can be recommended in selected cases to optimize the utilization of both modalities in a "one-stop" session.

P0254
Multimodality imaging PET-CT using 18F-labeled 2-deoxyglucose (FDG) ensures effective treatment delivery by improving the staging of head and neck malignancy
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Introduction: Accurate staging of head and neck malignancy is important. Initial clinical assessment of cancers in this region is complicated by the complexity of regional anatomy. Since conventional imaging is limited by site, location and morphological changes of lesions during postoperative or therapy pathways, we conduct this prospective study to demonstrate the initial staging discrepancy between clinical and FDG PET-CT, highlighting the percentage of management change during the study period. The study was conducted under local institutional ethic approval. 30 patients were recruited between February 2010 till March 2012 from ENT clinic of Serdang Hospital and Clinical Oncology Unit of University Malaya Medical Centre Kuala Lumpur. All patients were clinically assessed and staged using the American Joint Committee on Cancer (AJCC) TNM staging. All patients also underwent whole body 18F-FDG PET-CT study at the Centre for Diagnostic Nuclear Imaging of Universiti Putra Malaysia. The diagnosis of all lesions were histologically confirmed. Staging from clinical conclusion was compared with staging using FDG PET-CT imaging findings. The percentage of management changes were recorded from the discrepancies. Results: There were 17 females, 12 Malay and 1 Indian ethnicity. The mean age was 45.1±14.5 with initial and second peak age incidence of 20-30 year old and 60-69 year old. Nasopharyngeal carcinoma was the commonest malignancy (56.7%). FDG PET-CT improved sensitivity and accuracy in detecting head and neck malignancies in comparison with clinical assessment at 95.8% and 92.1% from 95.6% and 90.7% respectively. The T and N stage were altered in 63% of cases while there was no management change in the remaining 37%. There were 27 true positive cases, 1 false positive and false negative cases and 1 true negative case found on PET-CT. The negative predictive value from clinical assessment was lower than PET-CT imaging. Conclusion: Multimodality imaging using 18F-labeled 2-deoxyglucose (FDG) PET-CT improves initial clinical staging thus ensuring effective treatment delivery in head and neck cancer patients.

P0255
The value of functional imaging in monitoring anti-tuberculous treatment using 18F-FDG PET in comparison to morphological 3-dimensional CT changes.
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Introduction: Effective treatment delivery is desirable in tuberculosis infection. CT characteristics and clinical parameters have been used in confirming the diagnosis and following treatment with acceptable limit of 33mm diameter in cases of nodular or caseous lesions in transverse abdominal and thoracic images. Chronic granulomatous inflammatory conditions such as TB is known to demonstrate high FDG activity in PET-CT with acceptable cut-off SUVmax of 2.8 at our centre. Thus, the objective of this work is to evaluate the efficacy of anti-tuberculosis (TB) treatment by using 18F-FDG PET imaging in patients with clinical and radiological evidence of active TB infection. Aim 1: To evaluate treatment efficacy using SUVmax of 18F-FDG PET in comparison to chest X-ray and clinical assessment. Methodology: This study compare the results of 16 PET-CT studies performed on 8 patients before and after TB treatment for imaging of Tuberculosis, University Putra Malaysia. All patients received DOT regime for at least 6 months duration and clinically assessed through general physical conditions and blood inflammatory markers at diagnosis and follow-up. The SUVmax was measured in a total of 19 lesions found at imaging. The metabolic activity in SUVmax, size of lesions in 2-dimensional and 3-dimensional measurement were recorded. Lesions were categorized as complete or partial/non responding depending on complete physical and metabolic disappearance or reduced by more than 2 cm in diameter. Partially responding lesions were categorized as SUVmax les than 2.8 or lesions measuring >1 cm in diameter on CT scan. The accuracy of each method was assessed in comparison with final clinical outcome together with treatment parameters. Results: The average time for repeat 18F-FDG PET-CT imaging is 4.4 months. The mean SUVmax of 3.28 (0.84). After 6 months of treatment the mean SUVmax reduced to 1.4 (1.9) CT scan, the average diameter of lesions prior to treatment on 3D measurement are 22.6, 27.0 and 38.6 mm, following treatment, the average diameter decreased to 13.3, 15.2 and 21.1 mm respectively. 3D measurement demonstrated high false negative in depicting non responders compared to 2D measurement. SUVmax is more sensitive in depicting treatment responders. The overall accuracy was similar with higher NVP for SUVmax in excluding residual infection (71% and 65.6% respectively). Conclusion: Our study highlight the importance of SUVmax as an additional parameter to be included in reporting anti-TB treatment. Thus, diagnostic informations from integrated imaging system 18F-FDG PET-CT can provide useful combined informations with higher accuracy in navigating anti-TB treatment.

P0256
Evaluation Of A New And Novel 18F-Fluorophenyl Tetraphenyl Phosphonium Nitrile (18F-BP-FET) For Measuring Myocardial Perfusion
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Aims: To evaluate the MPI characteristics of 18F-BP-FET in human subjects. This work will be performed in CAD patients with histories of myocardial ischemia or scar. Materials and Methods: The patients were divided into two groups. The first group was 18 Patients with myocardial ischemia as determined by cardiac catheterization and MPI-ETT SPECT. The second group was 18 patients with myocardial scar as determined by cardiac catheterization and MPI-ETT SPECT. Each group has been imaged with 18F-BP-FET to determine its utility for evaluating these conditions. Imaging was performed with a two day protocol. One day study in the group that was injected with 10 μCi of 18F-BP-FET at rest. One hour after injection, the patient was positioned supine in the gantry of a Siemens Biograph 64 PET/CT, with the heart centered in the field of view, and a 15 min, gated acquisition was performed. On the second day of the study, the patient had a stress test (Bruce protocol) and 10 μCi of 18F-BP-FET was injected at peak exercise level. One hour after injection, the patient was positioned supine in the gantry of a Siemens Biograph 64 PET/CT, with the heart centered in the field of view, and a 15 min, gated acquisition was performed. The uptake of 18F-BP-FET in the myocardial segments and the results of MPI-ETT or cardiac catheterization was compared by analysis of variance followed by Duncan's new multiple range test. The uptake (SUV-average and SUV-max) in each myocardial segment was recorded. Results: Of 342 segments, 322 segments of SPECT MPI were positive (76%), while 312 segments of 18F-BP-FET were positive(90%). The results of 232 segments in SPECT MPI were consistent with CardiOPT. kappa-value was 0.39. On 18F-BP-FET imaging, Mean SUV value and maximum SUV value of nine segments in standard cardiac orientation (short axis, horizontal long axis and vertical long axis) were recorded. The uptake of 18F-BP-FET in the myocardial segments and the results of SPECT MPI were compared by analysis of variance followed by Duncan's test. It showed significance (p<0.05). Conclusion: SPECT-BFET will be consistent with the results of MPI SPECT, however, image quality was much more superior. In patients with balanced ischemia 18F-BP-FET may reveal metabolic defects that are missed by MPI SPECT.

P0257
Use of neutral oral contract agents in PET-CT imaging procedures
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Introduction: Adequate distention of the bowel is a prerequisite for a good quality PET-CT procedure. However, bowel distention is difficult to achieve and is associated with increased risk of bowel perforation and ileus. In addition, the use of such contract agents may result in increased interventional attenuation, thus reducing the overall image quality. Additionally, manual contrast is not well appreciated on the positive oral contrast studies. This study was conducted to attempt to overcome these pitfalls by using a neutral oral contrast for PET-CT procedures. Aim To qualitatively and quantitatively assess the efficacy of diluted Manitol (1.5%) as neutral oral contrast agent in comparison to the positive iodinated contrast (Gastrografin). Materials and methods: Heterogeneous group of 100 patients, who were referred for a whole body FDG-PET-CT were included in the study. 50 cases were administered the conventional iodinated contrast (Gastrografin) while the other group of 50 cases was administered Manitol solution (1.5%). PET-CT was acquired using the standard protocols. Following the contrast administration, it was evaluated in both groups and was analyzed. - The average distance (in cm) achieved of the stomach, jejunum and ileum - Mean SUV over the bowel loops. - Costing results: Bowel distention in the group with Manitol was comparable, and in some cases, better, than those with iodinated oral contrast administration. The mean distention over stomach with Manitol was 6.7 cm (± 6.3 cm with iodinated), over jejunal loop was 3.37 cm with Manitol (± 2.1 cm with iodinated) and over ileal loop 2.37 cm with Manitol (± 2.0 cm with iodinated contrast). - The mean SUV obtained over the bowel loop was significantly lower in the neutral contrast agent (2.1) in the iodinated contrast (3.8). - An added advantage with this group is the lesser amount of iodine exposure.

The economics of using diluted Manitol (costing $7.51 per patient) is much favourable than iodinated contrast (costing $749). Conclusion: Diluted Manitol as a neutral oral contrast in the PET-CT procedures provide almost comparable, and in some cases, better bowel distention than iodinated contract agent; providing a neutral oral contract induced attenuation over-correction artifacts. There is also better visualization of the mucosal bowel wall lesions. This comes with the added benefit