is applied. The image is then exported by satellite to Italy where the information is extracted over the internet and sent to ACH. At this point the image is uncompressed and sent to mammoreport station and archive. The capture of the image to arrival at the mammoreport station and archive requires only minutes to complete and all images are double reported.
Conclusions: In itself, the use of digital mammography is more beneficial compared with traditional film, e.g. lower radiation, images are more easily manipulated by radiologists for ease of reporting, there is easier storage of images and is ultimately more economical and cost effective. For Action Cancer the use of satellite transmission with digital mammography on a mobile unit is an extremely successful method for providing access to high quality screening services, especially to those in underserved areas.

1022 POSTER

The usefulness of FDG-PET in diagnosis and management of peritoneal seeding patients with colorectal cancer

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Background: Peritoneal seeding of colorectal cancer(CRC) is a common cause of morbidity and eventual mortality. But accurate diagnosis of peritoneal seeding is not easy and remains a diagnostic challenge.
Purpose: This study examined and compared diagnostic accuracy of F-18 FDG PET and CT in detecting peritoneal seeding in CRC. We retrospectively identified characteristic patterns of F-18 FDG uptake for detecting peritoneal seeding.
Methods: This study enrolled 63 CRC patients suspected peritoneal seeding on clinical symptoms and performed FDG PET-CT and CT. Final diagnosis was made by biopsy or ascitic aspirate and 49 patients of them diagnosed peritoneal seeding (seeding+) and 22 patients diagnosed as without peritoneal seeding (seeding−). We also assessed FDG PET scans from 20 healthy volunteers(control) as a normal control study. PET and CT Images visually interpreted by two experienced physicians, who had achieved consensus in diagnosis. In each FDG PET scan, the maximum standardized uptake values (SUVmax) were measured over peritoneal lesions in seeding+ patients, over the area of most intense intestinal uptake in seeding-patients and control respectively. The characteristics of FDG uptake patterns were evaluated as followed: overall pattern (focal or diffuse), heterogeneity (yes or none) and intensity (low, or equal, faint to moderate, intense)
Results: The sensitivity and positive predictive value (PPV) of FDG PET were superior to CT for the detection of peritoneal lesions (sensitivity: 71.4% vs 57.1%, specificity: 72.7% vs 54.5%; PPV: 85.4% vs 73.7%, NPV: 53.3% vs 36.4%). The FDG uptake patterns in seeding + patients was divided into nodular (14), diffuse (23) and mixed pattern (12). SUVmax threshold of 5.2 produced a diagnostic accuracy of FDG PET of 78% by ROC analysis. The additional information provided by FDG PET allowed more accurate diagnosis in 12 patients (24%), and led to alteration of the therapeutic strategy in 6 (12.2%) of the enrolled patients with peritoneal seeding.
Conclusions: FDG-PET was more sensitive than CT for the detection of peritoneal seeding in patients with CRC and altered patient management in some of them. Thus, the application of FDG-PET may be beneficial to the management of peritoneal seeding in patient with CRC.

1023 POSTER

Lymph node fluorodeoxyglucose (FDG) uptake as a predictor of chemotherapy sensitivity in malignant lymphoma

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Background: The usefulness of the FDG PET for malignant lymphoma was discussed for many times and verified with the contribution to the diagnosis, treatment and recurrence evaluation. However, quantitative analyses were rarely identified for this disease entity.
Purpose: To evaluate quantitative value of FDG uptake as a proliferating index and clinical significance as a response predictor, we performed this study.
Methods: A retrospective analysis were performed in 42 patients with malignant lymphoma who had FDG-PET before multiagent-chemotherapy. In all study patients, reassessment of histological specimens was performed by a hematopathologist. In addition, the proliferating activity was analyzed using the Ki-67 (MIB-1) immunohistochemical assay. We investigated the nodal FDG uptake (visual analysis and semiquantitative analysis; SUV and relative uptake ratio) in lymphoma patient before chemotherapy. We compared maximum nodal FDG-PET uptake-ratio with Ki-67 expression. Attenuation-corrected whole body PET images were acquired 60 minutes after injection of 370–555 MBq FDG with a dedicated PET scanner (ECAT HR+ scanner, Siemens-CTI, Knoxvile, Tenn., USA). Images visually interpreted by two experienced nuclear physicians, who had achieved consensus. We analyzed the degree of FDG uptake. Visually, the degree of FDG uptake was classified from grade −1 to grade 3: −1, lower; 0, equal; 1, slightly higher; 2, moderately higher; 3, intensely higher. Maximal standard uptake value (max SUV) and uptake ratio of max SUV for lesion to the mean SUV for contralateral basal lung were calculated.
Results: Hodgkin's lymphomas were in 6 cases. According to the WHO classifications, the most common histologic subtype was diffuse large cell lymphoma among 36 Non-Hodgkin's lymphoma patients. All chemotherapy regimens contained doxorubicin. Nodal FDG uptakes were showed linear correlation with Ki-67 expression levels (correlation coefficient $r = 0.667$, $p = 0.0001$). Total response rate to chemotherapy was 70.2%. The patients with higher nodal FDG uptakes (grade +2, +3) had higher response rates than with lower nodal FDG uptakes (grade +1, 0, +1) (45.2% vs 25.0%, $p = 0.018$).
Conclusions: The nodal FDG uptakes were significantly related with the responses to doxorubicin-based multiagent chemotherapy. In conclusion, nodal FDG uptakes may be able to function as a predictor of chemotherapy sensitivity.

Symptom Science

Poster presentations (Wed, 26 Sep, 09:00−12:00)
Symptom science

1100 POSTER

Body image and breast symptoms in early breast cancer: first results of the UK standardisation of breast radiotherapy (START) trials

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Aims: To determine the impact on body image and breast symptoms of radiotherapy (RT) fractions >2 Gy in terms of normal tissue damage in women with early breast cancer. In the UK START trials (ST-A and ST-B) a randomised comparison of 41.6 Gy or 39 Gy each in 13 fractions was tested against a control dose of 50 Gy in 25 fractions (ST-A) and 40 Gy in 15 fractions against the same control (ST-B).
Methods: Women participating in the quality of life (QL) sub-study completed the 10-item Body Image Scale (BIS), EORTC BR23 QL scale, and protocol specific questions relating to skin appearance following RT and (in wide local excision [WLE] patients only) breast appearance, shrinkage and hardness. Questions were recorded on a 4-point scale from "not at all" to "very much". QL was completed after surgery but before RT and at 6, 12, 24 and 60 months follow-up. For BIS and the breast symptoms subscale score (both numeric scores) comparisons between RT schedules and change from baseline were tested using weighted GEE models including type of surgery as scores are known to vary between subgroups. Individual breast symptom items were classified as to whether patients had ever reported levels of "quite a bit" or "very much", and survival analysis used to compare schedules.
Results: 2180 (99%) women completed baseline QL (mean age 56.9 years, range 26−87). 82.9% of patients underwent WLE and 33.3% received adjuvant chemotherapy. In both ST-A & B, there was no significant impairment of BIS or the breast symptoms subscale score by any one of the regimens compared with the others, and scores improved during follow-up compared with baseline. Rates of change in skin appearance and breast hardness following RT were lower in 39 Gy (ST-A) and 40 Gy (ST-B) vs 50 Gy. There was also a suggestion of a dose-response relationship for breast swelling and overall change in breast appearance, although this was not significant.
Conclusions: The QL domains reflecting normal tissue effects following radiotherapy endorse the clinical finding that hypofractionated RT schedules can be used in early breast cancer.