ANNUAL SCIENTIFIC MEETING 2011
THE INDONESIAN SOCIETY NUCLEAR MEDICINE
THE INDONESIAN SOCIETY NUCLEAR MEDICINE AND BIOLOGY
RADIOISOTOPES, RADIO PHARMACEUTICAL AND CYCLOTRON-BATAN

Nuclear Medicine ACCELERATION In Health Service

Symposium and Workshop
November, 3-5 2011

IDI ACCREDITATION

Teaching Hospital Faculty of Medicine Universitas Padjadjaran
Jl. Eyckman No. 38 bandung

INTERNATIONAL AND NATIONAL FACULTY

INTERNATIONAL FACULTY

Prof. Ajit Kumar Padhy
President, WARMTH
Singapore General Hospital

Ekaterina (Kate) Dadachova, Ph.D
Professor of Nuclear Medicine and Microbiology and Immunology Sylvia and Robert S. Olnick Faculty Scholar in Cancer Research Albert Einstein College of Medicine of Yeshiva University

Maung-Maung Saw, Ph.D
National University of Singapore
Clinical Imaging Research Centre

S. Somanesan, Ph.D
Senior Principal Radiation Physicist
Department of Nuclear Medicine & PET Operations & QA Manager
Cyclotron Facility, PTPL Hospital Radiation Safety Officer

Sun-Ju Choi, Ph.D
Director Radioisotope Research Reactor Utilization and Development
Korea Atomic Energy Research Institute

WORKSHOP TECHNOLOGIST:

Role of Technology in Nuclear Medicine
Quality Control Gamma Camera
Radiation protection
Introduction to PET/CT : PET Physics, instrumentation, and Imaging

WORKSHOP RADIOPHARMACIST

Operation and handling of Tc-99m Generator
Good Radio pharmaceutical Manufacturing Practice
Preparation and Quality Assurance of Tc-99m MIBI
Principles and Regulations Against Radiation Safety
Radio pharmaceutical Chemistry Essential Part of Nuclear Medicine Education and Program

SYMPOSIUM NUCLEAR MEDICINE FOR NON NUCLEAR MEDICINE PHYSICIAN

FREE PAPER AND POSTER

NATIONAL FACULTY

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Kardinah, dr., SpRad
Head of Radio-Diagnostic
Dharmais National Cancer Center, Jakarta

Sri Hartini, dr., SpPK
Clinical Pathology Department
Dharmais National Cancer Center, Jakarta

HOT TOPICS :

Radio-immunotherapy
Current trends and Future Perspectives in Nuclear Medicine and PET Imaging

Supported by :

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ANNUAL SCIENTIFIC MEETING 2011
THE INDONESIAN SOCIETY NUCLEAR MEDICINE (ISNM)
THE INDONESIAN SOCIETY NUCLEAR MEDICINE AND BIOLOGY (ISNMB)
RADIOISOTOPES, RADIOPHARMACEUTICALS AND CYCLOTRON - BATAN

NOVEMBER, 3-5 2011
TEACHING HOSPITAL MEDICINE OF FACULTY PADJADJARAN UNIVERSITY
Jl. Eyckman No. 38 Bandung

DAY 1 : THURSDAY; NOVEMBER 3, 2011		
07.00-08.30	REGISTRATION	2nd FLOOR
08.30-15.00	WORKSHOP TECHNOLOGIST 1. Role of Technologist in Nuclear Medicine A. Hussein S. Kartamihardja, dr., SpKN., MHKes 2. Quality Control Gamma Camera Rini Shintawaty, S.Si. 3. Radiation Protection Fath Priyadi, S.ST 4. Introduction to PET/CT : PET Physics, instrumentation, and Imaging Dr. Somanesan	6TH FLOOR, ROOM 1
08.30-15.00	WORKSHOP RADIOPHARMACIST 1. Handling and Operating of Tc-99m Generator N. Elly Rosilawaty, Dra., Apt., M.HKes 2. Good Manufacture of Radiopharmaceuticals Widyastuti, Dra., Apt. 3. Quality Control and Preparation of Tc-99m MIBI Adang Hardi Gunawan, Drs., Apt., 4. Radiation Safety Principal and Regulation of Workers Uteng Tarmulah 5. Radiopharmaceutical Chemistry Essential Part of Nuclear Medicine Education and Programme Dr. Maung-Maung Saw	6TH FLOOR, ROOM 2
15.30-17.30	ISNM AND ISNMB MEETING	2nd FLOOR, R00M 1
19.00-22.00	FACULTY DINNER	RAJA RASA RESTORAN

DAY 2 : FRIDAY, 4 NOVEMBER 2011		
07.30-08.30	REGISTRATION	2nd FLOOR
08.30-09.30	OPENING : Chairman of Organizing Committee President of ISNM & ISNMB Dean of Faculty of Medicine Universitas Padjadjaran Head of BATAN Keynote Speaker: MINISTRY OF RESEARCH AND TECHNOLOGY	2nd FLOOR, Auditorium
09.30-09.45	COFFE BREAKS/POSTER SESSION/TRADE EXHIBITION	2nd FLOOR
09.45-10.45	PLENNARY LECTURE	2nd FLOOR, Auditorium
09.45-10.15	Targeted Therapy Prof. DR. Johan S. Masjhur, dr., SpPD-KEMD., SpKN.	

10.15-10.45	Radioimmunotheraphy for Infection Ekaterina (Kate) Dadachova, Ph.D	
10.45 -11.45	FGD	2nd FLOOR, ROOM 1
10.45 -13.00	PRAY/LUNCH/POSTER SESSION/TRADE EXHIBITION Lunch Symposium : SIEMENS/PHILIPS/GE	2nd FLOOR, Auditorium
13.00-14.10	SCIENTIFIC SESSION 1: INFECTION Session Chairpersons: 1. Eko Purnomo, dr., SpKN 2. Aisyah Ellyanti, dr., SpKN	2nd FLOOR, Auditorium
13.00-13.20	Diagnostic Problem in Inflammation and Infection Primal Sudjana, dr., SpPD-KPTI.	
13.20-13.40	Diagnostic Inflammation and Infection with Nuclear Medicine A.Hussein S. Kartamihardja, dr. SpKN., M.HKes.	
14.00-14.10	Disscusion	
14.10-14.25	COFFE BREAK/POSTER SESSION/TRADE EXHIBITION	2nd FLOOR
14.25-15.25	SCIENTIFIC SESSION 2: PET Session Chairpersons: 1. Soebowo Soemewo, dr. SpKN. 2. Resnaldi, dr., SpKN.	2nd FLOOR, Auditorium
14.25-14.45	Current trends and Future Perspectives in Nuclear Medicine and PET Imaging Somanesan, Ph.D	
14.45-15.05	Establishment of Nuclear Medicine, MRCCC-Siloam Hospital Semanggi Experience Hendra Budiawan, dr., SpKN.	
15.05-15.15	Discussion	
15.15-17.00	FREE PAPER SESSION	2nd FLOOR, Auditorium
19.00-22.00	WELCOME PARTY Dinner Simposium : TRANSMEDIC	

DAY 3 : SATURDAY, 5 NOVEMBER 2011		
08.30-09.20	PLENNARY LECTURE	2nd FLOOR, Auditorium
08.30-09.00	Development and Benefit of Radioisotope, Radiopharmaceutical, and Cyclotron Technology Activity Plan and Legality of Radioisotope and Radiopharmaceutical Production (Kimia Farma) DR. Muthalib	
09.00-09.30	A Perspective of PRRT Prof. Ajit Kumar Padhy	
09.30-09.45	COFFE BREAK/POSTER SESSION/TRADE EXHIBITION	2nd FLOOR
09.45-10.35	SCIENTIFIC SESSION 3: RADIOPHARMACEUTICAL Session Chairpersons: 1. Prof. Aang Hanafiah 2. Fadil dr., SpKN.	2TH FLOOR, Auditorium
09.45-10.05	Personalized Medicine and The Role of Nuclear Medicine Dr. Maung Maung Saw	

10.05-10.25	Development and Application of Radioisotope and Radiopharmaceutical in South Korea (in confirmation) Choi Sun-ju, Ph.D	
10.25-10.35	Discussion	
10.35-11.25	**SCIENTIFIC SESSION 4: ONCOLOGI** Session Chairpersons: 1. DR. Muthalib 2. DJoko Nariman, dr., SpKN.	2nd FLOOR, Auditorium
10.35-10.55	FLT (development of PRR-BATAN) for Cancer Diagnosis Kardinah, dr., SpRad	
10.55-11.15	Role of Tumor Marker in Cancer Management using IRMA Kit of Ca-125 (development of PRR-BATAN) Dr. Sri Hartini, SpPK	
11.15-11.25	Discussion	
11.25-12.30	**LUNCH/POSTER SESSION/TRADE EXHIBITION** Lunch Symposium : Cyclotron Application in Health Service Uichi Yamashita (Sumitomo)	2nd FLOOR, Auditorium
12.30-13.20	**SCIENTIFIC SESSION 5: ONCOLOGY** Session Chairpersons: 1. Chafied Varuna, dr., SpKN 2. Hendra Budiawan, dr., SpKN.	2nd FLOOR, Auditorium
12.30-12.50	^{177}Lu DOTA –Mab (development of PRR-BATAN) Basuki Hidayat, dr., SpKN.	
12.50-13.10	PET/CT evaluation of Gastro-Intestinal Carcinoma Prof. Ajit Kumar Padhy	
13.10-13.20	Discussion	
13.20-14.10	**SCIENTIFIC SESSION 6: ONCOLOGY** Session Chairpersons: 1. Nany Kartini Oekar, Dra, Msi. 2. Tenri Abeng, dr., SpRad., SpKN.	2nd FLOOR, Auditorium
13.20-13.40	Radioimmunotherapy for Infection (in confirmation) Ekaterina (Kate) Dadachova, Ph.D	
13.40-14.00	Development and Application of Radioisotope and Radiopharmaceutical in South Korea (in confirmation) Choi Sun-ju, Ph.D	
14.00-14.10	Discussion	
14.10-14.25	**COFFE BREAKS/POSTER SESSION/TRADE EXHIBITION**	2nd FLOOR
14.25-17.00	FREE PAPER	
17.00-18.00	CLOSING	

SYMPOSIUM NUCLEAR MEDICINE FOR NON NUCLEAR MEDICINE PHYCYSIAN

SATURDAY, 5 NOVEMBER 2011

07.30-08.30	REGISTRATION	2nd FLOOR, ROOM 3
08.30-08.50	Thyroid Scintigraphy	
08.50-09.10	Myocardial Perfusion Scan	

09.10-09.30	GFR and Renography
09.30-09.40	Discussion
09.40-09.50	COFFE BREAK/POSTER SESSION/TRADE EXHIBITION
09.50-10.10	Bone Scintigraphy
10.10-10.30	Iodium 131 Therapy in Hipertiroidism and Remnant ablation for Well Differentiated Thyroid Carcinoma
10.30-10.50	The Role PET in Diagnostic and Follow up
10.50-11.00	Discussion

Defect of Iodide Metabolism and Its Implication for Thyroid Cancer Therapy

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Faculty of Medicine Andalas University/Dr.M.Djamil Hospital Padang Indonesia

The prevalence of thyroid cancer is relatively low (0,74% in men and 2.3% in women) compare with other cancers. The prognosis is favorable been obtained through effectiveness of total/near-total thyroid surgery followed by radioiodine therapy (^{131}I) and thyroid stimulating hormone (TSH) suppression therapy with thyroxin. Ten-year survival rates for papillary and follicular thyroid carcinoma are 95 and 90% respectively. In the other hand, the recurrence rate of thyroid cancer is high and only one third of patients with distance metastases respond to ^{131}I with complete remission. Some of thyroid cancer and their metastasis exhibit reduced ^{131}I therapy with respect to normal thyroid tissue.

Natrium/sodium iodine symporter (NIS) is an integral plasma membrane glycoprotein, in which NIS mediates the active transport of iodine (I^-) at the basolateral plasma membrane of thyroid follicular cell against the iodine electrochemical gradient, its stimulated by TSH. Iodine is shifted from cytoplasma across the apical plasma membrane toward the colloid, a process is mediated by pendrin and apical transporter. At the cell-colloid interface, organification of I^- is catalyzed by thyroxin peroxidase (TPO). Iodine is oxidized and incorporated into some tyrosyl residues within the thyroglobulin (Tg) molecule, the complex is stored extracelulary in the colloid. Although papillary and follicular thyroid carcinomas retain the majority of biological properties of normal thyroid cell, a variety of biochemical defects has been demonstrated. Furthermore biological activity of peroxidase, although normal in benign cold adenomas, was decrease or absent in thyroid carcinomas, as a result a low iodine organification. As consequence, in thyroid cancer tissues a low intra-thyroidal iodine concentration or short residence time, a low degree of iodinated of thyroglobulin and low rate of thyroid hormone sintesis

Tissue uptake of iodine ia about 1% of the administrated activity in normal thyroid tissues, whereas it ranges from 0.1% to 0.001% in neoplastic tissues and average residence time to 3-5 days sometimes shorter, whereas it range from 6-8 days in normal thyroid tissues. This short half-life may be due to abnormalities in the organification process.

The outcome of ^{131}I therapy depends on the biological half-life of the isotope in the taget cells and the dose of radioactivy attained in the tumor. Uptake and organification are the two major steps of iodine metabolism and they defect obtain low radiation dose to thyroid cancer cells, these are mainly due to decrease expression of functional genes encoding NIS and abnormalities in the organification process, at least in part related to a defect in the peroxidase system

Keywords : iodine metabolism, uptake, organification,natrium iodide symporter, thyroxine peroxidase