images, according to EORCT criteria, 7 patients had PR, 1 SD and 4 had PD. NACT understaged 4 patients because PET-CT scan found new lesions in 2/4, PD for metabolic progression (>25% increase of SUV$_{max}$) in lymph node disease in another one and PR instead of CR in the last one. In 2 cases in which CT scan showed SD, PET-CT scan showed PR. 33.3% of patients underwent surgical intervention after NACT.

Progressive disease of stable disease according to PET-CT (new tumour manifestations or increasing SUV) was well correlated with an unfavourable outcome.

Conclusions: FDG-PET is suitable to assess response to NACT in patients with stage IIIA NSCLC accurately. 18FDG-PET-CT may be helpful in improving restaging after NACT since it allows a reliable assessment of residual tumour viability and it can find new lesions.

2107 POSTER
Diagnostic Performance of Selective Positron Emission Tomography for Lung Cancer Computed Tomography Screening: a Meta-Analysis

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Background: The effective lung cancer screening modality has not been established yet. Positron Emission Tomography (PET) has proven to be helpful in lung cancer for staging and evaluation and might be potentially used as a successful screening modality. The objective of our study is to estimate the diagnostic performance of selective PET for lung cancer computed tomography screening via a meta-analysis of a subgroup analysis from a systematic review.

Material and Methods: A systematic review is performed by reviewing primary studies focusing on PET screening for lung cancer using the following keywords "(lung cancer) AND (positron emission tomography) AND ((screen) OR (screening))" in Pubmed* on Nov 30th, 2010. The preliminary results will be partly presented in ISPOR 16th annual International meeting. Studies reported evidence of lung cancer computed tomography (CT) screening programs with selective PET were further identified as 'a subgroup analysis and were separately reported in the present study. Methodological quality was assessed using the modified criteria recommended by the Cochrane Methods Working Group on Systematic Review of Screening and Diagnostic Tests used in a previous study. A random effect model was used to calculate the pooled diagnostic performance of selective PET screening.

Results: Among the identified studies (n=2733), three studies were included in this meta-analysis. In total, 207 participants received PET in the prevalent screening, accounting for 2.5−3% of individual trial participants. The quality assessment was viewed as acceptable (>=75% of maximal score in each trial). The estimated pooled sensitivity and specificity with 95% confidence interval was 88% (76−93%) and 92% (85−96%) respectively in the prevalent screen.

Conclusions: PET can be used as a selective modality in combination with CT for screening lung cancer in high risk population, with a high diagnostic performance.

2108 POSTER
Combination of 99mTc-MIBI Scintigraphy, Fine Needle Aspiration and Ultrasound in the Preoperative Assessment of Patients With Hypofunctioning Solitary Thyroid Nodules (HSTN)

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Purpose: To evaluate diagnostic accuracy of 99mTc-MIBI scintigraphy in multimodality evaluation of patients with hypofunctioning solitary thyroid nodules.

Materials and Methods: 73 patients 19−65y.o. with HSTN on the 99mTc-pertechnetate scan were included in this retrospective analysis. Planar thyroid imaging in anterior, semi-lateral and lateral projections was performed 15−30 and 120 min after intravenous injection of 370−540 MBq

99mTc-sestaMIBI. All acquisitions were done on rectangular dual-head gamma camera equipped with low-energy, high-resolution, parallel-hole collimators. Images with focal and scattered patchy uptake of 99mTc-MIBI were scored as abnormal and suspicious for thyroid malignancy. Obligatory examinations included ultrasound thyroid examination (US) and US guided percutaneous aspiration biopsy (PAB) from nodules. All 73 patients were operated and have histological verification of disease.

Results: Scintigraphy revealed abnormal accumulation of 99mTc-MIBI in "cold" thyroid nodules in 61 of 73 evaluated patients. According to histological verification after surgery 56 cases were true positive, 8 − true negative, 4 − false negative and 5 − false positive. It must be mentioned that 4 of 5 patients with false positive results had follicular adenoma which must be also operated. Sensitivity (Sen), Specificity (Sp) and Accuracy (Ac) of scintigraphy with 99mTc-MIBI was as follows 93%, 57% and 80%.

PAB was non-diagnostic in 6 cases. All 6 patients had abnormality on 99mTc-MIBI scintigraphy and cancer on histology. PAB was false positive in another 2 cases. Finally, Sen, Sp and Ac of PAB was 91%, 86% and 90%. US examinations were true positive in 55, true negative − in 9, false negative − in 4 and false positive − in 6 cases with Sen (93%), Sp (64%), Ac (86%).

Combination of 99mTc-MIBI scintigraphy and PAB was significantly more accurate (Sen 97%, Sp 86% and Ac 93%) than PAB and US separately or in combination.

Conclusion: In patients with HSTN scintigraphy with 99m-MIBI characterized by high sensitivity but its combination with PAB offers the best diagnostic accuracy

2109 POSTER
Combination of Functional and Anatomic Imaging in Diagnosis of Axillary Lymph Node Metastases (LNMs) in Patients With Breast Cancer (BC)

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Purpose: To evaluate different imaging strategies for diagnosis of axillary LNMs in patients with primary BC.

Material and Methods: Ninety nine consecutive patients with primary BC were examined during period from 13.10.2006 to 27.04.2010. Functional imaging by scintigraphy (AxSc) with 99mTc-MIBI was performed in static and tomographic modes 15 min after iv injection. Focal areas of tracer accumulation in axial region were considered as sings of LNMs. Ultrasound (US) examination of axillary region was performed on 7.5 kH scanner. Nodes with diameter more than 1 cm were considered abnormal.

All patients were operated with axial LN dissection and subsequent histological evaluation.

Results: Scintigraphic signs of LNMs revealed in 40 patients: 23 − true positive, 17 − false positive. Among 58 women with normal AxSc results 8 had LNMs and 40 − uninvolved nodes. Sensitivity (Sen), Specificity (Sp) and Accuracy (Ac) of AxSc were as follows: 74%, 75% and 74%.

Sonography diagnosed LNMs in 44 women: 30 were metastatic on histology while other 14 − uninvolved. On the contrary 8 of 47 US normal sized nodes were metastatic on histology. US had following values when used for diagnosis of axillary LNMs: Sen − 79%, Sp − 77%, Ac − 77%.

When LNMs were diagnosed as the combination of concordantly abnormal US and AxSc examinations Sp reached 96%, Sen dropped down to 62% and Ac − 79%. Another model was based on the assumption that LNMs must be diagnosed in all patients with abnormal US or AxSc examinations. According to this strategy Sen reached 87%, Sp − 89% and Ac − 78%.

Conclusions: 1. We found comparative accuracy of US and AxSc in diagnosis of axillary LNMs in patients with primary BC. 2. Combination of both modalities can significantly improve sensitivity (87%) or specificity (96%) of final conclusion which is determined by established diagnostic strategy and criteria's that are used for BC diagnosis.

2110 POSTER
Human Adipose Tissue Derived Mesenchymal Stem Cells as Vehicles for Cell-based Glioma Therapy; a Model Based on Non-Invasive Bioluminescence Imaging

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Background: Lately adipose tissue mesenchymal stem cells (hAMSCs) have emerged as cellular vehicles for therapy of solid tumours, due