume histograms. The normal-tissue-complications-probability of the lung was evaluated. The dose response of the lung and potentials for developing lung fibrosis and pneumonitis were evaluated using DORES, a home built tool at the medical physics department in the University Hospital in Larisa NTCP increases with energy and with gantry angle. Below 15 MeV (which had given very high and unacceptable NTCP values) the largest value of NTCP of fibrosis was 0.036, for 12 MeV, gantry angle 60. The largest value of NTCP of radiation induced pneumonitis was 0.044, for 12 MeV, gantry angle 60. These values indicate low potentials of lung induced injuries, but were at the expense of appropriate target coverage

Biography

Hiba Omer has done her PhD in medical Physics from University of Thessaly, Greece. She is an Assistant Professor of Medical University of Dammam, KSA and Member of several scientific and women societies. Her research areas are Education, Medical Physics, radiobiology, simulation; public education. She has done several research publications as well.

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Humera Mahmood, Breast Can Curr Res 2017, 2:4 (Suppl)
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Effect of different clinicopathological features on overall survival of breast cancer patients - a cohort study from Northern Pakistan

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Background: A number of studies have been carried out worldwide to find out prognostic and predictive significance of different clinicopathological and molecular variables interms of overall survival in breast cancer. No such study has been carried out initially in Pakistan. This study was carried out at Atomic Energy Cancer Hospital NORI Islamabad to find out the impact of age, menopausal status, recepto status, tumor size and lymph node involvement on overall survival of breast cancer patients coming from Northern Pakistan.

Material & Methods: This observational retrospective study was carried out in the Oncology Department of NORI Hospital. A total of 2,666 patients were included. Data were entered into SPSS 20. Multinomial logistic regression analysis was performed to determine associations of different variables with overall survival. P values <0.05 were considered significant.

Results: The mean age of the patients studied was 47.6 years, 49.5% being postmenopausal. One thousand seven hundred and eight (1,708) were ER positive and 1,615 were PR positive, while Her 2 neu oncogene positivity was found in 683. A total of 1,237 presented with skin involvement and 426 had chest wall involvement. 1663 had more than 5 cm tumors. Lymph node involvement was detected in 2,131. Overall survival was less than 5 years in 669 patients, only 324 surviving for more than 10 years, and in the remainder overall survival was in the range of 5-10 years.

Conclusions: Tumor size, lymph node metastases, receptor status, her 2 neu positivity, skin involvement, and chest wall involvement have significant effects whereas age and menopausal status have no significant effect on overall survival of breast cancer patients in Pakistan.

Biography

Humera Mahmood joined Atomic Energy Cancer Hospital NORI in 1994. She was first female FCPS in Oncology in Pakistan in 1998. She was Faculty Member, Supervisor and Examiner of College of Physicians and Surgeons Pakistan for FCPS in Clinical Oncology since 2000. She was Board of Studies Member of PIEAS for MSc in Radiation and Medical Oncology, Trained a number of doctors who are serving not only in Pakistan but abroad as well. She is the Incharge of Research Training and Monitoring Cell and Cancer Awareness Program at NORI: regularly organizing a number of Cancer Awareness Programs for general public as well as Doctors. A number of international publications is on her name in well reputed journals with an impact factor of more than 70 and is a member of Editorial Review Boards of number of journals. She is the Vice President of Pakistan Society of Clinical Oncology.

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El-Abd E et al., Breast Can Curr Res 2017, 2:4 (Suppl)
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Reversal of TAM resistance by calcitriol and tretinoin combined therapy is mediated mainly by induction of surviving

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Objective: To investigate the role of single and combined therapeutic effect of tretinoin and calcitriol in reversal of tamoxifen resistance in LCC2, doses were determined by MTT assay.

Materials & Methods: The study included eight groups (triplicates), control group (1% v/v of DMSO), 100 nM 4-OH TAM, 250 nM calcitriol, 1mM tretinoin, tretinoin+calcitriol, TAM+calcitriol, TAM+tretinoin, TAM+calcitriol+tretinoin. After 72 hours, CCND1 was assayed by qRT-PCR while, ERα, survivin, Her-2, and IGF-1R were detected by ELISA.

Results: TAMR was represented by a significant decrease in ERα and significant increase of Her-2, survivin, and EGF-1R in TAM group. Tretinoin significantly increased Her-2, survivin, and IGF-1R while, calcitriol significantly increased ERα. Combined calcitriol and tretinoin treatment significantly increased ERα, Her-2, survivin, and IGF-1R than control. Addition of calcitriol to TAM significantly normalized Her-2, survivin, EGF-1R, and ERα. However, addition of tretinoin significantly lowered Her-2, survivin, and EGF-1R and increased significantly ERα to a normalized level. TAM plus both vitamins significantly increased ERα than TAM alone and even more than the control level, normalized Her-2, and IGF-1R, and significantly lowered survivin than control. Addition of tretinoin to TAM significantly increased CCND1 than TAM and control. A significant reversal correlations was detected between ERα and survivin. A direct significant correlation was also detected between survivin and both IGF-1R and Her-2. Her-2 significantly correlated directly with IGF-1R.

Conclusion: Combined therapy alleviate TAMR via cross-talk of ERα with Her-2, survivin, and IGF-1R with survivin being the most affected effector.

Biography

Eman El-Abd, Ass. Prof. in radiation sciences department, Medical research institute (MRI), Alexandria University, Egypt, grew up in Egypt and received her Bachelor's degree from Biochemistry department, Faculty of science, University of Alexandria in 1991. She received a training fellowship at University of Torvergata, Rome, Italy 1992, Mario Negri sud institute, Chieti, Italy 1992-1993, and Mario Negri institute, Bergamo, Italy 1993-1995. She awarded her MSc in Medical applied chemistry (radiation chemistry), MRI, Alexandria University 1996. After she obtained her Ph.D degree from the school of biological sciences, University of Liverpool, UK in 2002, she joined the MRI as a lecturer in 2002. She established the molecular biology unit in the medical technology center as a part of the MRI. She investigated the role of genes in diagnosis and prognosis of cancers. She was promoted to Ass. Prof. at MRI in 2008. In 2010 she was classified as Number 59 among top 100 health professionals.

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Ashwini Kannamma K, Breast Can Curr Res 2017, 2:4 (Suppl)
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Leiomyosarcoma of the breast; are you sure of the diagnosis?

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Sarcoma of the breast is a rare condition. The biological differences from other primary breast tumours necessitate a corresponding difference in approach to diagnostic and management strategies. The rarity of the condition has made clinicopathological study difficult. We report a case of primary leiomyosarcoma in a 40-yr-old-female, with a 15×9 cm bosselated swelling, involving all four quadrants of the left breast. Her clinical features, sonography and trucut biopsy were compatible with cystosarcoma phyllodes and she underwent a left mastectomy for the same. Later, the histological and imunohistochemical studies established the diagnosis of leiomyosarcoma Grade 2 (strongly positive for vimentin, SMA and focally positive for beta-catenin). Given the differential for such a presentation, we emphasize the workup for a patient presenting with similar characteristics should be thorough. Following a simple excision with free margins, a histology examination with the appropriate immunohistochemistry is indispensable for an accurate diagnosis.

Biography

Ashwini Kannamma K has completed her MBBS from Mahatma Gandhi Medical College, and is doing her Master of Surgery from Sri Ramachandra Medical College, India.

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Aileen Azari-Yam, Breast Can Curr Res 2017, 2:4 (Suppl)
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Comparison of fine-needle aspiration cytology and core biopsy for diagnosis of breast cancer

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Breast cancer still represents the leading tumor among women and the incidence of the disease is rising all over the world. Conventional mammography, full-field digital mammography (FFDM), ultrasound, MRI, positron emission tomography (PET), and positron emission mammography (PEM) are currently used modalities for breast cancer screening and diagnosis; however, pathological characterization still plays an essential role for differential diagnosis and to avoid surgical over-treatment in case of breast lesions with suspicious features. Core needle biopsy (CNB) and fine-needle aspiration (FNA) cytology are useful procedures in diagnosing breast cancer. We reviewed 50 breast cancer patients who had undergone FNA, core biopsy, and also either mastectomy or lumpectomy and compared the sensitivities of these diagnostic methods. Sensitivity for FNA or CNB interpreted as either atypical, suspicious for malignancy or malignant was 95.6% for FNA and 96.1% for core needle biopsy which showed no statistically significant difference (P>0.05). In conclusion, FNAC and CNB represent sensitive methods for the characterization of breast masses.

Biography

Aileen Azari-Yam has completed her MD in Shahid Beheshti University of Medical Sciences, Tehran, Iran and specialized in Anatomical and Clinical Pathology from the same university. She defended her thesis for PhD degree in Medical Genetics in Tehran University of Medical Sciences in 2016. She is an Assisstant Professor of Medical Genetics in Tehran University of Medical Sciences.

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Radiation dose measurement and cancer risks estimation from digital mammography in Sudan

Elbagir H. Manssor and **Sara O. Osman**
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Radiation doses from mammography are getting more attention from the radiation protection bodies, as screening and regular (annual) check-ups becoming more important for early detection of breast cancers in women aged 40 and older. Digital mammography was approved by FDA in early 2000. The objectives of this study are to Measure the radiation doses and estimate the lifetime attributable risks of radiation-induced cancer incidence from digital mammography studies involving the use of ionizing radiation in Sudan. A total of 45 women (age between 35 and 60) were screened. Three views craniocaudal, mediolateral and mediolateral oblique were done for each woman for both left and right breast as a department screening protocol. The mean age was 44.84 years, the mean kV and mAs were 29.23 and 79.45 respectively. The mean breast thickness and compression force (dN) were 47.85(mm), 17.64 (dN) respectively. The mean granular dose (MGD) per view and lifetime attributable cancer risk (LAR) were 1.07(mGy) and 6.95 per 100.000. The (MGD) and (LAR) were high compared to the published literature, the use of three views as screening protocol is neglected according to ALARA regardless the size of the detector of the mammography machine.

Biography

Elbagir Manssor has completed his Ph.D. in diagnostic radiologic technology at the age of 42 years from Sudan University for Science and Technology. He is a lecturer at Prince Sattam bin Abdulaziz University; he has great concerns regarding radiation protection and medical education. He has published more than 7 papers in reputed journals in different areas of medical imaging.

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