Abstracts

E5

IMPORTANCE OF FDG PET-CT IN DIAGNOSIS AND FOLLOW-UP OF PATIENTS WITH BREAST CANCER
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Background: Our aim was to define extra information of FDG PET-CT examination compared to the previous diagnostic images; to evaluate the percentage of confirmation of clinically supposed status and to define it’s influence on oncologic treatment of patients.

Material and methods: The medical records of 143 consecutive patients with breast cancer referred from three oncologic centers from October 2008 to September 2009 were retrospectively reviewed. PET-CT imaging was performed with GE Discovery ST scanner according to the usual protocol. 143 patients (142 women, 1 man, mean age = 56.9 years) have 155 breast tumors. The histologic subtypes of the primary tumor were infiltrating ductal carcinoma in 102, infiltrating lobular carcinoma in 18, DCIS alone in 9, other/unknown in 26 cases. Hystologically Grade 2 carcinoma occurred in largest proportion. 70 conservative operations and 74 mastectomies were performed. In remanider cases the operation was not performed or type of surgical procedure was not known.

Results: Definite diagnosis was established in 129 cases (84.3%), the extent of disease was increased in 40 (31%), diagnosis was unchanged in 24 cases (18.6%), it was negative in 65 cases (50%). The PET-CT result was equivocal in 24 cases (15.6%) having caused partly inadequate referral, partly difficulty of differentiation between tumor and inflammation. PET-CT examination gave excess information for physicians in 31%. The therapy was altered in 40 cases (26%) based on PET-CT result.

Conclusion: FDG PET-CT examination is useful in management of patients with breast cancer in case of adequate indication.

E6

FDG PET-CT IN MANTLE CELL LYMPHOMA
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Background: We assessed the potential role of PET-CT in the diagnostic workup of mantle cell lymphoma, which type of lymphoproliferative disease unites the unfavourable characteristics of aggressive and indolent lymphomas.

Material and methods: 122 PET-CT examinations of 56 patients were retrospectively analysed [11 pre-treatment, 17 interim, 20 restaging, 14 pre-, 23 post-Haemopoietic Stem Cell Transplantation (HSCT) evaluations, and 37 PET-CT examinations due to clinically suspected relapse].

Results: 9/11 staging examinations before initial therapy had revealed pathologic FDG accumulating fociuses. Among the interim examinations (17), only 6 patients achieved complete metabolic remission (CMR) in 11 cases FDG-avid lesions were found. Among the 10/20 restaging PET-CT examinations indicating CMR, 4 patients relapsed within 1 year. Among the examinations showing CMR on the pre-transplantation PET-CT (9/14), relapse evolved in 1 case in the first year after transplantation. In 1 of 23 examinations CMR was not achieved after HSCT, from the 21 of 23 cases showing CMR on post-HSCT PET-CT, 2 patients relapsed within 1 year. In 1 of 23 post-transplantation examinations clinical signs of relapse did not develop after positive PET-CT. Clinical relapse suspicion was confirmed by PET-CT in 13 cases, in 5 of 37 cases it was found to be false positive, in the remaining patients relapse did not evolve after negative PET-CT (19/37).

Conclusion: FDG PET-CT seems to be an accurate method in the diagnostic workup of mantle cell lymphoma, including pre-treatment staging, interim,
and restaging assessments. Its negative predictive value appears to be acceptable, but remains below the results achieved in Hodgkin- and high grade B cell lymphomas. Regarding the characteristics of the disease its future role may mostly increase in the pre-HSCT prognostic evaluation.

E7

18F-FDG PET/CT IN THE FOLLOW-UP OF BREAST CANCER PATIENTS WITH POSITIVE SLN WITHOUT ALND

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Background: The Hungarian National Institute of Oncology has just closed a randomized clinical phase III study. The OTOSAR (Optimal Treatment of the Axilla — Surgery or Radiotherapy) trial compared the result of the completion axillary lymph node dissection (ALND) and axillary nodal irradiation (ANI) without ALND in patients with early-stage breast cancer after positive sentinel lymph node biopsy (SLNB). In the investigational arm of the trial patients received 50 Gy ANI postoperatively without ALND. Actually we had information only about the sentinel lymph node (SLN) status, but the further nodal involvement remained unknown. Positron emission tomography combined with computed tomography (PET/CT) has been receiving increasing attention recently for restaging and follow-up of breast cancer. The aims of this study were to evaluate the therapeutic effect of the axillary nodal irradiation and to detect early axillary recurrences or residual diseases.

Material and methods: In year 2009, forty-five T1-T2 SLNB positive patients were retrospectively selected from the investigational arm of the OTOSAR trial. All patients underwent surgery (breast-conserving or mastectomy) and SLNB, the SLN(s) were found positive and the patients received 50 Gy ANI instead of completion ALND. Six months after the end of the radiotherapy, patients underwent 18F-FDG PET/CT and mammography combined with breast and axillary ultrasound or breast MRI simultaneously. The findings of PET/CT, mammography and/or breast MRI were compared.

Results: Only 5 out of 45 patients had suspicious findings in the axillary tail on mammography combined with breast and axillary ultrasound. In those five patients PET/CT suggested locoregional residual disease in only one patient that was confirmed by core biopsy. In the remaining four cases both the PET/CT and the biopsy showed no evidence of malignancy.

Conclusions: Our preliminary data suggest that axillary nodal irradiation (ANI) without completion axillary lymph node dissection (ALND) does not increase the risk of recurrence of the sentinel positive patients. Furthermore, the results of our study demonstrate the benefit of 18F-FDG PET/CT in the follow-up of breast cancer patients with positive SLN without ALND.

E9

THE PREDICTIVE VALUE OF FDG-PET/CT IN RESTAGING OF HODGKIN LYMPHOMA — WHAT WE CONSIDER AS A POSITIVE REPORT?

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Background: The negative predictive value (NPV) of FDG-PET/CT at the end of treatment in Hodgkin lymphoma is high. However, the rather low positive predictive value (PPV) is often leads difficulties in the clinical practice. In the last years a method was developed for the assessment of PET results, which is based on both CT and PET criteria. The use of SUVs are generally not appropriate to correctly judge the dignity of the lesions. In this retrospective study the aim of the authors was to define the predictive value of restaging PET/CT with the help of a 5-point scoring system. This system, which was developed for interim PET exams to assessment of therapy-effectiveness, correlates lesion’s intensities to mediastinal blood-pool or to liver uptake and takes no notice of CT criteria.

Material and methods: They analyzed 90 patients, who have PET/CT after the first line treatment between May 2006 and August 2010. The assignment of patients to "positive" and "negative" groups was performed by two different methods. Method 1: "positive" — the highest FDG uptake is higher than the liver uptake (point 4–5). Method 2: "positive" — the highest FDG uptake is higher than the mediastinal blood-pool uptake (point 3–5).

Results: The number of positive patients was 31 with Method 1, 14 out of which came to complete remission (CR) during the follow-up. The number of negative patients was 59 out of which 56 came to CR. Based on these data PPV was 56% and NPV was 95%. The number of positive patients was 36 with Method 2 with 17 reaching CR during the follow-up. The number of negative patients was 54 with 52 reaching CR. Based on these data PPV was 53% and NPV was 96%. The reason of false positivity mostly was inflammation what was already suggested by the reporting physician in some cases.

Conclusions: The authors concluded that PET/CT has high NPV and low PPV when using this 5-point scale. There was no significant difference between the results of the two methods. Reporting physicians can provide substantial help to the therapists by specifically stating of the most probably false positive lesions in the report, based on morphometry, localization, clinical data, etc.