ROLE OF ^{99m}Tc-MIBI IN THE EVALUATION OF SINGLE PULMONARY NODULES – OUR FIRST EXPERIENCE

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INTRODUCTION: Evaluation of single pulmonary nodules might be a problem in cases when invasive procedures (such as bronchoscopy) are not available for different reasons. In those cases application of ^{99m}Tc-MIBI as noninvasive procedure might be useful diagnostic modality in management patients with single pulmonary nodules.

AIM OF THE STUDY: The purpose of the study was to assess the possibility of using ^{99m}Tc labelled 2 –methoxy isobutyl isonitrile (MIBI) to differentiate benign from malignant single pulmonary nodules.

METHODS: Our study was done in 11 patients with single pulmonary nodules. Prior to definitive diagnosis (bronchoscopy and PH report) all patients were completely evaluated by their physicians (anamnesis, examination, chest X-ray, transthoracic needle biopsy, CT) and by ^{99m}Tc-MIBI SPECT scanning. Early SPECT scan was done 10 minutes after the intravenous injection of 740 MBq ^{99}Tc-MIBI using Gama-camera 'Siemens-Orbiter' and low energy high-resolution colimator. Delayed scan was performed 60 minutes after the application of radionuclide. Sixty scans (each 10 sec.) were made during the Gama-camera rotation and saved in 64x64 matrix. Assessment of MIBI uptake in solitary pulmonary nodules was done qualitatively, by visual analyzing of increased accumulation in pulmonary nodule or equal with surrounding tissue.

RESULTS: Increased uptake of ^{99m}Tc-MIBI corresponding to the location of the nodule was found in 7/9 (78%) patients with malignant lesions. Histologically, there were 5 adenocarcinomas and 2 large cell carcinomas. Two patients with benign lesions had negative MIBI scans.

CONCLUSION: This preliminary study shows that ^{99m}Tc-MIBI might be an useful noninvasive diagnostic procedure in the evaluation of malignant single pulmonary nodules.