2nd World Congress on

RADIOLOGY AND ONCOLOGY

July 16-17, 2018 Dubai, UAE

Special Session

Partha S Choudhury, OMICS J Radiol 2018, Volume 7
DOI: 10.4172/2167-7964-C1-021

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Partha S Choudhury

Rajiv Gandhi Cancer Institute & Research Centre, India

Current concepts of theranostic approach in precision oncology : The changing paradigms

The term theranostics is the combination of a diagnostic tool that helps to define the right therapeutic tool for specific disease. It signifies the "we treat what we see & see what we treat" concept. A diagnostic radionuclide labelled with the target and once expression is documented, the same target is labelled with a therapeutic radionuclide and treatment is executed. In addition a molecular biomarker based targeted treatment can be tailored with either biomarker or molecular imaging. The concept is utilized in few malignancies especially NET & prostate cancer currently. Molecular imaging modalities exploit the receptor expression aspects of the pathophysiology for both diagnostic imaging & therapeutic purposes. The receptor expression changes with tumor grades and hormone resistance. We have reported excellent sensitivity and detection capability of both primary and metastatic disease. Besides evaluation of recurrence, 68Ga-labelled radiopharmaceuticals can be utilized for detection of metastasis and selection of patients for therapy. 68Ga- DOTA or PSMA serves the basis of treatment of these conditions with 177Lu . Based on the theranostic concept the aims of treatment with 177Lu are to improve outcome by early interventions in suboptimal responders, sparing low risk patients from over treatment, reduce treatment related side effects, ensure effective palliation & improve quality of life. Tumor targeting with 177Lu DOTA or PSMA saves normal tissue & delivers high dose to tumor. Easy radiopharmaceutical labelling & high expression in all cancer cells makes it an optimal target for radionuclide therapy, with a low toxicity profile. In our experience at RGCI & RC (our institute) we have seen objective regression in lesions and symptomatic relief. It has been found to be a safe & effective method for treating end stage androgen independent, progressive CRPC and metastatic NET. Similarly a personalized treatment model based on molecular biomarkers and imaging in breast cancer is possible based on imaging of estrogen receptors and 18F FES imaging in breast cancer. In this presentation, I am going to discuss our experience in precision oncology based on the above concepts.

Biography

Partha S Choudhury is an internationally acclaimed leading Nuclear Medicine Physician of India with special interest in Radionuclide Therapy of various types of cancers. He has more than 25 years of experience in Nuclear Oncology. He is heading the department of Nuclear Medicine in Rajiv Gandhi Cancer Institute & Research Centre Delhi India since 1998 and has been instrumental in its sustained growth over the last 20 years. He has introduced and standardized new procedures in the department both in terms of disease specific diagnostic, molecular imaging & molecular therapy. He is an invited speaker in conferences and symposiums across many countries, the main ones being United Kingdom, Austria, South Africa and South America. He is an avid clinical researcher with publications in peer reviewed journals. He is a technical co-operation consultant & participant of co-ordinated research projects of International Atomic Energy Agency (IAEA) Vienna

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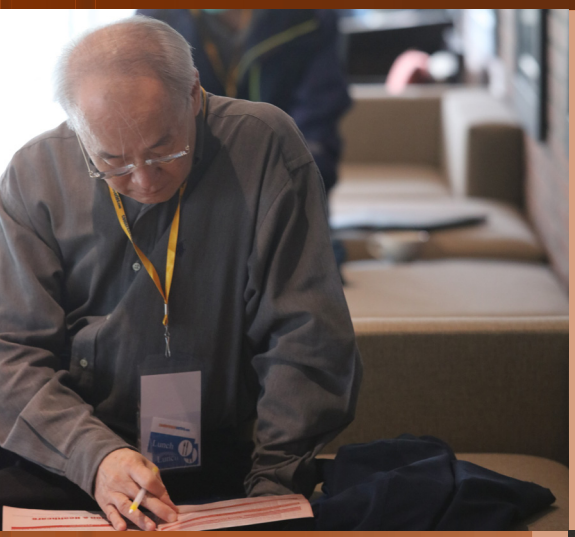

Scientific Tracks & Abstracts (Day 1)

Vikas Leelavati Balasaheb Jadhav, OMICS J Radiol 2018, Volume 7
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Transabdominal sonography of the small & large intestines

Vikas Leelavati Balasaheb Jadhav
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Transabdominal Sonography of the Small & Large Intestines can reveal following diseases. Bacterial & Viral Entero-Colitis. An Ulcer, whether it is superficial, deep with risk of impending perforation, Perforated, Sealed perforation, Chronic Ulcer & Post-Healing fibrosis & stricture. Polyps & Diverticulum. Benign intra-mural tumours. Intra-mural haematoma. Intestinal Ascariasis. Foreign Body. Necrotizing Entero-Colitis. Tuberculosis. Intussusception. Inflammatory Bowel Disease, Ulcerative Colitis, Cronhs Disease. Complications of an Inflammatory Bowel Disease – Perforation, Stricture. Neoplastic lesion is usually a segment involvement, & shows irregularly thickened, hypoechoic & aperistaltic wall with loss of normal layering pattern. It is usually a solitary stricture & has eccentric irregular luminal narrowing. It shows loss of normal Gut Signature. Enlargement of the involved segment seen. Shouldering effect at the ends of stricture is most common feature. Primary arising from wall itself & secondary are invasion from adjacent malignancy or distant metastasis. All these cases are compared & proved with gold standards like surgery & endoscopy. Some extra efforts taken during all routine or emergent ultrasonography examinations can be an effective non-invasive method to diagnose primarily hitherto unsuspected benign & malignant Gastro-Intestinal Tract lesions, so should be the investigation of choice.

Biography

Vikas Leelavati BalaSaheb Jadhav has completed postgraduation in Radiology in 1994. He has a 23 years of experience in the field of Gastro-Intestinal Tract Ultrasound & Diagnostic as well Therapeutic Interventional Sonography. He is the pioneer of Gastro-Intestinal Tract Sonography, especially Gastro-Duodenal Sonography. He has delivered many Guest Lectures in Indian as well International Conferences in nearly 27 countries as an Invited Guest Faculty, since March 2000. He is a consultant Radiologist & the specialist in conventional as well unconventional Gastro-Intestinal Tract Ultrasound & Diagnostic as well Therapeutic Interventional Sonologist in Pune, India.

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Abdalla Abotaleb, OMICS J Radiol 2018, Volume 7
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Impact of sequencing of treatment lines to enhance patient's outcomes & resource utilization for metastatic breast cancer

Abdalla Abotaleb
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Background & Objective: Due to incidence of breast cancer in low middle-income country like Egypt, which is the most prevalent cancer among women in Egypt, representing 18.9% of total cancer cases (35.1% in women and 2.2% in men) with an age-adjusted rate of 49.6 per 100000 population, stages III and IV constitute 68% of all breast cancer cases. The previous feature of disease lead to economic burden on budget for the health care system and raise the question-does the policy maker need to develop treatment policy based on prioritization and sequencing for treatment lines to enhance patient's outcome including (quality of life-economic value-clinical effectiveness). The objective of this study is to determine cost-effectiveness of Vinorelbine oral plus Capecitabine oral against Docetaxel IV plus as first line for metastatic breast cancer over time horizon three years from payer prospective.

Method: A cost-effectiveness analysis from the perspective of the Ministry of Health and population was conducted. A Markov model was applied with three health states. Utility data were incorporated in the model to make adjusted results. Costs used were the local ones according to the national fund list. Discounting was applied at 3.5% annually both on costs and benefits. The results obtained were in term of ICER and number of QALYs. Robustness of our findings was checked using sensitivity analyses. Results are expressed in QALYs.

Result: During the three-year time horizon for Vinorelbine oral 2017 exchange rate: 0.13 with a 2.46 QALY gained versus 0.84 QALY gained for Docetaxel IV, which yields a difference of 1.62 in QALY. Vinorelbine oral is economically dominating the Docetaxel strategy, producing more benefit at a lower cost. The one-dimensional sensitivity analysis indicated that the overall survival medians of both drugs had the largest impact on the results. When conducting sensitivity analysis using plausible ranges, Vinorelbine oral remained economically dominant in all.

Conclusion: Developing prioritization and sequencing treatment policy by starting with Vinorelbine oral plus Capecitabine oral as first line of treatment for metastatic breast cancer may have positive impact on patient's outcome including (quality of life-economic value-clinical effectiveness) and cost saving effect on treatment budget. This saving effect may lead to treat more patients with same budget and enhance outcomes for those patients.

Biography

Abdalla Abo Taleb, MD is a World Health Organization expert. He is also a consultant on health economics at the Egyptian Ministry of Health, as well as a member of the Egyptian health care reforming committee Ispor (member, judge and reviewer).

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Rashmi Chand, OMICS J Radiol 2018, Volume 7
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CT imaging features of primary imaging of primary peritoneal tumors with pathological correlation

Rashmi Chand
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Objective: The purpose of the presentation is to review the CT imaging patterns of primary peritoneal tumors and to correlate the imaging findings with pathologic features based on the proposed histogenesis. Primary peritoneal tumors are classified into mesothelial, epithelial, smooth muscle and uncertain origin groups.

Method: This presentation describes various primary peritoneal tumors and demonstrates the characteristic CT appearances using images from patients referred to with histological confirmation. Multidetector Computed Tomography (MDCT) imaging is approximately 90% sensitive in the detection of peritoneal neoplastic lesions greater than 5 mm. CT scan also plays an important role in guiding biopsy for tissue diagnosis and assist with the management of disease namely in surgical planning.

Result: Primary peritoneal tumors are an uncommon group of diverse pathological disorders. They share a common anatomic site of origin and have overlapping imaging features yet are distinctly different clinically. Their imaging appearances overlap with those of diffused peritoneal metastatic disease and infectious disease.

Conclusion: Differentiating primary peritoneal tumors from metastatic disease is important clinically so that patient management is appropriate.

Biography

Dr. Rashmi Chand is an oncoradiologist and currently working as a consultant radiologist for Apollo Gleangles Hospital, Kolkata, India. She had got the recommended poster nomination in ESGAR 2017 for my work in primary peritoneal tumor imaging.

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Notes:

Shina Ghafoor-Ameen, OMICS J Radiol 2018, Volume 7
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MRI as a screening imaging modality for early tumor detection

Shina Ghafoor-Ameen
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Screening and early diagnosis of tumor has an important role in reducing morbidity and mortality associated with cancer. Magnetic Resonance Imaging (MRI) has the highest sensitivity of current imaging modalities. MRI is an emerging modality of choice for whole body screening to detect disease in its early stages while effective treatment is still possible. MRI is also used wolrdwide as a surveillance imaging technique to identify cancer in individuals who are at increased risk of disease. Costs of MR imaging modality is an important consideration and the society bears the burden of costs of the procedure. This is however less of an issue if the individual is paying for it independently.

Biography

Shina Ghafoor has completed her MBChB from the Medical School of Baghdad, Iraq. She is a Postgraduate and had Specialist Training for Radiology at the University Hospital of Basel, Switzerland. She has the Fellowship for Musculoskeletal Radiology and is currently working as Consultant Radiolologist and MRI Lead at Thun Hospital, Bern, Switzerland. She has worked as a Consultant General and Musculoskeletal Radiologist in United Kingdom.

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Ravi Ambati et al., OMICS J Radiol 2018, Volume 7
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Prognostic significance of magnetic resonance imaging in patients with severe nonpenetrating traumatic brain injury requiring decompressive craniectomy

Ravi Ambati, Kwok M Ho and Stephen Honeybul
Royal Perth Hospital, Australia

Background: Diffuse Axonal Injury (DAI) detected on Magnetic Resonance Imaging (MRI) may be useful to predict outcome after Traumatic Brain Injury (TBI).

Aim & Method: This study compared the ability of the International Mission for Prognosis and Analysis of Clinical Trials (IMPACT) prognostic model with DAI on MRI to predict the 18-month neurologic outcome in 56 patients who had required decompressive craniectomy after TBI.

Results: Of the 56 patients included in the study (19 scans occurred within 14 days, median time for all patients 24 days, interquartile range 14-42), 18 (32%) had evidence of DAI on the MRI scans. The presence of DAI on the MRI Diffusion-Weighted (DW) T2*-weighted gradient echo and Susceptibility-Weighted (SWI) sequences was associated with an increased risk of unfavorable outcome at 18 months compared with patients without DAI (44% vs. 17%, difference = [27%, 95% confidence interval 2.4-46.7% ; P = 0.032), particularly when the brainstem was involved. However, neither the grading (1 to 4) nor the number of brain regions with DAI was as good as the IMPACT model in discriminating between patients with unfavorable and favorable outcomes (area under the receiver operating characteristic curve: 0.625 and 0.621 vs. 0.918, respectively; P<0.001 for both comparisons). After adjustment for the IMPACT prognostic risks, DAI in different brain regions and the grading of DAI were also not independently associated with unfavorable outcome.

Conclusion: The prognostic significance of DAI on MRI may, in part, be captured by the IMPACT prognostic model. More research is needed before MRI should be routinely used to prognosticate the outcomes in patients with TBI requiring decompressive craniectomy.

Biography

Ravi Ambati is a medical doctor at Department of General Surgery, Royal Perth Hospital, Australia.

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Notes:

Mohammed A Alnafea et al., OMICS J Radiol 2018, Volume 7
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Breast tumor imaging using coded aperture: Monte-Carlo simulation study

Mohammed A Alnafea and A M Alenezi
King Saud University, Saudi Arabia

Background: Scintimammography (SM) is a promising functional radionuclide imaging technique that is generally undertaken using high resolution parallel-hole collimators with Gamma Cameras. The main clinical limitation of this technique is inaccuracy in detecting small lesions less than 1 cm diameter. This limitation is due to resolution-efficiency trade-off that is inherent in the use of collimation. As an alternative approach this study proposes using a simple Coded Aperture (CA) mask, instead of a collimator, coupled to a standard clinical gamma camera for breast tumor imaging. This imaging technique successfully predicts the overall form of artefacts arising from the near-field imaging geometries.

Aim & Methods: To investigate the applications of CA technique a Monte Carlo Simulation (MCS) is used using MCNPX package. To emulate SM, 3D pseudo-anthropomorphic phantoms have been developed and verified and used along with a realistic model of a clinical gamma camera. This study examines a moderately compressed breast phantom in a cranio-caudal-projection. The performance of such an imaging system is modeled by the MCS method and images are reconstructed by correlation analysis. This imaging system was quantitatively evaluated using variable parameters: The detected photon from tumor, spatial resolution, photon statistics and lesion visibility of the system at several tumor-background activity ratios. The effectiveness and the performance of the CA-SM system was assessed and compared with low energy high resolution parallel-hole collimator and ultra-high resolution parallel-hole collimator image formation systems.

Results: The predicted background can be used to correct the near-field effect of 3D sources, as might be found in SM using CA. The simulated planar images from these collimator-based image formation systems suggest tumors of 1 cm diameter may be observable with a tumor-background-ratio of 5:1. However, when the tumor diameter is ≤0.8 cm these become less reliable detecting small (less than 1 cm in diameter) lesion unless a tumor-background-ratio of more than 10:1 is used.

Conclusion: The results of the simulations demonstrate that with near-field artefacts corrections the CA-SM approach shows good performance in lesion detection for all lesions (located 3 cm deep in a 6 cm thick breast phantom) and for a tumor-background ratio as low as 3:1. This level of performance is highly competitive, in some cases, superior to conventional collimator based image formation methods.

Biography

M A Alnafea is presently working as an Assistant professor in ***King Saud University, Saudi Arabia.*** He attended several International and National conferences. He published several article in different journals as well.

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Swati Chandrashekher Pacharne, OMICS J Radiol 2018, Volume 7
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MR kinetic curve analysis of breast lesions

Swati Chandrashekher Pacharne
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MRI being painless, non-ionizing & safer OPD basis modality with sequential tissue specific & dynamic contrast enhancement characteristic along with exclusive advantage of MR kinetic curve analysis proved to be superior in evaluation & differential diagnosis of the breast lesions, specially benign Vs malignant. Other multiple advantages of MRI improved its efficacy. As for Breast Cancer, there is no prevention but only early accurate detection & proper on time treatment & management, screening MRI along with MR Kinetic Curve Analysis, not only in all high risk group patients but also in financially affordable patients is suggested.

Biography

Swati Pacharne has completed her MD Radio-diagnosis at the age of 29 years from Mumbai University, India. Currently, she is working in Thumbay Hospital, Dubai, UAE as a Specialist Radiologist, which is one of the leading private healthcare having the only medical university in Ajman, for whole UAE. She has rich experience of 17 years in the field of Radiology, specially, Breast, Women's, Fetal & MSK Imaging, specially working on MRI & USG modalities. She is a life member of more than 15 national & international organizations and she has given multiple lectures & published multiple papers in many national & international conferences.

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Vikas Leelavati Balasaheb Jadhav

Dr. D. Y. Patil University, India

Transabdominal sonography of the stomach & duodenum

Transabdominal Sonography of the Stomach & Duodenum can reveal following diseases. Gastritis & Duodenitis. Acid Gastritis. An Ulcer, whether it is superficial, deep with risk of impending perforation, Perforated, Sealed perforation, Chronic Ulcer & Post-Healing fibrosis & stricture. Polyps & Diverticulum. Benign intra-mural tumours. Intra-mural haematoma. Duodenal outlet obstruction due to Annular Pancreas. Gastro-Duodenal Ascariasis. Pancreatic or Biliary Stents. Foreign Body. Necrotizing Gastro-Duodenitis. Tuberculosis. Lesions of Ampulla of Vater like prolapsed, benign & infiltrating mass lesions. Neoplastic lesion is usually a segment involvement, & shows irregularly thickened, hypoechoic & aperistaltic wall with loss of normal layering pattern. It is usually a solitary stricture & has eccentric irregular luminal narrowing. It shows loss of normal Gut Signature. Enlargement of the involved segment seen. Shouldering effect at the ends of stricture is most common feature. Enlarged lymphnodes around may be seen. Primary arising from wall itself & secondary are invasion from peri-Ampullary malignancy or distant metastasis. All these cases are compared & proved with gold standards like surgery & endoscopy. Some extra efforts taken during all routine or emergent ultrasonography examinations can be an effective non-invasive method to diagnose primarily hitherto unsuspected benign & malignant Gastro-Intestinal Tract lesions, so should be the investigation of choice.

Biography

Dr.Vikas Leelavati Balasaheb Jadhav has completed postgraduation in Radiology in 1994. He has a 23 Years of experience in the field of Gastro-Intestinal Tract Ultrasound & Diagnostic as well Therapeutic Interventional Sonography. He is the Pioneer of Gastro-Intestinal Tract Sonography, especially Gastro-Duodenal Sonography. He has delivered many Guest Lectures in Indian as well International Conferences in nearly 27 countries as an Invited Guest faculty, since March 2000. He is a consultant Radiologist & the specialist in Conventional as well Unconventional Gastro-Intestinal Tract Ultrasound & Diagnostic as well Therapeutic Interventional Sonologist in Pune, India.

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Workshop (Day 2)

Naglaa Mohamed Abdel Razek, OMICS J Radiol 2018, Volume 7
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Naglaa Mohamed Abdel Razek

Cairo University, Egypt

Breast intervention from basic to advanced

A biopsy remains the standard technique for diagnosing both palpable and non palpable breast abnormalities and is the preferred initial method of evaluating almost all breast masses (Burstein, 2011). Studies have shown that the combination of a physical examination, radiographic imaging and histopathological confirmation, also referred to as "the triple-test", can produce accuracy levels of over 90% when all three components are concordant for benign or malignant disease (Singhal, 2008).Under certain circumstances when a mass or radiographic abnormality is categorized as probably benign in the presence of high patient anxiety, family history of breast cancer, or poor likelihood of compliance with recommended six-month follow-up imaging, a breast biopsy may be recommended for category three lesions (American Cancer Society, [ACS], 2011; National Comprehensive Cancer Network. A number of well-designed studies have demonstrated the safety and clinical utility of minimally invasive breast biopsy methods relative to open surgical biopsy. Advantages include less discomfort for the patient, a reduction in scarring and cosmetic defect, less invasive procedure, and quicker patient recovery.

Percutaneous methods:

Small needles:

- Fine-Needle Aspiration Biopsy (FNAB)
- Core Needle Biopsy (CNB): Automated spring-loaded core needle.

Large needles:

- Vacuum Assisted core needles.
- Breast lesion excision system (Intact™)
- Virtual needle: HIFU, high intensity focused ultrasound

The following ultrasound guided procedures:

1. FNB of solid lesions
2. Core biopsy of solid lesions
3. Open surgical biopsy after Wire localization of non palpable lesions.
4. Vacuum assisted biopsy & closed excision of benign breast masses.
5. Percutaneous Cyst aspiration or abscess & seroma drainage.
6. Metallic clip placement to follow the effect of chemotherapy.

Large needle procedures:

BLES & VAB are two advanced automated large needle breast biopsy methods .To date , there is no clear international guide lines regarding the indications however we will try to put preferential indications of each technique based on the available international publications , NICE guideline (UK) as well as our experience in the two techniques (2000 VAB in 9 years and 300 BLES in 2yrs).

What is VAB ?

It is done using a percutaneous device developed specifically for breast biopsy. It is a sort of advanced large core needle biopsy. It utilizes vacuum assistance coupled with a high speed rotating cutter to acquire tissue samples.

What is BLES?

The BLES consists of a biopsy "wand" and 5 metallic prongs (wand size depending) with their tips connected by an Extensible cutting radiofrequency ring wire then pass from the wand and envelop an area of tissue ranging from 10 to 20 mm in diameter (depending on wand size) in only 8 s. The Prongs pass RF waves into surrounding tissue in order to excise and allow haemostasis, but not to the extent of damaging the sample. Allows excision of the entire breast mass or suspicious area as an intact complete mass may be with safety margin.

Indications of Large needle procedures :

Therapeutic = Resection of Image evidence of Benign Lesions (if surgery is not preferred)
Fibroadenoms or Lipomas, Complex Cysts , Intraductal Vegetations, Papilloma, Hematomas , Scars
Advantages: No hospitalization, Local anesthesia, Better targeting ,Small Incision ,No sutures ,No scar, Short duration of procedure, Can resume normal activity in 30 minutes & Poor side effects.

Diagnostic

1. Suspicious lesions (BIRADS IV) with a size of less than 5mm
2. Mismatching radiography& pathology = Suspicious lesion & negative FNB or CNB
3. Mastopathic areas : for exclusion of suspected high risk lesions : ADH, radial scar, DCIS, lobular breast cancer
4. Unclassified/ suspicious microcalcification .
5. Focal architecture distortion .
6. Containdications to anasthesia and operations

Conclusion:

BLES & VAB are used as the primary method for histopathology diagnosis of suspicious small & borderline lesions as well as the unclassified microcalcfications.
There are some limitations to BLES including; lactating females, patients with breast implants and patients presenting with a lesion close to the skin or in the axillary tail.
BLES is favored in high risk lesions & DCIS considering the relative high underestimation rate associated with VAB and not found with the BLES . Moreover BLES offers complete lesion removal with available margin evaluation.

Biography

Naglaa Abdel Razek is a graduate of Cairo University faculty of medicine the year 1993 and completed her studies for the MD in Radiology from the Cairo University in the year 2003. And she completed her training in breast imaging and intervention in Germany, Italy and France. Since 1995, she is working as a staff member in the radiology department and she was nominated as a professor of radiology since May 2013. She is one of the most recognized radiologists in Egypt working in the field of breast cancer screening, diagnosis and intervention. She introduced to Egypt the technique of non-invasive removal of benign tumors of the breast using the vacuum assisted biopsy and also she introduced a very new technique to Egypt , the breast lesion excision biopsy (BLES) and she is working with international group to set guidelines for the use of such a new technique. Dr Naglaa is an active member in the Women's Health Outreach Program at the Ministry of Health since 2007 and in October 2014 till May 2016 ,she was nominated as the General manager of Egypt breast cancer screening program and women health in Egypt and she occupied the post of being the Minister Advisor in radiology for one year from January 2015 to January 2016. She is an active member and Board member of many National & International societies, She is president and founder of the Pink foundation and Detect Breast course & she is an international Board member of the American Association of Women Radiologists, European society of Radiology ,European Society of Breast Imaging & the Radiology Society of North America. Prof. Naglaa also is the principle breast radiologist and interventionist in Alfa scan Radiology Center and she is the head of the breast unit since 2003 till present . Naglaa has many national and international publications and has presented many presentations in national and international conferences especially concerned with breast cancer. Dr. Naglaa's favorite mission is to fight breast cancer.

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Abdalla Abotaleb, OMICS J Radiol 2018, Volume 7
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Abdalla Abotaleb

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Why oncology field need Biosimilars?

Background: One of the major products in treatment expenditures at oncology field are biological products. Representing a remarkable percentage of oncology pipeline which increase economic burden on payers and may lead to treatment restrictions due to high cost of biologicals. Introducing biosimilars products may offer safe, effective, sometimes cost saving alternative to innovator biological therapies, which may lead to change treatment polices due to different alternatives represented by biosimilars.

Objective: The main objective is to evaluate introducing biosimilars to the oncology treatment through guidelines modification, numbers of treated patients, price discounts for innovator products and quality of service introduced to the patients.

Method: Data analyzed for (113,429) cancer patient for the last 3 years from national database including (treatment guidelines-patients satisfaction serves-reimbursement lists-price offers for innovator). Local biosimilars guidelines were the reference for estimating local biosimilars.

Result: Introducing biosimilars products to Egyptian market at last 3 years lead to changing neutropenia guidelines were modified for including (GCSF as a routine treatment for both prophylactic and after chemotherapy). HER2+ guidelines modified to contain monoclonal products as a standard of care for both adjuvant and metastatic cases. Monoclonal antibodies were included at NHL guidelines. Number of treated cancer patients increased by 40% last 3 years. Price discounts for innovator products were found in values ranged from 35%-66%. Surveys illustrated that patient's satisfaction about introducing new products reducing time of treatment for neutropenia patients, hospitalization time decreased due to modification of neutropenia guidelines.

Conclusion: Introducing biosimilars to the oncology field may lead to offer safe, effective efficient solution for controlling budget and enhancing health service. Biosimilars may have a major role for achieving perfect computation at oncology field.

Biography

Abdalla Abotaleb, MD is a World Health Organization expert. He is also a consultant on health economics at the Egyptian Ministry of Health, as well as a member of the Egyptian health care reforming committee Ispor (member, judge and reviewer).

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Scientific Tracks & Abstracts (Day 2)

Muhammad Anwar et al., OMICS J Radiol 2018, Volume 7
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Doppler study of hepatic artery, basket and feeding vessels in liver malignant tumors

Muhammad Anwar[1], Ayesha Anwar Raza[1] and Syeed Amir Gilani[2]
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Introduction: Neovascularization develops around the hepatocellular carcinoma (HCC) and malignant tumors of liver in basket form. This leads to increased blood supply via hepatic artery. The quantification of hepatic artery, basket vessels and feeding vessels was done where ever it is found. The data was accumulated of liver tumors (malignant) from 2013 to Sep 2017 from color Doppler center. The center is in Punjab province of Pakistan. Here prevalence of hepatitis C is 6.5% which is very high. China has the highest burden of Hepatitis C Virus (HCV) infection cases. Pakistan has the second highest burden of HCV positive cases. This is a retrospective study.

Objective: The purpose of this study was to establish the Peak Systolic Velocity (PSV) of hepatic artery of hepatitis malignant lesions which are found in hepatitis-C and hepatitis-B related complication. Study comprises of 82 patients with almost equal females and males of age 40 to 70 years. It began in April 2013 and continues. Verbal consent was taken to include in this study. The study of liver cancers HCC and PSV 80 cm/sec should be a cut off value between benign and malignant tumors.

Method: Study comprises of 82 patients with almost equal females and males of age 40 to 70 years. It began in April 2013 and continues, in our outdoor during their USG consultation with convex probe. The multifrequency transducer 2.5 to 6.0 MHz was used. Hepatic artery was interrogated (seldom) at the head of pancreas with angle correction or in liver along with portal vein without angle correction (as at this naturally angle is corrected) in fasting state to keep the measurements uniform as food intake profoundly increases the PSV. Basket or circumferential vessels and feeding vessels were also studied.

Result: The normal PSV in normal subjects is 25-40 cm/sec. It goes up to 60 cm/sec in cirrhotic, if it goes beyond that, portal vein tumor or HCC will be suspected. We can take PSV of 80 cm/sec a cut off between benign and malignant tumors.

Biography

He studied M Phil from University of Lahore in medical ultrasound 2011 to 2013. Since then working in Doppler USG of liver. As in our region HCV is very much prevalent we started HCC Doppler study under supervision of Aamir Gilani PhD dean of USG department.

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Charu Jora, OMICS J Radiol 2018, Volume 7
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Role of ^{68}Ga-DOTA-NOC PET/CT in detection of unknown primary neuroendocrine tumors (CUP-NET)

Charu Jora
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Aim: This study aimed to determine the role of ^{68}Ga-DOTA-NOC PET/CT in the detection of undiagnosed primary sites of neuro endocrine tumors (NETs) and to understand the tumor biology of the primarily undiagnosed tumors.

Method: Overall 47 patients (29 men and 18 women, age: 50±9 years) with documented NET metastases and unknown primary were enrolled. PET/CT was performed after injection of approximately 100 MBq (46-260 MBq) of ^{68}Ga-DOTA-NOC. Any area with intensity greater than background was considered to be indicative of tumor tissue and the maximum standardized uptake values (SUVmax) were calculated. CECT was done in all the patients prior to PET/CT study and the results were compared.

Result: In 37 of 47 patients (78%), ^{68}Ga-DOTA-NOC PET/CT localized the site of the primary: Stomach, duodenum, jejunum, ileum, pancreas (head, neck, uncinate process, body and tail), rectum, lungs, kidney, gall bladder and prostate. Size of primary tumor was less than 2 cm in 17 of 37 detected cases. Focal ^{68}Ga-DOTA-NOC uptake at the site of primary without underlying CT abnormality was seen in 3 cases. Rare sites of primary NET in gall bladder, horseshoe kidney and prostate were identified. Besides the usual metastases to lymph nodes, liver and bone, atypical metastases to lung, pancreas, adrenal gland, spleen, orbit, brain and bone marrow were detected in some cases. Osteolytic bone metastases were detected in few cases. Portal vein thrombus and splenic vein thrombus were additional findings in three cases. CT alone (on retrospective analyses) confirmed the findings in only 12 of 47 patients (25%). 6/47 patients with loco regional disease on PET/CT underwent surgical resection of disease. 21/47 with DOTA-NOC avid disease were started on octreotide therapy and PRRT. 11/47 with mild DOTA-NOC uptake were managed with systemic chemotherapy.

Conclusion: Our study shows that ^{68}Ga -DOTA-NOC PET/ CT detects both usual and unusual sites of primary tumor and metastases. Tumor size is an unreliable predictor of metastatic potential, as metastases is seen in primary tumors less than 1 cm in diameter. Early detection of rare atypical sites of primary NET like kidney and gall bladder helps in individualizing treatment approach. DOTA-NOC avidity and disease extent helps in systematic management of patients as seen in this study. Our data clearly indicate that ^{68}Ga -DOTA-NOC PET/CT is a promising imaging modality for evaluation of patients with CUP-NET.

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Limb-sparing surgery with vascular reconstruction in lower extremity soft tissue sarcoma: Promising results

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Introduction: There is uncertainty in the literature as to whether major vessel involvement in extremity soft tissue sarcomas constitutes an indication for amputation. This study includes 15 patients with lower extremity soft tissue sarcomas who underwent major vessel resection and reconstruction in the context of limb preservation for soft tissue sarcoma.

Purpose: To review the impact of vascular graft replacement following "en bloc" resection of Soft Tissue Sarcoma (STS) invading major lower extremity vascular structure on short term outcomes as regard limb-salvage rate.

Methods: Between December 2014 and January 2018, 15 consecutive patients with STS of the lower limb with vascular invasion were investigated, operated and followed up in Vascular Surgery Unit, Department of Clinical Oncology and Nuclear Medicine, Mansoura University Hospitals and were followed up for a period ranged from 3-36 months with mean of 13 months and a life table analysis was constructed for patency of arterial grafts and for the limb salvage rate.

Results: 15 patients (12 males and 3 females) aged between 16-57 years had vascular replacement grafts (11 ePTFE, 2 saphenous vein graft) for arterial reconstruction and 3 vascular replacement grafts (2 ePTFE, 1 saphenous vein graft) for venous reconstruction. Life table analysis for arterial construction showed primary potency rate of 73.85% at 10 months and 64.6% at the end of study and limb salvage rate of 86.7% at last follow-up visit.

Conclusion: Malignant vascular infiltration should not be a barrier for wide local excision for STS patients despite malignant vascular invasion of lower extremity and patients can avoid amputation after careful selection of patients.

Biography

He is presently working in Department of Vascular Surgery, Mansoura University. He attended several international and national conferences and workshops

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Effect of fluence smoothing on the quality of intensity-modulated radiation treatments

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Radiation therapy uses ionizing radiation to inhibit the functioning and multiplication of tumor cells. The objective of radiation therapy is to deliver a prescribed amount of lethal radiation dose to the tumor while minimizing the dose to surrounding normal tissues. This has been achieved with the help of a technique called intensity-modulated radiation therapy (IMRT), which generally uses inverse planning with an optimization algorithm to reach the desired dose distribution to the planning target volume (PTV) and a low dose to the surrounding organs at risk (OARs). Depending on the geometry of the PTVs and the OARs, the demands for conformity to the PTV, and the tolerance of the OARs, the treatment plans can be correspondingly complex. However, more complex plans result in a large number of monitor units (MUs) which causes greater practical difficulties such as long-term secondary cancer induction, increased skin dose, a longer treatment time, and uncertainties during treatment delivery. Commercially available treatment-planning system (TPS) typically includes a fluence-smoothing function for reducing the complexity of a treatment plan. In this study, we investigated the consequences of fluence smoothing on the quality of highly complex and inhomogeneous plans in a TPS, EclipseTM. The smoothing function was applied both in the direction of leaf travel (X) and perpendicular to leaf travel (Y). Twenty IMRT plans from patients with cancer of the nasopharynx and lung were selected and re-optimized with use of various smoothing combinations from X=0, Y=0 to X=100, Y=100. Total MUs, dose-volume histograms, and radiobiological estimates were computed for all plans. The study yielded a significant reduction in the average total MUs from 2079±265.4 to 1107±137.4 (nasopharynx) and from 1556±490.3 to 791±176.8 (lung) while increasing smoothing from X, Y=0 to X, Y=100. Both the tumor control and normal tissue complication probabilities were found to vary, but not significantly so. No appreciable differences in doses to the target and most of the OARs were noticed. The doses measured with the I'MRT MatriXX 2-D system indicated improvements in deliverability of the plans with higher smoothing values. Hence, it can be concluded that increased smoothing reduced the total MUs exceptionally well without any considerable changes in OAR doses. The noted differences of about 23.0% and 23.9% in the respective treatment MUs are outstandingly high. The transformation of smoothing values from default to X=70, Y=60 saved around 390 MU (nasopharynx) and 290 MU (lung) per fraction. This will result in a reduction of approximately 32 and 21 minutes, respectively, in the total radiation-beam-on time for the entire course of a patient treatment. In addition, the observed progress in plan deliverability in terms of the gamma index strongly supports the recommendation of using smoothing levels up to X=70 and Y=60, at least for the anatomic regions studied. In spite of all practical advantages, IMRT often results in delivery of large number of MUs which is of great concern in radiation oncology. Our study strongly recommends the up gradation of vendor default smoothing levels of Varian Eclipse™ treatment planning system to the stated values. This is significant because of the large scale reduction in MUs which minimizes the potential consequences of long term effects such as secondary cancer induction and other radiation induced issues. This study contains important data for clinical staffs and would be particularly helpful for Eclipse users. The paper should be of interest to researchers in the areas of radiation oncology, medical physics and medical dosimetry. Radiobiological models were proved to be effective in predicting treatment outcome precisely by use of DVH data when compared to the uncertainty of using physical dose metrics alone for plan evaluation. This study not only is limited to physical dose evaluation, but also investigates the impact of fluence complexity on radiobiology based plan quality parameters. Also, this publication verifies the deliverability of treatment plans by actual measurement based on a larger set of data. Hence, this paper discloses the method of radiobiological plan evaluation and dosimetric measurements clearly and the audience will be able to use these in their clinical practice. Thus this study of nasopharynx and lung IMRT treatment plans with different scenarios of fluence levels will help them to understand the effect of user-interfaced fluence smoothing with the EclipseTM TPS in detail.

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The role of radiotherapy and microwave ablation in a rare case of inoperable Lymphangioma of the mediastinum

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A 36 year old male presented with complaints of severe dyspnea, left sided chest pain and anemia. On evaluation, CT Chest revealed a large well defined mild enhancing mass in the mediastinum on the left side with moderate pleural effusion requiring intercostal drainage tube. CT guided trucut biopsy showed an angiomatous lesion suggestive of lymphangioma. The lesion was deemed inoperable as it was encasing the arch of aorta, Left subclavian and the Left pulmonary artery. In view of symptomatic progression and deterioration of the patient, external beam radiotherapy was considered and he received 30 Gy in 10fractions using conventional technique. Patient persisted to deteriorate and underwent CT guided microwave ablation of the mediastinal mass from 4 points of entry. Following the procedure the patient symptomatically improved and was hemodynamically stable. Reassessment CT done at 4 months and 11 months showed significant regression of the lesion and the pleural effusion. Lymphangiomas are rare benign neoplasms that occur within the second year of life. Adult lymphangiomas are rare and mediastinal lymphangiomas are uncommon. Although surgical excision remains the mainstay of managing. Lymphangiomas, other forms of local therapy such as radiotherapy, microwave ablation or a combination of both may be used in case of inoperable or recurrent Lymphangiomas.

Biography

Ritesh J.M. Santosham completed his M.B.B.S at Sri Ramachandra University, Porur, Chennai in 2013 following which he joined Cancer Institute Adyar in 2014 and completed M.D in Radiation oncology in 2017. He has resented several papers at national level conferences with keen interest in thoracic oncology and advanced techniques in radiotherapy.

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