International Symposium on

Nuclear Endocrinology and Metabolic Diseases

Hotel Zira, Belgrade

11-12 May 2023

ABSTRACT BOOK

Co-funded by the Erasmus+ Programme of the European Union

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The Symposium is jointly organized by the Hybrid Imaging Active, the Academy of Medical Sciences and the Nuclear Medicine Section of Serbian Medical Society, in conjunction with the Faculty of Medicine, University of Belgrade, the Center for Nuclear Medicine with Positron Emission Tomography University Clinical Center of Serbia, and Serbian Society of Nuclear Medicine. It is also part of the **Erasmus Jean Monnet Module: Multi-disciplinary Education for Improving Quality of Nuclear Medicine Practice Based on the European Union Regulations and the International Atomic Energy Agency Programs (EDUQUAN), ERASMUS-JMO-2021HEI-TCH-RSCH.** The event has also been supported by Ministry of Science, Technological Development and Innovation of the Republic of Serbia.

The aim of the Symposium is to promote awareness about contemporary nuclear medicine methods in clinical practice in endocrinology and metabolic diseases. During two days, the scientific program will highlight the state-of-art morphological, functional and molecular imaging in the evaluation of endocrinology and metabolic diseases. Along with local experts, distinguished international speakers will share their experiences. The symposium provides an opportunity for clinicians and scientists to learn about new advances in this growing field and exchange scientific ideas and clinical practice.

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P1.Bone Scintigraphy in Paget`s Disease

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Paget's disease of bone (PDB) is a progressive chronice metabolic bone disease, characterized by focal abnormalities in bone remodeling, with initially increased osteoclastic activity and subsequent compensatory creation of new bone with a thickened and disorganized trabecular structure. This leads to pain, fracture, deformities and other complications. We report a case of a 62-year-old woman diagnosed with PDB, with previous performed plain X-rays and magnetic resonance imaging (MRI) and with elevated serum total alkaline phosphatase (ALP). Radionuclide bone scintigraphy has high sensitivity, hence showing bone lesions much before they appear on radiographs and also provides insight to the whole skeleton. Therefore, guidelines widely suggest a bone scintigraphy to determine the extent of metabolically active disease and identify possible asymptomatic sites.

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P2 Restaging after radical surgery of an appendiceal neuroendocrine tumors using scintigraphy of somatostatine receptors

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INTRODUCTION: Appendiceal neuroendocrine tumors (ANET)- carcinoids are usually discovered incidentally during surgery due to suspected appendicitis, as their first manifestation. Appendix is the third most frequent localization of NET in gastrointestinal system.

AIM: Estimation of diagnostic value of somatostatin receptor scintigraphy (SRS) in restaging of ANETs after surgery.

MATERIAL AND METHODS: In total 33 patients was investigated (23 females, 10 males), average age 47.3 ± 15.4 years, with histological diagnosis of ANET obtained during surgery. SRS was performed in all patients 2 h and 24 h after an i.v. application of 740 MBq Technetium-99m-Tektrotyd. In all positive and suspicious findings single photon emission computed tomography with computed tomography (SPECT/CT) was also performed. Visual interpretation of SRS was done using Krenning score.

RESULTS: Out of 33 patients, 11 were considered true positive (TP), 18 true negative, 3 false positive and 1 false negative. Out of 11 TP findings, 4 were local recurrences, 3 were metastases in abdominal, 1 in pelvic lymph nodes and 2 in liver. In 2 patients Krenning score was 4, in 7 was 3, in 2 was 2. Sensitivity of the method was 91.67%, specificity was 85.71%, positive predictive value was 78.57%, negative predictive value was 94.74% and accuracy 87.88%. SPECT/CT contributed to diagnosis in 6 TP cases with liver and lymph node metastases.

CONCLUSION: It was proved that SRS has high diagnostic accuracy in restaging after surgical treatment of ANETs.

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P3 Case report on a patient with Paget's disease detected using bone scintigraphy

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Paget's disease is a chronic disease of the bone of uncertain etiology. It is characterized initially by an increase in bone resorption which is then followed by a disorganized and excessive formation of bone, leading to pain, fractures and deformities. It can be mono- or polyostotic, and the most commonly affected regions are the pelvis, skull, spine and legs. Case:

A 52-year-old female patient presented with thoraco-lumbar back pain in January 2022. A diagnostic MRI scan of the spine was performed in March 2022 where pathological fractures of Th12 and L1 vertebral bodies were visualized. The patient's blood was sent for lab analysis which displayed increase alkaline phosphatase and vitamin D, with potassium and phosphate being within reference ranges. Surgery with stabilization of the thoracic segment of the spine was performed, as well as a biopsy. The working diagnosis was a bone disease of unspecific etiology. The patient was then referred for a bone scintigraphy at the department of Nuclear Medicine in June 2022. The bone scan reported an increased accumulation of osteotrophic radiopharmaceutical in both Th12 and L1 vertebral bodies which appeared expanded, therefore confirming osteoblastic lesions in these regions, and eliminating involvement of other parts of the skeleton. After revision of the biopsy specimens, a diagnosis of Paget's disease was established, and treatment with vitamin D and calcium supplements was started.

Conclusion:

Bone scintigraphy has an important role in aiding of the diagnosis of Paget's disease and can provide information on the number of lesions and localization of involved bones. Some limitations of bone scans include the possibility of misdiagnosing bone lesions as metastases or bone fractures. However, as in this case with a complete clinical picture, it is incredibly useful in confirming the diagnosis of Paget's disease.

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P4 An Unusual Case of Metastatic Functional Differentiated Thyroid Carcinoma

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Introduction: Most common causes of hyperthyroidism are subacute thyroiditis, Graves' disease and toxic adenoma, in which nuclear medicine already has a well-established role, in forms of thyroid scan and uptake, and radioiodine treatment. However, rarely, thyrotoxicosis can be caused by functionally differentiated thyroid carcinoma (DTC) and its metastasis.

Case report: Here, we report a case of a 67-year-old female patient who had been initially treated for hyperthyroidism caused by a toxic adenoma in the left lobe of the thyroid gland but remained hyperthyroid after two doses of radioactive iodine (RAI). Due to pelvic pain and low extremity weakness, the patient underwent a further evaluation with FDG PET/CT scan which discovered a soft tissue lesion in the sacrum as well as multiple bone metastases. A biopsy of the sacral mass revealed it to be a metastasis of DTC. The patient received palliative radiotherapy treatment for the sacrum lesion and total thyroidectomy (TT) was also done. Two months after TT she presented again with signs and symptoms of thyrotoxicosis. An I 131 whole body scan was performed and revealed multiple radioiodine avid lung and bone metastases, and she was subsequently treated with two cycles of radioiodine therapy (RIT). Following the administration of RIT, the patient had stable disease for the next year after which she underwent treatment utilizing the Gamma Knife for the brain metastases. The patient continued to receive sorafenib till now and she is currently in a stable condition.

Conclusion: This case highlights that unexplained thyrotoxicosis should be considered as a potential complication of metastatic disease, in which both diagnostic and therapeutic application of radioiodine can play a significant role.

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P5 Lymphocytic hypophysitis detected on FDG PET/CT – a case report Stojiljković Milica[1, 2], Brajković Leposava[1].
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Background: Lymphocytic hypophysitis is a rare disease characterized by the infiltration of lymphocytic cells into the pituitary gland, due to an autoimmune aetiology that leads to pituitary dysfunction and occurs in pituitary patients with an incidence ranging from 0.24 to 0.87%. 18F-fluorodeoxyglucose (FDG) positron emission tomography (PET) is well-established technique in detecting active inflammatory sites in body, due to elevated GLUT expression in inflammatory cells, but brain shows high physiological FDG uptake. Under physiological conditions, pituitary gland volume is small and commonly it is thought to manifest a background level in FDG PET/CT imaging.
Case presentation: Here, we report a 14-year-old female presenting with headache, diplopia and elevated body temperature of 37.2°C. Blood work showed leucocytosis with lymphocytosis, and laboratory analysis revealed secondary hypocorticism, hypothyroidism and hypogonadism. Ophthalmologist reported left eye sixth cranial nerve paresis. MRI revealed symmetric space occupying lesion in sellar region dominantly localized in hypothalamus, which engaged infundibulum and optic chiasma, showing postcontrast enhancement. FDG PET/CT localized the pituitary glucose uptake and displayed a SUVmax of 4.7. Hypermetabolism was also present in hypothalamus, mesencephalon and proximal pons. All findings indicated diagnosis of lymphocytic hypophysitis. After glucocorticoid treatment was started, the patient displayed radiological and clinical improvement.
Conclusion: Autoimmune hypophysitis can display elevated FDG uptake on PET/CT, which aids in the localization of the lesions and confirmation of disease.

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P6 Paratracheal index - one of the markers of thyroid disease on radiography

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Abstract body:
Introduction: The paratracheal index represents the ratio of the distance from the front wall of the trachea to the edge of the pretracheal subcutaneous fatty tissue (a) and the distance from the front wall of the trachea to the outer edge of the skin sheath (b) expressed in millimeters, according to the formula: PI=a/b*100. The normal PI value is 60-80.
The aim of the work was to correlate echosonographic findings of patients with goiter, i.e. findings of patients in whom echosonographically confirmed thyroid gland of smaller dimensions (hypothyroidism/thyroiditis) and their paratracheal indices.
Patients and methods: Patients included in the research had to have had an EHO examination of the thyroid gland and a radiograph of the cervical spine (profile). The interval between these diagnostic procedures did not exceed one month.
Results and discussion: the research included 7 patients with echosonographically confirmed reduced diameters of the thyroid gland and 9 patients with goiter. In both these groups of patients, there were patients of both sexes, aged from 46 to 82 years. The PI index in patients with echosonographically confirmed reduced diameters of the thyroid gland was in the range of 30-50 (echosonographic dimensions of the thyroid glands were no larger than 40x12mm), and in patients with goiter in the range of 80-95 (echosonographic dimensions of the thyroid glands were larger of 60x20mm).
Conclusion: Although it is not part of the routine diagnostic procedures for the detection of thyroid gland disease, radiography of the cervical spine (profile image) with the use of the paratracheal index can tell us a lot about the pathology of the thyroid gland, so it must not be neglected, and during the analysis of radiographs, it should would be mathematically verified, so that, in the event of a deviation from the normal value range, the patient would be referred to further diagnostic procedures (laboratory, echosonographic examination).
Key words: paratracheal index, thyroid gland, goiter, smaller dimensions, radiography.

P7

The role of parathyroid scintigraphy in the management of normocalcemic primary hyperparathyroidism

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Normocalcemic primary hyperparathyroidism can be diagnosed in the setting of elevated PTH concentrations with consistently normal albumin-adjusted serum and ionized calcium levels. There are no data regarding the optimal treatment strategy for normocalcemic patients. Early diagnosis and treatment of primary hyperparathyreoidisam is important to prevent its complications. In this retrospective study, we aimed to evaluate the role of 99mTc-MIBI parathyroid scintigraphy on lesion detection in patients with normocalcemic primary hyperparathyroidism. Material and Methods: Data were collected retrospectively including patients with diagnosis of primary hyperparathyroidism. We included 111 patients who underwent 99mTc-sestamibi dual phase parathyroid scintigraphy in our department in the period 20212022. All patients were categorized as normocalcemic and hypercalcemic according to their serum and ionized calcium levels before the parathyroid scintigraphy procedure. Results: A positive MIBI scintigraphy finding in the normocalcemic group has 27 patients, out of 59, which is 46%, while in the hypercalcemic group 56 out of 62 patients have a positive MIBI scintigraphy finding (90%). Conclusion¬: Our study indicate that almost half of patients with normocalcemic primary hyperparathyroidism have a positive result of parathyroid scintigraphy, which may indicate the importance of MIBI scintigraphy in the early detection of lesions in patients with normocalcemic primary hyperparathyroidism.

P8 Comparison of Glomerular Filtration Rate Measurement by Gates Method, Plasma Sampling and Creatinine Equations in kidney donors

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Abstract body:

Introduction: Glomerular Filtration Rate (GFR) is defined as the volume of plasma that is filtered by the glomeruli per unit of time. Aim of study was to compare GFR measured by the radionuclide plasma sampling (PS) technique, Gates camera based method and creatinine based equations (MDRD, CKD-EPI).

Method: Patient preparation consisted of the placement of intravenous cannula and adequate hydration. Before the beginning of renography study, preinjection syringe containing 185MBq of Tc-99m diethylenetriaminepentaacetic acid (DTPA) was counted using dual head gamma camera. Then a bolus dose of the tracer was intravenously administrated and the time recorded. Radiorenography was performed in 33 potential donors. The post-injection syringe was counted at the end of the study. The blood samples were taken 180 minutes after administration of radioactive tracer. Two samples of 4 ml were taken from the arm contralateral to the administration site. Vials containing blood samples were centrifuged without postponement for 10 minutes at 1000 RPM. Two plasma samples, 1ml each, were taken from vials. A standard solution was prepared with 185MBq of Tc-99m in 1000ml of demineralized water. Standard sample containing 1ml of solution was prepared and counted after aprox. 24 hours using gamma counter. At that point, plasma samples were also counted. The decay of radioactivity was corrected. GFR was calculated according to guidelines.

Results: Mean values of GFR estimated using PS and Gates method were 81.65 ± 15.58 ml/min/1.73m2 and 68.98 ± 14.62 ml/min/1.73m2, respectively. There was significant difference between these values, as well as between GFR calculated using PS and GFR estimated by MDRD and CKD-EPI.

Conclusion: Gates method tended to underestimated GFR compared to PS method. Thus, calculation of GFR using in vitro radionuclide method plays a vital role in renal patients.

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P9 INCIDENCE OF HYPERTENSION IN PATIENTS WITH ADRENAL INCIDENTALOMAS

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Introduction: Adrenal incidentalomas (AI) are accidentally discovered masses of the adrenal gland, during imaging investigation unrelated to suspected adrenal disease. Detailed study of the literature indicates more frequent incidence of cardiovascular disease, arterial hypertension, among patients with functional AI.

The Aim: The purpose of this study was to determine the relationship between hormonal activity (primarily refers to subclinical hypercorticism) and hypertension in patients with AI.

Material and Methods: This retrospective, cross-sectional study, which included 45 patients with AI, was conducted at the Department for Nuclear Medicine, University Clinical Center in Kragujevac. All patients with documented clinical diagnosis of functional AI were further divided in two subgroups based on existance of arterial hypertension (blood pressure was analysed). The control group was non-functional adrenal incidentalomas. Hormonal status was determined in all cases by radioimmunoassay (RIA) or immunoradiometric assay (IRMA), which included serum daily cortisol level, 1mg overnight dexamethasone supresion test (DST screening), ACTH level and cortisol/ACTH index .

Results: Functional AI group showed a statistically significant lack of suppression during the DST screening test (p=0.01, 455,57 ± 234.19 vs 60.33 ± 38.05 nmol/), with a higher cortisol/ACTH index (p=0.028), compared to controls. The subgroup with concomitant hypertension had significantly higher cortisol level after DEX screening test (p=0.045 478.90±292.92 vs 209.75±111.22 nmol/l) compared with subgroup without hypertension. Cortisol levels in 8h correlated positively with systolic blood pressure (p=0.001 Pearson=0.836) while 24h (midnight serum cortisol) levels positively correlated with diastolic blood pressure (p=0.012 Pearson r=0.988,) in the subjects with concomitant hypertension.

Discussion: Several studies indicated the connection between clinically inapparent AI and some manifestation of the metabolic syndrome (arterial hypertension, obesity, hyperglycemia). According to certain previous research in which elevated midnight serum cortisol level was associated with isolated systolic hypertension, our findings showed higher diastolic blood pressure

P10 Sympatico-adrenal scintigraphy in children's neuroblastoma-single centre experience

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Simpatico adrenal scintigraphy with mIBG is a mandatory diagnostic procedure in children with neuroblastoma. Radiolabelled benyzilguanidine was introduced in medicine in 1980., and has become a standard of patient evaluation. The procedure was shown at our institution 30 years ago and, after some pause, renewed in 2007. Since the present time, we have managed 185 of those patients, 91 girls and 94 boys, average age of 39.6 months. A total of 352 scintigraphies were performed:106 children had one scan, and one child had seven scans during the follow-up. The most productive years were 2012. and 2014.with 40 mIBG studies performed. SPECT is added as an obligatory acquisition modality. All scintigrams were evaluated by SIOPEN score, both soft tissue and bone one. MIBG study is conducted and reported according to the Guidelines on Nuclear Medicine Imaging in Neuroblastoma issued in 2018.

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P11 Added value of neuroendocrine tumours (NET) somatostatin analogue hybrid SPECT/CT imaging in addition to 99mTc-Tektrotyd scintigraphy only

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Purpose: The aim of the study was to define the added value and improvement of study with the introduction of SPECT/CT in somatostatin analog scintigraphy of neuroendocrine tumors (NET).

Subjects & Methods: Forty patients (18 males and 22 females) with histopathologicaly verified NET were examined on hybrid SPECT/CT gamma-camera GE NM/CT 870 DR. 34/40 were newly diagnosed and 6/40 were after therapy evaluation controls. 21/40 (52.5%) were NET gastrointestinal including pancreas, 8/40 (20%) lung originated and 11/40 (27.5%) other locations NET. Whole body image acquisition was done 2 and 4 hours after the injection of 740MBq 99mTc-Tektrotyd, followed by a SPECT/CT of selected body regions. Study results were extracted from the final reports written by six board certified nuclear medicine specialists by observing four regions of interest: chest, liver, abdomen and bones. Added value of the SPECT/CT examination was ascertained if the final report indicated presence/absence of radionuclide focuses morphological mapping that facilitated the decision-making process in addition to scintigraphy only.

Results: Out of forty pts, 24 pts (60%) had positive findings, with detectable expression of tissue somatostatin receptors (SR) of different grading, 14 (35%) had negative findings, and 2 (5%) findings were classified as inconclusive. Overall SPECT/CT results added the value in 23/40 (57.5%) pts, with SR expression in lung and mediastinum region (5/23 pts, 21.7%), liver (2/23 pts, 8.7%), abdomen (11/23 pts, 47.8%) and bones (5/23 pts, 21.7%). In 17 (42.5%) pts added value of SPECT/CT was not ascertained.

Conclusion: Our results indicate the added value of including SPECT/CT imaging in the somatostatin analogue scintigraphy of NET tumours in majority of the patients.

P12 Machine Learning Classifiers for Radioactive Iodine Therapy Decision-Making in Thyroid Cancer

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Introduction: Radioactive iodine therapy (RAIT) is crucial for treating patients with differentiated thyroid carcinoma after the initial surgery. However, determining if RAIT is necessary and the appropriate iodine dose can be challenging, especially for inexperienced physicians. This study developed and compared machine learning classifiers to aid RAIT decision-making for thyroid cancer patients.

Methods: The study included a cohort of 210 patients who had undergone total thyroidectomy. Two machine learning classifiers were trained to suggest if RAIT was necessary and to propose an appropriate I-131 dose. The classifiers were evaluated using accuracy and the kappa coefficient to measure agreement with the gold standard decision made by an experienced physician. To test the classifiers' acceptance by potential users, groups of 30 patients were presented to four young nuclear medicine physicians, who were asked to propose the best therapy treatment for each patient before and after using the classifier as a decision support system.

Results: The Artificial Neural Network (ANN) algorithm demonstrated higher accuracy (95.71%) and kappa coefficient (0.96, range: 0.91-1.00) than the Naïve Bayes (NB) classifier. The kappa coefficient increased from 0.70 to 0.93 when four young nuclear medicine physicians used the ANN classifier as a decision support tool, indicating its usefulness for educational purposes.

Conclusion: The machine learning classifiers developed in this study can aid inexperienced medical professionals in decision-making on RAIT for thyroid cancer patients. The ANN algorithm outperformed the NB classifier and can be a reliable tool for determining if RAIT is necessary and proposing an appropriate I-131 dose for thyroid cancer patients after the initial surgery.

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P13 Recurrent Disease in DTC pT1 Patients: Prognostic Factors and Outcome

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Background: Differentiated thyroid carcinoma (DTC) patients with initial pT1 (Tumor ≤ 2 cm in greatest dimension limited to the thyroid) are low-risk patients with a good prognosis. However, during the follow-up some patients may relapse. The aim of the study was to analyze recurrent disease, its prognostic factors and the outcome of DTC patients initially staged pT1.

Patients and methods: In a period of 2007 to 2022 765 DTC patients were referred to our institution for further evaluation and treatment. Out of 765, 488 (63,8%) patients were initially staged as pT1. The probability of survival and the influence of prognostic factors were analyzed with Kaplan-Meier method. The significance of differences was analyzed by use of the log-rank test with statistical software (SPSS version 20; SPSS Inc.). A p value of less than 0,05 was considered significant.

Results: There were 421 (86,27%) females and 67 (13,73%) males; 290 (59,43%) patients ≥55 years old, 198 (40,57%) patients < 55 years old; histologically there were: 469 (96,11%) patients with papillary cancer and 13 (2,66%) with follicular carcinoma and 6 (1,23%) patients with Hurthle cell carcinoma. Eleven (2,25%) patients developed recurrent disease. Median follow-up = 52 months, Median recurrence = 5 years (0-14,8 years). The probabilities of recurrence were 3% at 5 and 10 years, and 5% at 15 years. Factors that were predictive of recurrence was gender (p=0,002) only, while age and histological type of the tumor had no influence on relapse (p=303, and p=0,757, respectively). According to the last check up, out of 488 patients who underwent RAI, 474 (97,13%) patients achieved complete remission, 6 (1,23%) patients achieved partial remission while 4 (1,64%) patients had stable disease. There were no disease related deaths.

Conclusion: Despite the fact that DTC patients staged pT1 are low risk patients, some of them relapse during the course of disease. A life-long follow-up of DTC patients is necessary with aim to detect and treat recurrent disease on time.

Key words: Differentiated thyroid cancer, pT1, recurrent disease

PT1 Perfuziona scintigrafija miokarda

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Perfuziona scintigrafija miokarda je dijagnostička metoda u kojoj se prikazuje prokrvljenost miokarda, pri čemu se koriste radiofarmaci koji se nakupljaju u miokardu (Tc-99m MIBI).

Nakon intravenske aplikacije, radiofarmak se raspoređuje u miokardu proporcionalno koronarnom protoku krvi.

Projekcioni podaci dobijaju se rotiranjem gama kamere oko sagitalne osovine bolesnika za 180 stepeni. Rekonstrukcijom se dobijaju poprečni i uzdužni preseci horizontalni i vertikalni. Tehnika SPEKT-a pomoću obeleženog radiofarmaka Tc-99M omogućava precizniju procenu koronarne ishemije ili akutnog i hroničnog infarkta, s obzirom na odsustvo preklapanja srčanih struktura.

Indikacije za scintigrafiju miokarda: 1.Akutni infarkt miokarda 2. Nestabilna angina pectoris 3. Hronična stabilana koronarna bolest

Ciljevi i metode: ispitivanja je evaluacija perfuzije miokarda, odnosno detekcija ishemičnih ili ožiljnih delova miokarda. Radiofarmak koji se najčešće koristi u ispitivanju je Tc-99m MIBI, čije je fizičko vreme poluraspada 6 sati.Priprema bolesnika pre ispitivanja: Ne jesti ništa 4 sata pre ispitivanja . Dijabetičari mogu uzeti lagan doručak. Obavezno popiti jutarnju terapiju .Ovo važi za pacijente koji piju terapiju. 24 sata pre ispitivanja ne uzimati cigarete, kafu, čaj, koka-kolu i slične proizvode. Upozoriti lekara i tehničara na mogućnost trudnoće ili dojenje! Dan ranije izbegavati teška fizička opterećenja. Nakit i ostale metalne stvari skloniti sa strane pre snimanja. Na ispitivanje obavezno poneti uput, medicinsku dokumentaciju , prethodne nalaze scintigrafije miokarda. Pre ispitivanja potrebno je uraditi test opterećenje koji ne sme biti stariji od šest meseci. Postupak ispitivanja: Ispitivanje se izvodi 2 dana u ambulantnim uslovima. Prvi dan: pacijentu se radi ergometrija, pacijent vozi bicikl u poluležećem položaju, gde mu se na svakih 2-3 minuta povećava opterećenje. Lekar meri krvni pritisak i prati srčani rad. Kada pacijent dostigne maksimalno opterećenje, inicira se radiofarmak u prethodno postavljenu intravensku kanilu. Posle ubrizgavanja , pacijent mora da vozi bicikl jos 1 minut. Nakon ubrizgavanja radiofarmaka 45-60 minuta, pacijent se snima u ležećem polužaju pri čemu se glava gama kamere okreće oko pacijenta za 180 stepeni. Snimanje traje 20 minuta. Posle snimanja pacijent ide kući, pri čemu ga obavestiti da može normalno obavljati svakodnevne aktivnosti i obavezno naglasiti da 24 sata ne sme biti u bliskom kontaktu sa bebama i trudnicama. Drugi dan: pacijentu se ubrizga radiofarmak u miru. Nije potrebna intravenska kanila. Snimanje se vrši 45-60 minuta nakon iniciranja. Postupak je isti kao kod prethodnog dana. Snimanje traje 20 minuta. Posle snimanja pacijent ide kući uz napomenu da ne bude 24 sata u bliskom kontaktu sa bebama i trudnicama. Rezultati: Pomoću perfuzione scintigrafije miokarda moze se predvideti ishod koronarne bolesti. Bolesnici sa urednom perfuzionom scintigrafijom imaju manje od 1% godišnji rizik koronarnog incidenta. Rizik od infarkta miokarda kod bolesnika sa umereno poremećenom perfuzijom miokarda iznosi oko 2,7%, uz stopu smrtnosti od 0,8%. Ovi se bolesnici smatraju pogodnim za medikametoznu terapiju uz prevenciju i lečenje faktora rizika koronarne bolesti. Veličnina fiksnog defekta SRS-summed rest score je u koleraciji sa srčanim popuštanjem, a stepen reverzibilnosti SDS-sumed difference score upućuje na pojačani rizik od infarkta miokarda. U grupu visoko rizičnih bolesnika za infarkt miokarda i naglu smrt spadaju bolesnici koji imaju višestruke ispade perfuzije, opsežniji i teži ispadi perfuzije, pojačano nakupljanje aktivnosti u plućima, te tranzitorna ishemična dilatacija i disfunkcija leve komore na perfuzionom GATED-SPECTU predstavljaju vrlo visok rizik za nepovoljan ishod koronarne bolesti.

Bolesnici podvrgnuti revaskularizaciji sa 3 ili više reverzibilnih defekata imaju bolju prognozu od onih na medikametoznoj terapiji. Postojanje reverzibilnih defekata predstavlja povišen rizik kod bolesnika koji su podvrgnuti selektivnom hiruškom zahvatu izvan koronarnog sistema. Perfuziona scintigrafija miokarda ima veliki značaj u detekciji ishemijske bolesti srca kao i značaj iste u odluci o daljem lečenju.

Perfuziona scintigrafija miokarda se koristi kao metoda za utvrđivanje vijabilonosti miokrda leve komore pri čemu ima značajnu ulogu u daljem tretmanu ovih pacijenata uzimajući u obzir rizike eventualne perkutane koronarne angioplastike. Poznati svetski kardiolog Eugen Brounwald 1997 u svojoj V ediciji kardiologije napisao za SPECT miokarda da je svojim nalazom golden gate keeper (zlatni ključ) za invazivnu dijagnostiku. Čak i kod bolesnika sa koronarografski potvrđenim suženim koronarnim arterijama, , SPECT miokarda ima nesumnjivo važnu ulogu, zato što SPECT miokarda daje krucijalnu informaciju, da li nađena stenoza ima funkcionalni značaj odnosno da li postoji problem u ishrani dela srčanog mišića koje hrani takva arterija. Danas po preporukama najznačajnijih svetskih asocijacija iz kardiologije (AHA, ACC i ASNC) sada u SAD ispred svake koronarne jedinice gde je obezbeđen prijem bolesnika sa akutnim infarktom miokarda, nalaze se gama

kamere za izvođenje nuklearne kardiodijagnostike, čiji normalan nalaz perfuzije srčanog mišića omogućuje da se bolesnik sa grudnom boli koja glumi akutni infarkt miokarda , ne prima u koronarnu jedinicu. Danas je toliki klinički značaj nuklearne kardiologije u svetu, da u osnovi kreira način i upotrebu kliničke terapije, kao i da prati terapijske efekte i njene moguće komplikacije.

Co-funded by the
European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or European Education and Culture Executive Agency (EACEA). Neither the European Union nor the granting authority can be held responsible for them."
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