Under the High Patronage of the Minister of Health
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COMENA

Algerian Association Of Nuclear Medicine

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3rd Edition

AICONM26

Algiers International Conference On Nuclear Medicine

November 20 - 21, 2026 - CRNA / COMENA, Algiers, Algeria

PROGRAM

https://aamn.dz/aiconm26

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Edition 3rd ICON'26

ALGIERS INTERNATIONAL CONFERENCE ON NUCLEAR MEDICINE

NOVEMBER 20 - 21, 2026 - CRNA / COMENA, ALGIERS, ALGERIA

SUMMARY

President's Welcome P 03
Address Of The Atomic Energy Commissioner P 04
Organizing Committee P 05
Scientific Committee P 05
Program First Day P 06
Program Second Day P 07
Speakers P 08
Abstract Book P 15
- Part I — Oral Communications (6) P 16
- Part Ii — Nuclear Oncology & Theranostics (8) P 19
- Part Ii — Nuclear Imaging (Spect, Pet) (18) P 22
- Part Ii — Radiopharmacy (1) P 28
- Part Ii — Physics & Dosimetry (8) P 29
- Part Ii — Artificial Intelligence (1) P 31

PRESIDENT'S WELCOME



President of The Algerian Association of Nuclear Medicine (AANM)
Dr. Ymad Eddine El Moustapha **GHEDBANE**

On behalf of the Algerian Association of Nuclear Medicine (AANM), it is my great pleasure to welcome you to the 3rd Algiers International Conference on Nuclear Medicine – AICONM26.

Following the success of its first two editions, AICONM has established itself as an important scientific meeting, bringing together nuclear medicine professionals, researchers, physicians, medical physicists, technologists and young professionals from Algeria and around the world.

AICONM26 takes place in a historic setting hosted of the COMENA/CRNA premises , a landmark of Algeria's scientific legacy and nuclear research. Hosting this conference at such a distinguished national institution is a meaningful opportunity to highlight Algeria's longstanding commitment to scientific research and innovation, while strengthening connections between our national institutions and the international nuclear medicine community.

Under the theme of molecular imaging, theranostics and artificial intelligence, this third edition offers a valuable opportunity to exchange knowledge, share experience and explore the rapidly evolving landscape of nuclear medicine. These fields are opening new perspectives for precision medicine, personalised treatment strategies and improved patient care.

I would like to express my deepest gratitude to all our distinguished speakers who have kindly accepted our invitation to join us in Algiers and share their knowledge, expertise, research and insights into the latest advances in nuclear medicine. Your participation is central to the scientific richness of AICONM26, and we are honoured to welcome you to this special edition.

My sincere appreciation also goes to Prof. Egesta Lopci, who has agreed to chair the Scientific Committee of AICONM26. It is a pleasure to welcome you back to Algeria, and we are particularly grateful for your renewed commitment to the scientific development and international reach of our conference.

On this occasion, we also wish to honour the memory of Dr. Chahida DERRAGUI, a nuclear medicine physician at Tlemcen University Hospital, who passed away two years ago following a long illness, in the prime of her life. In tribute to her memory and her contribution to our specialty, the Best Oral Presentation Award at AICONM26 will be dedicated to her memory. Through this tribute, we express our deepest respect and extend our heartfelt thoughts to her family, friends, colleagues and all those who had the privilege of knowing and working with her.
I would also like to express our heartfelt appreciation to all our sponsors and partners, many of whom have supported the AANM and its scientific activities for many years. Your continued trust and commitment have played an essential role in the development of our conferences and in fostering scientific collaboration and knowledge sharing within the nuclear medicine community.

Beyond its scientific programme, AICONM26 is an opportunity to meet, connect, collaborate and build lasting bridges between colleagues, institutions and scientific communities across countries. We hope that the discussions initiated here will lead to new partnerships, innovative projects and lasting collaborations that benefit our specialty and, above all, our patients.

To all our distinguished speakers, delegates, partners, sponsors and friends joining us from Algeria and abroad, I extend my warmest welcome.

Welcome to Algiers. Welcome to Algeria. Welcome to AICONM26!

We look forward to sharing with you an inspiring, scientifically enriching and truly memorable conference.

See you in Algiers!

ADDRESS OF THE ATOMIC ENERGY COMMISSIONER



Atomic Energy Commissioner

Dr. Abdelhamid **MELLAH**

It is my honour and pleasure to welcome you to the nuclear research centre of Algiers for the third edition of the Algiers International Conference on Nuclear Medicine.
Let me first express our deep gratitude to the Ministers of Energy and Renewable Energies and of Health, who have placed this event under their high patronage. This gesture reflects the interest that the country's highest authorities take in nuclear medicine, a discipline where science, public health and atomic energy come together in the service of human beings.

My thanks also go to the Algerian association of nuclear medicine, whose commitment and perseverance have turned this meeting into a scientific tradition, and to the International Atomic Energy Agency (IAEA), our long-standing partner.

The mission of the Atomic Energy Commission is to harness the peaceful applications of the atom for national development. Among these applications, none embodies this vocation better than nuclear medicine: it makes it possible to see disease before it fully declares itself, to treat it with ever-greater precision, and to restore hope to thousands of patients.

It is in this spirit that COMENA through the nuclear research center of Algiers has hosted this conference. Our research teams, our infrastructure and our radiation protection expertise are committed to supporting the entire chain that leads from science to the patient's bedside. We hold this commitment all the more dearly as the national regulatory framework for radiation protection is currently being strengthened, so that every medical advance is matched by the highest standards of safety for patients, professionals and the environment.

The programme of these two days reflects the profound changes our discipline is undergoing.
Radiotheranostics, which combines diagnosis and treatment aimed at the same molecular target, is reshaping the management of many cancers, from prostate cancer to neuroendocrine tumours, from breast cancer to emerging targets such as FAPI. The world-renowned experts who honour us with their presence will present the latest advances.

But an innovation that benefits only a few remains incomplete. That is why equitable access to these therapies, particularly in low- and middle-income countries, will have a central place in our discussions. What science makes possible, health justice demands be available to as many people as possible: training specialists, equipping departments, securing the supply of radiopharmaceuticals and making these treatments economically sustainable. These are challenges we must meet together.

Our era is also that of artificial intelligence and digital transformation. Whether in image analysis, acquisition optimisation, theranostic digital twins or 3D printing, these technologies open considerable prospects. We welcome them with enthusiasm, but also with rigour: innovation must remain in the service of the patient, under the informed control of the practitioner.
This conference is also an affirmation of Algeria's African and Mediterranean vocation. The IAEA's "Rays of Hope" framework, which we will have the honour of seeing presented tomorrow, charts an ambitious course for the continent: ensuring that every cancer patient, wherever they live, can benefit from nuclear techniques for diagnosis and treatment.

Algeria intends to play its full part. Through the training of African professionals, several of our former trainees joining tomorrow's exchanges, through the sharing of experience and through stronger regional cooperation, COMENA reaffirms its commitment to supporting our sister nations on this path. Our IAEA partners know they can count on our steadfast support.

In closing, I would like to address the youngest among you. You are the future of Algerian and African nuclear medicine. The session devoted to you on Saturday is not a formality: it expresses our conviction that the scientific succession is a nation's first wealth.

I hope these two days will be rich in exchanges, fruitful in encounters and productive in concrete recommendations.

May the bonds formed here extend well beyond these walls,
for the benefit of our patients.

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Mohamed Hafedh ABDI
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Tahar ZIDI



CONGRESS CHAIR
Pr. Raja OTMANE
ALGERIA



CHAIR OF THE SCIENTIFIC COMMITTEE
Pr. Egesta LOPCI
ITALY

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1st Day

FRIDAY, NOVEMBER 20, 2026

WORKSHOP : FRIDAY MORNING (09H00 – 12H00) : PSMA PET/CT REPORTING & IA

CHAIRPERSONS : Pr. Assia AMIMOUR, Pr. Akram AL-IBRAHEEM

09h00 - 09h45 **The Standardised PSMA PET/CT Analysis and Reporting Consensus / Clinical Cases.** — Pr. Ken HERRMANN

09h45 - 10h30 **Radiotheranostics:** Good Practice Recommendations. — Pr. Emmanuel DESHAYES

10h30 - 11h00 *Break Time*

CHAIRPERSONS : Pr. Habib ZAIDI, Pr. Belaid AHROR

11h00 - 11h30 **Artificial Intelligence in Nuclear Medicine: What Every Practitioner Should Know.** — Pr. Belaid AHROR

11h30 - 12h00 **The Future of Artificial Intelligence in Medicine and Nuclear Medicine:** Opportunities, Challenges and Emerging Trends. — Pr. Merouane DEBBAH

12h00 - 14h30 *Lunch Break*

SCIENTIFIC CONGRESS: FRIDAY AFTERNOON (14H30 – 18H45)

SESSION 1 : Theranostics & Molecular Precision Oncology

CHAIRPERSONS : Pr. Richard BAUM, Pr. Mike SATHEKGE

Official Opening Ceremony — Officials & Scientific Committee

14h30 – 14h40 **The Present and the Future: The IAEA and the Expansion of Support for Medical Imaging** — Dr. Miriam MIKHAIL-LETTE

14h40 – 15h00 **Implementation in Radiotheranostics Beyond Radioiodine Therapy:** Current Challenges. — Pr. Akram AL-IBRAHEEM

15h00 – 15h20 **Expanding Access to Radiotheranostics in Low- and Middle-Income Countries.** — Pr. Mike SATHEKGE

15h20 – 15h40 **The Future of Radiomolecular Precision Oncology.** — Pr. Richard BAUM

15h40 – 15h55 **Panel Discussion.**

15h55 – 16h25 *Coffee Break & Exhibition Visit.*

SESSION 2 : Advanced Imaging & Therapy in Prostate Cancer

CHAIRPERSONS : Pr. Egesta LOPCI, Pr. Dalila AMOKRANE, Pr. Amel KHELIFA

16h25 – 16h45 **Updates on Metastatic Castration-Resistant Prostate Cancer (mCRPC)** — Pr. Dalila AMOKRANE

16h45 - 17h05 **PROSPECT-BX Trial:** Comparison of 68Ga PSMA PET/CT vs MRI. — Pr. Egesta LOPCI

17h05 – 17h25 **Advancements in 177Lu-PSMA Therapy for Prostate Cancer:** Future Directions. — Pr. Ken HERRMANN

17h25 – 17h45 **Targets Beyond PSMA for Prostate Cancer Radioligand Therapy.** — Pr. Mike SATHEKGE

17h45 – 18h00 **Panel Discussion.**

SPECIAL SESSION : Neuroendocrine Tumors (NET)

CHAIRPERSONS : Pr. Ken HERRMANN, Pr. Emmanuel DESHAYES

18h00 - 18h20 **SYMPOSIUM IPSEN**
Neuroendocrine Tumors:
From Molecular Imaging to targeted Radionuclide Therapy «Algerian Context» — Pr. Raja OTMANE

18h20 - 18h40 **Radiotheranostics in NET:** What's New? — Pr. Emmanuel DESHAYES

18h40 - 18h45 **Panel Discussion.**

2Nd Day

SATURDAY, NOVEMBER 21, 2026

SATURDAY MORNING (08H30 – 12H30)

SESSION 3 : Regional Experiences & Economic Realities

CHAIRPERSONS : Pr. Hongcheng SHI, Pr. Mike SATHEKGE

08h30 – 08h50	**Global Utilisation of Imaging and Nuclear Medicine in Oncology:** Economic Aspects.	Pr. Andrew SCOTT
08h50 - 09h10	**Economic aspects of Radiotheranostics:** The Chinese experience.	Pr. Hongcheng SHI
09h10 – 09h30	**Radiotheranostics: Egyptian Experience.**	Dr. Omar YEHIA
09h30 – 09h50	**Belgium, a World Leading Hub in Nuclear Medicine and Radiopharmaceutical.**	Pr. Hamid AIT ABDERRAHIM
09h50 – 10h00	**Panel Discussion.**	

SESSION 4 : Institutional & Regional Cooperation

CHAIRPERSONS : Pr. Assia AMIMOUR, Dr. Mohamed BOUROUBA

10h00 - 10h15	**Official Opening Addresses (National Authorities & IAEA)**	
10h15 - 10h35	**National Regulatory Framework for Radiation Protection:** Strengthening of Radiological Protection.	Dr. Fatah CHENNOUFI (ANSSN)
10h35 - 10h55	**Overview of the Activities of COMENA and its contribution to the Nuclear Medicine.**	Dr Djillali KHELFI (COMENA)
10h55 - 11h05	**Panel Discussion.**	
11h05 – 11h35	*Coffee Break & Exhibition Visit.*	

SESSION 5 : New Frontiers in Nuclear Medicine: Technology, Digitalization & Radiation Safety

CHAIRPERSONS : Dr. Fateh CHENNOUFI, Pr. Noureddine ZERHOUNI

11h35 – 11h55	**When technological developments in nuclear medicine free the patient from isolation:** the birth of the shared warm waiting room in PET !	Dr. Mohamed GUERNOU
11h55 - 12h15	**The shifting landscape of nuclear medicine in the era of computational nuclear oncology and theranostic digital twins.**	Pr. Habib ZAIDI
12h15 - 12h30	**Panel Discussion.**	
12h30 - 14h00	*Lunch Break*	

SATURDAY AFTERNOON (14H00 – 18H00)

SESSION 6 : Advanced Molecular Imaging: From Breast Cancer to Innovative Targets

CHAIRPERSONS : Pr. Hamida GUENDOUZ, Pr. Akram AL-IBRAHEEM

14h00 – 14h20	**Advances in the treatment of metastatic breast cancer in Algeria.**	Pr Esma KERBOUA, S.SAMI, S.DIFI
14h20 - 14h40	**Updates on Molecular Imaging in Breast Cancer.**	Pr. Akram AL-IBRAHEEM
14h40 – 15h00	**FAPI Theranostics:** The Next Revolution?	Pr. Richard BAUM
15h00 - 15h15	**Panel Discussion.**	

SESSION 7 : Image Optimization and Technology

CHAIRPERSONS : Pr. Habib ZAIDI, Dr. Mohamed GUERNOU

15h15 - 15h30	**SYMPOSIUM MEDISO-DTM** Balancing Image Quality and Acquisition Time in SPECT/CT.	Dr Sándor BARNA
15h30 -15h45	**Data Challenges for AI in Nuclear Medicine .**	Pr. Noureddine ZERHOUNI
15h45 - 16h00	**3D Printing & Nuclear Medicine.**	Pr. Fayçal KHARFI
16h00 – 16h30	*Coffee Break*	

SESSION 8 : Young sessions & Closing Ceremony

CHAIRPERSONS : Pr. Egesta LOPCI, Pr. Assia AMIMOUR, Pr. Raja OTMANE

16h30 - 17h30	**Oral Presentations .**	Young presenters
17h30 - 18h00	**Closing Ceremony .**	

* *Best Oral Presentation Award* - * *Best Poster Presentation Award*
* *Best Presentation Award «Dr. Derragui Memorial Trophy »*

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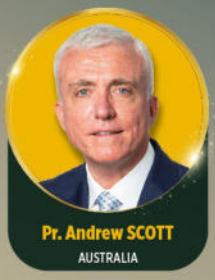
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GUEST SPEAKERS



Pr. Andrew SCOTT
AUSTRALIA



Pr. Richard BAUM
GERMANY



Pr. Mike SATHEKGE
SOUTH AFRICA



Pr. Egesta LOPCI
ITALY



Pr. Hamid AIT ABDERRAHIM
BELGIUM



Dr. Miriam MIKHAIL-LETTE
IAEA



Pr. Merouane DEBBAH
ALGERIA



Pr. Ken HERRMANN
GERMANY



Pr. Hongcheng SHI
CHINA



Pr. Akram AL-IBRAHEEM
JORDAN



Pr. Habib ZAIDI
SWITZERLAND



Pr. Emmanuel DESHAYES
FRANCE



Dr. Omar YEHIA
EGYPT



Dr. Mohamed GUERNOU
FRANCE



Dr. Sandor BARNA
HUNGARY



Pr. Noureddine ZERHOUNI
FRANCE

NATIONAL SPEAKERS



Pr. Esma KERBOUA
ALGERIA



Dr. Fatah CHENNOUFI
ALGERIA



Mr. Djillali KHELFI
ALGERIA



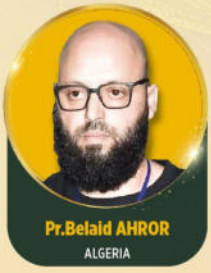
Pr. Dalila AMOKRANE
ALGERIA



Pr. Fayçal KHARFI
ALGERIA



Pr. Raja OTMANE
ALGERIA



Pr.Belaid AHROR
ALGERIA



Pr.Belaid AHROR
ALGERIA

Director of the Data Science & Applications Research Unit at Research Centre for Scientific and Technical Information CERIST.
My work focuses on Machine Learning, Deep Learning optimization, Computer Vision, and Medical Image Processing.
I'm passionate about advancing applied AI research and fostering collaborations that bridge science and real-world innovation.



Pr. Hamid AIT ABDERRAHIM
BELGIUM

Professor at the mechanical engineering department of the "Ecole Polytechnique de Louvain (EPL)" - "Université Catholique de Louvain" (UCLouvain)
Member of the Standing Advisory Group on Nuclear Energy (SAGNE) for the Director General of the IAEA Vice-Chair of the Nuclear Science CommiOee (NSC) of OECD/NEA Since 01 July 2022 Prof.

Dr. Hamid Aït Abderrahim is the General Manager of MYRRHA aisbl/ivzw. He was Deputy Director-General of SCK CEN, the Belgian nuclear research center.

He lectures reactor physics and nuclear engineering at the "Université Catholique de Louvain" (UCLouvain) at the mechanical engineering department of the "Ecole Polytechnique de Louvain (EPL)".
Since 1998, he is the director of the MYRRHA project, an accelerator driven system (ADS) coupling a sub-criYcal Pb-Bi cooled reactor and a high power proton linear accelerator through a spallaYon target.

He is or has been coordinator of various projects of the European Commission framework programme related to advanced nuclear systems and the advanced nuclear fuel cycle.



Pr. Akram Al-IBRAHEEM
JORDAN

MD, FRCP, FEBNM, DCBNC, FANMB, FRCPE, is the Chairman of the Nuclear Medicine and PET/CT Department at Jordan's King Hussein Cancer Center.

Al-Ibraheem currently serves as the President of the Asia Oceania Federation of Nuclear Medicine and Biology (AOFNMB), President of the Jordanian Society of Nuclear Medicine, and he was the Founding President of the Arab Society of Nuclear Medicine (ARSNM) from 2014 to 2019.
He serves on the executive board of the World Federation of Nuclear Medicine and Biology and teaches as an adjunct professor at Jordan University.

He has served as an expert for the International Atomic Energy Agency since 2012. He founded and directs the nuclear medicine residency program at King Hussein Cancer Center (KHCC).

He also worked as an international consultant for the WHO. Prof. Al-Ibraheem introduced cutting-edge nuclear medicine and theranostic services to the KHCC and Jordan, such as novel molecular PET/CT imaging, peptide receptor radionuclide therapy (PRRT), and PSMA-ligand radionuclide therapy.
Prof. Al-Ibraheem has written and published over 230 articles in peer-reviewed indexed journals. He ihas a leading editorial board role of several prestigious indexed journals in the field of medical imaging and theranostics, and has been invited to address numerous international and regional conferences.
Professor of Nuclear Medicine and internationally recognized expert in molecular imaging and theranostics. • Extensive clinical and academic experience in PET/CT, SPECT/CT, oncology imaging, and radionuclide therapy. • Key contributor to the development of nuclear medicine services in the Middle East. • Active participant in international educational initiatives, guideline development, and professional training programmes. • Author of numerous scientific publications and invited speaker at major international congresses. • Significant experience in implementation of theranostic programmes in countries with developing nuclear medicine infrastructure.



Pr. Dalila AMOKRANE
ALGERIA

Pr Dalila AMOKRANE

Cheffe d'unité d'oncologie urologique.
Service Oncologie, CPMC



Dr. Sandor BARNA
HUNGARY

Dr. Sándor Kristóf Barna is a nuclear medicine specialist and the Lead Clinician of the Gamma Camera and SPECT/CT Unit at ScanoMed Debrecen, Hungary.
He is also affiliated with the Division of Nuclear Medicine and Translational Imaging, Department of Medical Imaging, Faculty of Medicine, University of Debrecen.
His clinical and scientific work focuses on nuclear medicine, hybrid SPECT/CT imaging, quantitative imaging, and the optimization of image quality for clinical applications.

He has contributed to numerous scientific publications and research projects addressing advances in SPECT/CT and medical imaging. His expertise in clinical SPECT/CT and modern imaging technologies makes him particularly interested in the relationship between acquisition time, image quality, patient comfort, and diagnostic performance. At AICONM 2026, Dr. Barna will present:
"Balancing Image Quality and Acquisition Time in SPECT/CT"
The presentation will address practical considerations in SPECT/CT acquisition protocols and how modern technologies can help achieve high-quality diagnostic images while optimizing examination time.



Pr. Richard BAUM
GERMANY

Prof. Dr. Richard P. Baum is a globally recognized nuclear medicine physician and one of the foremost pioneers in theranostics — the integration of molecular imaging and therapy, also known as radiomolecular precision oncology.

As Nuclear Medicine Physician at CURANOSTICUM Wiesbaden-Frankfurt, President of the ICPO Academy for Theranostics, and Chairman of the ICPO Foundation Scientific Advisory Board, Prof. Baum has dedicated his career to advancing radioligand therapy (RLT) for cancers such as prostate carcinoma and neuroendocrine tumors (NETs).

With nearly four decades of clinical experience, he has shaped the field with groundbreaking first-in-human studies, including the world's first 177Lu PSMA therapy for prostate cancer in 2013, later advancing to TANDEM PRLT that combined 177Lu and 225Ac PSMA.

His guiding vision has always been clear: to combine cutting-edge radiomolecular techniques with patient-centered care, setting new international standards in nuclear medicine.



Mr. Fatah CHENNOUFI
ALGERIA

More than twenty years at the Atomic Energy Commission (COMENA) in charge of nuclear regulations, in the fields of nuclear safety, nuclear security, safeguards, radiation protection and regulatory authorizations for nuclear activities, including nuclear medicine.

Following the transfer of COMENA's regulatory activities to the new nuclear authority, National Nuclear Safety and Security Authority – ANSSN, appointed since October 2022 as Director of Nuclear Regulations at the new authority, and member of the Board of the ANSSN.

As part of the international control of radioactive source transfer, designated as Algeria Point of Contact for facilitating the Import and/or Export of Radioactive Sources in accordance with the Code of Conduct on the Safety and Security of Radioactive Sources and its Guidance of the International Atomic Energy Agency - IAEA.
Domaine d'activité : Réglementation Nucléaire



Pr. Merouane DEBBAH
ALGERIA

Chair of the National Artificial Intelligence Council - Algeria

Merouane DEBBAH is a public speaker, educator and technology entrepreneur.
He has founded multiple public and industrial research centers, start-ups and held executive positions in ICT companies. He is now Professor and founding Senior Director of the Digital Future Institute. He is a frequent keynote speaker at international events in the field of telecommunication and AI.
His research has been lying at the interface of fundamental mathematics, algorithms, statistics, information and communication sciences with a special focus on random matrix theory and learning algorithms.

In the Communication field, he has been at the heart of the development of small cells (4G), Massive MIMO (5G) and Large Intelligent Surfaces (6G) technologies. In the AI field, he is known for his work on Large Language Models, distributed AI systems for networks and semantic communications. He received multiple prestigious distinctions, prizes and best paper awards (more than 50 IEEE best paper awards and more than100 patents) for his contributions to both fields and according to research.com is ranked as the best scientist in France in the field of Electronics and Electrical Engineering. He is an IEEE Fellow, a WWRF Fellow, a Eurasip Fellow, an AAIA Fellow, an Institut Louis Bachelier Fellow, an AIIA Fellow and a Membre émérite SEE. His recent work led to the development of NOOR (upon it release, largest language model in Arabic) released in 2022, Falcon LLM (upon its release, top ranked open source large language model) released in 2023 and the Falcon Foundation in 2024.
The Falcon Model Series and The Falcon Foundation have positioned a global leader in the generative AI field in the Middle East.

In 2024, he pioneered the concept of TelecomGPT, the first comprehensive large language model (LLM) tailored for the telecom domain and was at the heart of new AI models called Large Perceptive Models that integrate multimodal IoT signals, real-time optimization, and intent-driven automation.
In 2025, he was named in as one of the "50 Leaders at the Forefront of an AI-Driven Future in the Middle East" and "Arab's Most Influential Leaders in Tech".



Pr. Emmanuel DESHAYES
FRANCE

Emmanuel Deshayes est Professeur des Universités Praticien Hospitalier (PU-PH) enseignant chercheur à la faculté de médecine Montpellier-Nîmes. Ancien assistant hospitalo-universitaire de la faculté de médecine Lyon Est, il a rejoint l'ICM en 2013 après avoir effectué durant une année des travaux de recherche dans le service de médecine nucléaire du Pr Prior du Centre Hospitalo-Universitaire Vaudois (CHUV) de Lausanne en Suisse.
Sa thématique de recherche en lien avec la Radiothérapie Interne Vectorisée (RIV) au sein du département de médecine nucléaire de l'ICM mais également au sein de l'équipe « Radiobiologie et Radiothérapie Vectorisée » de l'IRCM (INSERM U1194). Il est investigateur principal et coordinateur de nombreux essais cliniques internationaux en lien avec la RIV et travaille à facilité l'accessibilité de ces thérapeutiques innovantes aux patients de la région.
Localement il s'investit dans le parcours de soin des patients de la région à travers les RCP Thyroïde et RENATEN via le réseau Onco-Occitanie.
Il est depuis 2023 secrétaire général de la Société Française de Médecine Nucléaire et sera en 2026 membre du « comité dosimétrie » de la Société Européenne de Médecine Nucléaire (EANM).



Dr. Mohamed GUERNOU
FRANCE

He is a nuclear medicine physician at the Centre Cardiologique du Nord (CCN), Paris–FRANCE.
He is an expert in nuclear cardiology and cardiovascular molecular imaging, with particular expertise in CZT cardiac SPECT, PET/CT and SPECT/CT.
He was among the pioneers in the clinical use of CZT semiconductor cardiac cameras and has published extensively in nuclear cardiology and inflammatory imaging.



Pr. Ken HERRMANN
GERMANY

Chair of the Scientific Advisory Board of Molecular Partners, which he joined in 2025.
He is Professor of Nuclear Medicine at the University Hospital Essen, Section Editor of The Journal of Nuclear Medicine, and previous Chair of the European Association of Nuclear Medicine (EANM) Oncology & Theranostics Committee.

He was previously Adjunct Professor at the Department of Molecular and Medical Pharmacology at the University of California, Los Angeles (UCLA) and Vice Chair of the Department of Nuclear Medicine at University Hospital Würzburg.
Ken completed his residency in nuclear medicine at the Technical University Munich, a fellowship at Hokkaido University and earned his M.D. from Humboldt University Berlin and MBA from the University of Zurich.
He has authored over 600 peer-reviewed articles.



Mr. Djillali KHELFI
ALGERIA

Mr. Djillali KHELFI is a specialist researcher in mechanical and nuclear engineering, who currently occupies the position of Director for Nuclear Programs at the Atomic Energy Commission (COMENA).

Mr. KHELFI has a State Engineering Degree in Mechanical Engineering, with a specialization in energy (1992), as well as a Magister degree in the same field (2010). Reflecting his dedication to academic advancement, he is currently finalizing his LMD doctoral dissertation in Mechanical Engineering.

During his career, he has acquired expertise in nuclear reactor physics, safety, and the thermohydraulics of nuclear facilities. As an author and co-author, he contributed in the numerous scientific articles and publications in this field, thereby actively contributing to the advancement of research and the sharing of knowledge.

Mr. KHELFI has represented COMENA on several occasions at international workshops, forums, and technical meetings, including those organized by the IAEA, where he has presented papers on nuclear energy and its applications.



Pr. Fayçal KHARFI
ALGERIA

Lauréat du prix du président de la République au chercheur innovant en 2026 ,
le Pr KHARFI est titulaire d'un diplôme d'ingénieur d'Etat en génie nucléaire obtenu à l'université Ferhat-Abbas,
en 1995, il a poursuivi sa formation en obtenant un master dans la même spécialité, en 2004, puis un doctorat, en 2009, dans le cadre d'un programme international parrainé par l'Agence internationale de l'énergie atomique, en se concentrant sur la recherche en imagerie 3D.

Il a débuté sa carrière professionnelle en tant que chercheur dans l'un des centres du commissariat à l'énergie atomique (COMENA), en Algérie, avant de rejoindre en 2011 l'université de Sétif en tant que professeur et chercheur, où il a travaillé au sein de l'équipe de physique médicale sur l'application des radiations dans le domaine médical.



Pr. Esma KERBOUA
ALGERIA

Prof. Esma Kerboua is Professor of Medical Oncology and Head of the Medical Oncology Department at the Pierre and Marie Curie Center (CPMC), Algiers.
She has extensive experience in the multidisciplinary management of cancer, with particular expertise in solid tumors and head-and-neck malignancies.
She is actively involved in clinical research, medical education, and the development of modern and personalized oncology care in Algeria.
She is a member of several leading international oncology societies, including ASCO and ESMO.



Pr. Egesta LOPCI
ITALY

She is a Pr in diagnostic and therapeutic nuclear medicine, with particular expertise in molecular imaging and oncology, including lung, liver, lymphoma, brain, and urological malignancies, especially prostate cancer.

She serves on the editorial boards of several international journals and has held multiple roles as Associate, Deputy, Guest, and Section Editor, including for Frontiers in Nuclear Medicine, Journal of Clinical Medicine, Cancers, Frontiers in Oncology, and the American Journal of Nuclear Medicine and Molecular Imaging.
She is an experienced peer reviewer and external scientific evaluator for numerous leading journals and international research institutions, including EJNMMI, Clinical Cancer Research, European Radiology, Theranostics, Journal of Hepatology, Lung Cancer, Lancet Oncology, and several European and Middle Eastern academic institutions.

She has authored more than 290 scientific publications and has accumulated over 7,400 citations, and more than15 book chapters. Her work has received numerous international distinctions and research awards, including multiple EANM and SNMMI Best Abstract Awards, the EANM Young Investigator Award, an AIRC MFAG fellowship, and Italian Ministry of Health research grants.



Dr. Miriam MIKHAIL-LETTE
IAEA

Dr. Miriam Mikhail-Lette, a diagnostic radiologist at the International Atomic Energy Agency (IAEA) and an alumna of an eight-year program at the Mayo Clinic, serves as a technical lead for initiatives to strengthen medical imaging across more than 73 IAEA Member States. She also manages the IMAGINE database.

Her professional achievements include serving as a founding member of The Lancet Oncology Commission on Medical Imaging and Nuclear Medicine (2021). Furthermore, on behalf of the UN, she led the diagnostics working group (Pillar 2) for the development of the WHO Global Breast Cancer Initiative. Her background also encompasses clinical experience in radiology and diagnostic nuclear medicine, as well as the co-authorship of scientific publications and clinical best-practice guidelines.



Pr. Raja OTMANE
ALGERIA

Head of the Nuclear Medecine and molecular imaging departement.
University Hospital of Annaba Vice-president of Algerian Nuclear Medecine Association.
vice - president of the Algerian thyroïd and parathyroïd society.

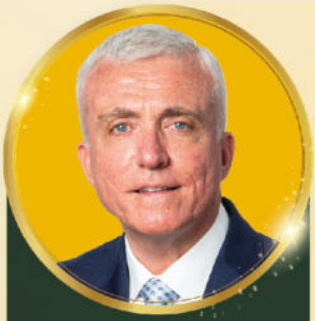


Pr. Hongcheng SHI
CHINA

Prof. Shi Hongcheng is Chief Physician, Professor, and Doctoral Supervisor, and Director of Nuclear Medicine at Zhongshan Hospital, Fudan University.

He also serves as Director of the Fudan University Institute of Nuclear Medicine and Deputy Director of the Shanghai Institute of Imaging Medicine.

He is President-elect of the Nuclear Medicine Branch of the Chinese Medical Association and has previously chaired the Shanghai Society of Nuclear Medicine. He is also an Honorary Fellow of the American College of Nuclear Medicine and a recipient of a distinguished-contribution award from the Society of Nuclear Medicine and Molecular Imaging (SNMMI).



Pr. Andrew SCOTT
AUSTRALIA

Prof Andrew Scott leads the Tumour Targeting Laboratory at the Olivia Newton-John Cancer Research Institute and is co-Director, Centre for Research Excellence in Brain Cancer, is Director, Department of Molecular Imaging and Therapy, Austin Health, and Professor, La Trobe University and The University of Melbourne. His clinical and research interests are focused on developing innovative strategies for targeted therapy of cancer (particularly with monoclonal antibodies), molecular imaging in oncology, and global advocacy in Oncology and Nuclear Medicine. His laboratory has been involved in the preclinical development and first-in-man trials of numerous recombinant antibodies in cancer patients, and seven antibodies developed in his laboratory have been licensed to Biotech and Pharma companies, and have entered Phase I/II/III trials. He has published over 480 peer-reviewed papers and 27 book chapters, is an inventor on 25 patents, and is a founder of a biotech company.

Another focus of his work is strategic planning for training, health care policy, and molecular imaging and nuclear medicine therapy advocacy within the US, European, South American, Asia-Oceania, and African regions, as well as with the IAEA and WHO and he also participates in policy and governance activities with the Australian Government. Prof Scott is the former president of the World Federation of Nuclear Medicine and Biology, the peak global nuclear medicine organisation.

In 2017, he was awarded Member (AM) in the General Division of the Order of Australia, and elected a Fellow of the Australian Academy of Health and Medical Sciences. In 2022 Prof Scott received the Saul Hertz award from SNNMI and Ajit Padhy award from WARMTH. In 2023, he received the Telix Award from ANZSNM, and in 2024, Prof Scott was elected Fellow, Society of Nuclear Medicine and Molecular Imaging, USA.



Pr. Mike SATHEKGE
SOUTH AFRICA

Mike Sathekge is a Professor and Head of Nuclear Medicine department at University of Pretoria and Steve Biko Academic Hospital. He also heads the South African Nuclear Medicine Research Infrastructure (NuMeRI). Internationally he is one of the two Editor-in-Chiefs of the Seminars of Nuclear Medicine Journal, Editor for Image of the Month of the European Journal of Nuclear Medicine and Molecular Imaging, Associate Editor for the Word Journal of Nuclear Medicine. Mike is the President-elect of the World Association of Radiopharmaceuticals and Molecular Therapy (WARMTH).
Mike has performed several the first-in-human studies and introduced peptide receptor radionuclide therapy and peptide radioligand therapy in Africa, as well as 225Ac-PSMA for prostate cancer. His publication and invited presentations record has earned him several key awards for research, including being rated as an Internationally Acclaimed researcher by the National research Foundation, winning the award to host the Main Nuclear Medicine Research Infrastructure (NuMeRI) Facility in South Africa. NuMeRI will be equipped with a cyclotron, a GMP radiopharmacy production facility, plus state-of-the-art pre-clinical and clinical imaging modalities.

Internationally recognized leader in nuclear medicine and radiotheranostics. • Professor and Chair of Nuclear Medicine at the University of Pretoria and Steve Biko Academic Hospital. • Extensive experience in PET/CT, oncology imaging, prostate cancer imaging, and radionuclide therapy. • Global expert in PSMA-based imaging and therapy, alphaand beta-emitting radiopharmaceuticals. • Widely published researcher with substantial contributions to theranostics and precision oncology. • Principal investigator and collaborator in multiple international clinical trials. 2 • Long-standing involvement in capacity building and expansion of nuclear medicine services throughout Africa. • Frequent invited speaker at major international meetings, including EANM, SNMMI, IAEA, WFNMB, and regional African scientific congresses.



Dr. Omar YEHIA
EGYPT

Director of the PET/CT and Theranostics Units at Misr Radiology Center (MRC), Cairo, with a particular interest in PET/CT oncology, molecular imaging, and radionuclide theranostics.
He has played an important role in the development of advanced molecular imaging in Egypt, including the introduction of Gallium-based PET/CT studies at MRC.
His clinical and scientific interests include PSMA PET/CT, neuroendocrine tumour imaging, prostate cancer theranostics, targeted radionuclide therapy and Parathyroid imaging. He has contributed to several scientific publications in PET/CT and theranostics and regularly participates in international educational and scientific activities in nuclear medicine.

Senior nuclear medicine physician with extensive experience in PET/CT and radionuclide therapy. • Recognized expert in theranostics and molecular imaging in the Middle East and North Africa region. • Active contributor to development of nuclear medicine services in Egypt. • Experience in implementation of advanced diagnostic and therapeutic nuclear medicine procedures. • Regular faculty member and invited speaker at regional and international scientific meetings. • Contributor to professional education and training programs in nuclear medicine. • Involved in clinical research and multidisciplinary oncology management.



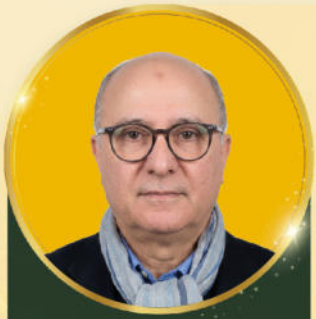
Pr. Habib ZAIDI
SWITZERLAND

Professor Habib Zaidi is Chief physicist and head of the PET Instrumentation & Neuroimaging Laboratory at Geneva University Hospital and full Professor at the medical school of the University of Geneva.

He is also a Professor at the University of Groningen (Netherlands), the University of Southern Denmark (Denmark) and Óbuda University (Hungary).
His research is supported by the Swiss National Foundation, the European Commission, private foundations and industry (Total 14.3M+ US$) and centres on hybrid imaging instrumentation (PET/CT and PET/MRI), computational modelling and radiation dosimetry and deep learning.

He was guest editor for 14 special issues of peer-reviewed journals and serves as founding Editor-in-Chief (scientific) of the British Journal of Radiology (BJR)|Open, Deputy Editor for Medical Physics and is on the editorial board of leading journals in medical physics and medical imaging.

He has been elevated to the grade of fellow of the IEEE, AIMBE, AAPM, IOMP, AAIS and the BIR. His academic accomplishments in the area of quantitative PET imaging and artificial intelligence-powered multimodality imaging have been well recognized by his peers since he is a recipient of many awards and distinctions among which the 2003 Bruce Hasegawa Young Investigator Medical Imaging Science Award given by the IEEE, the prestigious (100'000$) 2010 Kuwait Prize of Applied Sciences (known as the Middle Eastern Nobel Prize) and the 2023 John Mallard Award given by the IOMP for innovative developments of high scientific quality.
Prof. Zaidi has been an invited speaker of over 250 keynote lectures and talks at an international level, has authored over 505+ peer-reviewed articles (h-index=89, >29'200+ citations) in prominent journals and is the editor of four textbooks.



Pr. Noureddine ZERHOUNI
FRANCE

Professor at SUPMICROTECH-ENSMM | Researcher at the FEMTO-ST Institute – France
Professor Noureddine Zerhouni is a professor at SUPMICROTECH-ENSMM and a researcher at the FEMTO-ST Institute in Besançon, France.
Specializing in artificial intelligence, data analytics, and intelligent systems, he develops innovative methods for diagnosis, prognosis, and decision support. His research focuses on machine learning, intelligent monitoring systems, and the reliability of predictive models.

In the healthcare field, his research lies at the intersection of artificial intelligence, engineering, and medicine.
He has contributed to research on breast cancer detection and prediction, medical image analysis, connected medical devices, and AI-based diagnostic support systems.
His work also extends to medical imaging and nuclear medicine, particularly through the application of artificial intelligence to enhance image quality and automate the detection of abnormalities, notably in parathyroid gland imaging.
He is also interested in explainable artificial intelligence and medical data quality, aiming to advance the development of reliable, interpretable solutions tailored to the needs of healthcare professionals.

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3rd Edition

ICON'26

Algiers International Conference On Nuclear Medicine

November 20 - 21, 2026 - CRNA / COMENA, Algiers, Algeria

Abstract Book

42 abstracts accepted: 6 oral communications and 36 posters.
Part I lists the oral communications in the running order of the session of Saturday 21 November 2026 at 16:30 (Session 8).
Part II lists the posters by theme, numbered by submission number.

Contents

- Part I — Oral communications (6)
- Part II — Nuclear Oncology & Theranostics (8)
- Part II — Nuclear Imaging (SPECT, PET) (18)
- Part II — Radiopharmacy (1)
- Part II — Physics & Dosimetry (8)
- Part II — Artificial Intelligence (1)

Part I Oral Communications

Session of 60 minutes, Friday 20 November 2026 at 16:30.
Each presentation lasts 7 minutes; the discussion is handled according to the time available in the session.

Abstract n° 20 • Oral — slot 1 (16:30 – 16:37)

Stratégie de désescalade thérapeutique dans la prise en charge du carcinome thyroïdien différencié : expérience du service de médecine nucléaire de Tlemcen

ABDELKADER MEDJAHEDI — Faculté de médecine de Tlemcen

Theme: Nuclear Oncology & Theranostics • Presenting author: abdelkader medjahedi (Physician) • Keywords: Carcinome thyroïdien différencié, Désescalade thérapeutique , Iode 131

Introduction: Le carcinome thyroïdien différencié (CTD) est généralement associé à un pronostic favorable. Toutefois, il comporte un risque non négligeable de récidive, pouvant survenir précocement ou tardivement. L'objectif de cette étude était d'évaluer la réponse thérapeutique à 5 ans après l'adoption d'une stratégie de désescalade thérapeutique au sein du service de médecine nucléaire du Centre anti cancer de Tlemcen.

Patients et méthodes: Nous avons mené une étude longitudinale de survie incluant 2 165 patients diagnostiqués entre 2017 et 2019. Le risque initial de récidive a été évalué et la réponse au traitement a été analysée selon les critères recommandés, avec un suivi minimal de 5 ans pour le dernier patient inclus.

Résultats: Notre série a montré une nette prédominance féminine (88,8 %). L'âge moyen au diagnostic était de 45 ans (extrêmes : 7–89 ans). Le taux de réponse incomplète à 5 ans était de 9,4 %. Sept patients étaient sous thérapie ciblée et neuf décès ont été attribués à la maladie thyroïdienne. Les stades avancés (III–IVB), représentant environ 6 % des cas, présentaient une proportion plus élevée de réponses incomplètes, traduisant un pronostic moins favorable.

Discussion: L'analyse multivariée a identifié plusieurs facteurs pronostiques indépendants influençant la survie sans récidive (SSR), incluant des facteurs sociodémographiques, des caractéristiques tumorales et des paramètres morphobiologiques au cours du suivi. La réponse globale à la stratégie de désescalade thérapeutique, incluant la surveillance active et l'utilisation de faibles activités d'iode radioactif (30 mCi), était satisfaisante, confirmant le bon pronostic du CTD lorsqu'il est diagnostiqué et pris en charge précocement. Les formes avancées restent rares mais nécessitent une surveillance plus étroite et une stratégie thérapeutique plus agressive en raison d'un risque accru de réponse incomplète et de récidive.

Conclusion: Ces résultats soutiennent une approche thérapeutique adaptée au risque et confirment la pertinence de la désescalade thérapeutique chez les patients à faible risque.

Abstract n° 10 • Oral — slot 2 (16:37 – 16:44)

Radioiodine Therapy in Graves' Disease as Second-Line Treatment: Efficacy and Factors Associated with Response — A Retrospective Study of 132 Cases

MERIEM BELALOU [Department of Biophysics and Nuclear Medicine, EHU Oran, Algeria],
I. SEBAA [Department of Biophysics and Nuclear Medicine, EHU Oran, Algeria],
N. HELALI [Department of Biophysics and Nuclear Medicine, EHU Oran, Algeria],
M. CHAKOURI [Department of Biophysics and Nuclear Medicine, EHU Oran, Algeria].

Theme: Nuclear Oncology & Theranostics • Presenting author: Meriem BELALOU (Resident) • Keywords: Graves' disease, hyperthyroidism, radioactive iodine, radioiodine therapy, antithyroid drugs, specific activity

Introduction: Management of Graves' disease relies on three therapeutic modalities: antithyroid drugs (ATDs), surgery, and radioiodine therapy (RAI, iodine-131). The aim of our study was to evaluate the efficacy of RAI administered as second-line treatment after relapse, resistance, or intolerance to ATDs, and to identify factors associated with treatment response.

Materials and Methods: Retrospective study based on the database of the Nuclear Medicine department between 2019 and 2025. Of 159 records of patients with Graves' disease, 132 were included in the analysis (incomplete data for the remaining 27). The following were collected: age, sex, thyroid volume, administered iodine-131 activity, pre-RAI TSH and FT4, as well as post-RAI thyroid status and its time to onset. Specific activity was defined as the ratio of administered activity to thyroid volume. Quantitative variables were compared using the Mann-Whitney or Kruskal-Wallis tests, qualitative variables using the χ^2 test, and correlations using Spearman's coefficient. A multivariate logistic regression was performed to identify factors independently associated with treatment outcome.

Results: Mean age was 42.6 ± 13.2 years, with a female predominance (F/M ratio = 2.3). Mean thyroid volume was 26.6 ± 20.5 mL, and mean administered iodine-131 activity was 14.3 ± 2.9 mCi. Pre-RAI TSH had a median of 0.055 mIU/L [IQR: 0.01–1.55]. After RAI, 65.2% of patients were hypothyroid, 14.4% were euthyroid, and 20.5% had persistent hyperthyroidism. Thus, absence of persistent hyperthyroidism was observed in 79.5% of patients. A higher pre-RAI TSH was independently associated with a decreased risk of treatment failure (OR = 0.55; p = 0.010). A higher specific activity was associated with the occurrence of hypothyroidism (OR = 2.50; p = 0.031) and with a shorter time to its onset (rho = −0.28; p = 0.010).

Conclusion: RAI achieved control of hyperthyroidism in nearly 80% of patients treated as second-line therapy. Lower pre-RAI TSH was associated with a poorer therapeutic response, while higher specific activity was associated with more frequent and earlier onset of hypothyroidism. These findings support individualizing the administered iodine-131 activity according to thyroid volume.

Abstract n° 22 • Oral — slot 3 (16:44 – 16:51)

Explainable Radiomics Outperforms Deep Learning for Parathyroid Adenoma Detection in Dual-Isotope SPECT

AHLEM ELKORICHI [1], MARIA BOUNOUGHAZ [1], SADEK LABIB TERRISSA [2], NOUREDDINE ZERHOUNI [3], LAURENT COMAS [4], RADHIA BOUZIANE [1], HATEM BOULAHDOUR [4]

1. National Higher School of Computer Science (ESI), Algiers, Algeria
2. LINFI Laboratory, Mohamed Khider University, Biskra, Algeria
3. FEMTO-ST Institute, SUPMICROTECH-ENSMM, Besançon, France
4. Nuclear Medicine Department, CHU de Besançon, Besançon, France

Theme: Artificial Intelligence • Presenting author: Ahlem Elkorichi (Other) • Keywords: Parathyroid adenoma, SPECT, Radiomics, GLCM, Explainable AI, Computer-aided diagnosis, SHAP

Introduction: Preoperative localization of hyperfunctioning parathyroid glands is important for surgical planning in patients with primary hyperparathyroidism. Dual-isotope SPECT provides functional and anatomical information for this localization, but its interpretation can be challenging and reader-dependent, particularly for small or atypically located lesions. Although artificial intelligence and radiomics have been increasingly investigated in medical imaging, their application to parathyroid SPECT, and in particular the comparison of deep learning against interpretable radiomic features, remains insufficiently explored. As a necessary first step toward automated localization, we focus here on the binary detection task: determining whether a hyperfunctioning parathyroid gland is present at all. We aimed to compare deep learning-based and radiomics-based approaches for this parathyroid adenoma detection task on dual-isotope SPECT in order to identify the better-suited modeling paradigm, and to interpret the retained model using explainable AI.

Material & Methods: We retrospectively analyzed a single-center cohort of 50 patients (30 with surgically/histopathologically confirmed parathyroid adenoma, 20 without adenoma) who underwent dual-isotope SPECT using iodine-123 and 99mTc-sestamibi as separate imaging channels. After cervical-region cropping and intensity normalization, three approaches were compared at the patient level: a convolutional neural network (CNN) trained from scratch, transfer learning from pretrained ResNet architectures (Med3D, ImageNet), and a radiomics approach combining gray-level co-occurrence matrix (GLCM) Haralick texture descriptors and first-order intensity statistics with classical classifiers. Feature selection and hyperparameter tuning were performed within each training fold of a stratified, nested cross-validation to prevent information leakage. Performance was assessed by cross-validated AUC, repeated across five random seeds to assess stability, and permutation testing was used to determine whether observed performance exceeded a label-shuffled null distribution. The retained model was interpreted using SHAP (SHapley Additive exPlanations).

Results: Deep learning-based approaches showed limited and unstable cross-validated performance (AUC 0.530.67- depending on architecture), none exceeding the permutation-test null distribution. The radiomics approach, combining iodine-channel GLCM features with a Random Forest classifier, achieved a mean cross-validated AUC of 0.765 +/- 0.055, with performance exceeding the null distribution on all five seeds ($p < 0.05$). At the Youden operating threshold, this model reached a sensitivity of 0.600 +/- 0.077, specificity of 0.938 +/- 0.056, and positive predictive value of 0.941 +/- 0.054 (the latter reflecting the 60% adenoma prevalence of this cohort rather than a population-level estimate). SHAP analysis showed that texture descriptors capturing spatial heterogeneity, rather than first-order intensity features, contributed most strongly to model predictions.

Conclusion: In this retrospective, single-center proof-of-concept study, an explainable radiomics model achieved higher crossvalidated performance than the deep learning approaches evaluated for parathyroid adenoma detection on dual-isotope SPECT. However, its moderate sensitivity (0.600) means that, as currently calibrated, roughly four adenomas in ten would be missed if the model were relied upon alone, so it is better positioned as a decision-support aid than as a standalone diagnostic tool. These findings support further investigation of explainable radiomics as a candidate CAD approach for parathyroid SPECT, contingent on recalibrating the sensitivity-specificity trade-off and on external validation in larger, multicenter cohorts before any clinical use is considered.

Abstract n° 38 • Oral — slot 4 (16:51 – 16:58)

Predictors of Positive Parathyroid Scintigraphy - Toward an Artificial Intelligence-Based Predictive Model

DR INES CHETTIBI (DEPARTMENT OF NUCLEAR MEDICINE AND MOLECULAR IMAGING – CANCER CENTER CHU ANNABA), PR RAJA OTMANE (DEPARTMENT OF NUCLEAR MEDICINE AND MOLECULAR IMAGING – CANCER CENTER CHU ANNABA)

Theme: Artificial Intelligence • Presenting author: Ines Chettibi (Resident) • Keywords: Primary hyperparathyroidism (PHPT), 99mTc-sestamibi parathyroid scintigraphy, age, sex, injected activity, serum parathyroid hormone (PTH), serum calcium, Wisconsin index, and ultrasound (US), artificial Intelligence,Predictive Model

Background:
Primary hyperparathyroidism (PHPT) is an endocrine disorder in which one or more hyperfunctioning parathyroid glands produce excessive amounts of parathyroid hormone (PTH), resulting in hypercalcemia along with hypophosphatemia.
Minimally invasive parathyroidectomy (MIP) remains the preferred surgical treatment for PHPT. However, it's effectiveness depends on accurate localization of the affected parathyroid gland(s). Preoperative localization is based on ultrasonography and 99mTc-sestamibi parathyroid scintigraphy combined with SPECT/CT.
Identifying predictors of scintigraphic positivity could improve patient selection and support individualized imaging strategies. This study aimed to identify variables associated with positive parathyroid scintigraphy as a basis for developing an AI-Based predictive model.

Methods:
We retrospectively evaluated 169 patients with hyperparathyroidism who underwent preoperative parathyroid scintigraphy in the nuclear medicine department of Annaba between may 2023 and September 2026. 104 patients had a confirmed PHPT, secondary or tertiary hyperparathyroidism were excluded.
Technetium-99m sestamibi was administered intravenously at a dose of 13- 21 mCi followed by a dual-phase acquisition protocol and SPECT/CT using a hybrid dual head gamma camera equipped with low-energy-high-resolution collimators.
Scintigraphic findings were classified as positive, negative or equivocal. Equivocal studies were excluded from the binary analysis.Variables assessed included age, sex, injected activity, serum PTH, serum calcium, Wisconsin index (Ca × PTH), and US findings.
Continuous variables were compared using Mann-Whitney U tests and categorical variables using Fisher's exact tests. Variables associated with scintigraphic positivity were subsequently evaluated using multivariable logistic regression. ROC curve analysis was performed to identify exploratory thresholds.
Results:
Among the 104 patients, 62 scans were positive, 34 negative, and 8 equivocal. Positive scintigraphy was associated with higher PTH levels (median 176.05 vs. 131 pg/mL; p=0.006), higher serum calcium (108 vs. 98.5 mg/L; p=0.004), and a higher Wisconsin index (594.89 vs. 303.5; p=0.008). Positive US detection was also significantly associated with scintigraphic positivity (p=0.016), as was a larger maximal US lesion diameter (median 15 vs. 7 mm; p=0.006). Age, sex, injected activity, and ultrasound lesion location were not significantly associated with scintigraphic positivity.
ROC analysis identified exploratory optimal cutt-offs of 169.2 pg/ml for PTH (AUC 0.683; PPV 86.5%), 101,4 mg/L for serum calcium (AUC 0.707; PPV 78.7%) , 466.2 for The Wisconsin index (AUC 0.724; PPV 87.1%), and 7.3 mm for maximum US lesion diameter (AUC 0.862; PPV 93.5%)
In multivariable logistic regression analysis, PTH remained independently associated with scintigraphic positivity (OR 1.010 per pg/mL, 95% CI 1.002–1.019; p=0.020), as did positive US detection (OR 11.76, 95% CI 2.54–54.55; p=0.002) while serum calcium was not independently associated after adjustment (OR 1.033, 95% CI 0.981–1.088; p=0.217). The Wisconsin index and maximal US lesion diameter also lost their independent associations.
Conclusion:
Higher PTH, serum calcium, Wisconsin index, positive US detection, and larger US lesion diameter were associated with positive parathyroid scintigraphy in univariate analysis. However, only PTH and ultrasound detection remained independently associated after multivariable adjustment .
These findings provide a foundation for the development of an AI-Based Predictive Model. Further large prospective multicentre studies are needed to evaluate these initial findings.

Abstract n° 30 • Oral — slot 5 (16:58 – 17:05)

Dynamic Changes of Indoleamine 2,3 Deoxygenase 1 Expression in Response to Radiation in Lung Adenocarcinoma Cell Line

HAMZA AHMED SERIR [1], AHLEM BIOUT[2], MERIEM MEZAGUER[2], SOUMIA GAIS[2], FLORENCE N'GONGA[3], AHMED AMINE ZERGOUN[4], MERIEM BELABED[5]
1. Pan African University Basic Sciences Technology and Innovation,
2. Centre de Recherche Nucléaire d'Alger,
3. Jomo Kenyatta University of Agriculture and Technology,
4. Ghardaia University,
5. Icahn School of Medicine, Mount Sinai, New York.

Theme: Nuclear Oncology & Theranostics • Presenting author: Hamza Ahmed Serir (Other) • Keywords: Lung Cancer, Radioresistance, IDO1, Tryptophane Metabolism, Kynurenine Pathway.

Introduction: Indoleamine 2,3-dioxygenase 1 (IDO1) promotes tumor immune evasion through tryptophan catabolism and kynurenine production. Although IDO1 is overexpressed in multiple cancers and strongly associated with poor prognosis, clinical strategies have largely focused on combining IDO1 inhibitors with immunotherapy. Emerging preclinical evidence, however, points to a significant role for IDO1 in mediating responses to radiotherapy (RT), underscoring the need to clarify the underlying mechanisms. This study examines the dynamic changes in IDO1 expression and subcellular localization following gamma irradiation in A549 lung adenocarcinoma cells.

Materials and Methods: A549 cells were exposed to gamma irradiation. IDO1 expression and temporal shift in subcellular localization were assessed at multiple time points post-radiation using flow cytometry and immunofluorescence (IF) microscopy, respectively. To evaluate whether soluble factors released upon radiation influence IDO1 expression, naïve A549 cells were cultured with filtered conditioned media (CM) harvested from irradiated cultures.

Results: Radiotherapy significantly upregulated IDO1 expression in a time-dependent manner. Immunofluorescence microscopy revealed a distinct spatial shift, with IDO1 translocating from a dominant nuclear baseline localization to the cytoplasm at early time points post-RT (4h to 6h post-RT), followed by a predominant nuclear localization at 24 and 48h post-RT. Notably, conditioned media from irradiated cells induced a significant increase in IDO1 expression in non-irradiated cells within 6 hours.

Conclusion: Our findings demonstrate that radiation dynamically regulates IDO1 expression and induces distinct changes in its subcellular localization. Moreover, radiation promotes the secretion of potent soluble factors that can induce IDO1 expression in non-irradiated cells, suggesting a potential role of IDO1 in response to Radiotherapy.

Abstract n° 41 • Oral — slot 6 (17:05 – 17:12)

Association between non-stimulated thyroglobulin and FDG PET/CT positivity in differentiated thyroid carcinoma with negative radioiodine imaging

SOULEIMANE MEZA [1], S. RAHAL [1], A. BOUMOSBAH [1], F. ISNASNI [2], M. MOUMENE [3], M. MEDJAHER [1].
1. Central Hospital of Army, Algiers. 2. Regional Military University Hospital, Oran. 3. Mother and Child Hospital of Army, Algiers.

Theme: Nuclear Oncology & Theranostics • Presenting author: Souleimane Meza (Resident)

Introduction :
FDG PET/CT is an important imaging tool in differentiated thyroid carcinoma (DTC) when biochemical evidence of persistent or recurrent disease is present despite negative radioiodine imaging. We evaluated the association between non-stimulated serum thyroglobulin (Tg) level and 18F-FDG PET/CT positivity.

Methods:
We retrospectively analyzed 30 patients with DTC treated in our institution who underwent FDG PET/CT for detectable or elevated Tg in the setting of negative radioiodine imaging. All patients had Tg measured without stimulation and were negative for anti-thyroglobulin antibodies. PET/CT was classified as positive or negative according to the presence or absence of suspicious hypermetabolic lesions. Tg levels were compared using the Mann–Whitney U test and the ability of Tg to discriminate PET positivity was evaluated using ROC analysis.

Results:
FDG PET/CT was positive in 15 patients (50%) and negative in 15 (50%). Median serum Tg was significantly higher in PET-positive than in PET-negative patients (7.00 vs 2.99 ng/mL, p=0.009). PET positivity increased with increasing Tg levels: 820/ patients (40%) with Tg <10 ng/mL, 250%) 4/) with Tg 10–<30 ng/mL, and 583.3%) 6/) with Tg ≥30 ng/mL had positive PET/CT. Discriminatory performance was moderate overall (AUC 0.78). However, substantial overlap was observed between the two groups, with some PET-positive patients presenting with low Tg levels and some PET-negative patients showing elevated Tg.

Conclusion:
In DTC patients with biochemical evidence of persistent or recurrent disease and negative radioiodine imaging, higher non-stimulated Tg was associated with a higher likelihood of FDG PET/CT positivity. However, the overlap between PET-positive and PET-negative patients indicates that non-stimulated Tg alone should not be used as a strict threshold to select patients for 18F-FDG PET/CT.

Part II Posters

Printed poster, portrait, size 180 cm x 90 cm or smaller. Displayed on both days of the conference at the 4th floor of the CRNA headquarters in Algiers. The author, or one of the co-authors, brings the printed poster and installs it on the first day; the poster stays displayed for the full two days.

Nuclear Oncology & Theranostics

8 abstracts. Oncology, theranostics, radioiodine and PET/CT management studies.

ABSTRACT N° 5 • POSTER

Efficacy of Low-Activity Radioiodine Therapy (30 mCi) in pT1b Papillary Thyroid Carcinoma: A Retrospective Study of 125 Cases

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Theme: Nuclear Oncology & Theranostics • Presenting author: Meriem BELALOU (Resident) • Keywords: Papillary thyroid carcinoma ; pT1b ; Radioiodine ablation ; Thyroglobulin ; Low-activity ^{131}

Introduction: Management of pT1b papillary thyroid carcinoma (PTC) remains debated, between achieving optimal biochemical remission and avoiding overtreatment. Low-activity radioiodine (^{131}I) ablation of post-thyroidectomy remnants has been proposed as an effective, less aggressive alternative. This study aimed to evaluate the therapeutic efficacy of low-activity ^{131}I (30 mCi) ablation in a real-world cohort of pT1b PTC patients.

Material and Methods: We conducted a retrospective, descriptive, single-center study at the Department of Biophysics and Nuclear Medicine, EHU Oran, Algeria, over a 3-year period (January 2022 – December 2024). Of 294 initial records of patients with pT1b PTC who underwent total thyroidectomy followed by remnant ablation with ^{131}I (30 mCi / 1.1 GBq), 125 patients were included after excluding those with positive anti-thyroglobulin antibodies, patients lost to follow-up, and incomplete biological data. Stimulated thyroglobulin (Tg) and TSH were measured under hormone withdrawal, both before and after ablation.

Results: The cohort was predominantly female (92.8%, F/M ratio = 16.6), with a mean age of 45.8 ± 13.1 years (median 44; range 19–85). Adequate TSH stimulation (> 30 mIU/L) was achieved in 92.0% of patients before ablation and 98.4% after (mean TSH: 70.6 ☒ 85.7 mIU/L). Stimulated Tg decreased significantly after ablation, from a median of 1.70 ng/mL (mean 3.87 ± 5.09) to 0.20 ng/mL (mean 0.91 ± 2.41) (Wilcoxon signed-rank test, $p < 0.001$), with a decline observed in 81.6% of patients. A post-ablation Tg < 1 ng/mL, the conventional threshold for successful ablation, was reached in 86.4% of patients, and an excellent biochemical response (Tg < 0.2 ng/mL) was observed in 45.6%.

Conclusion: Low-activity (30 mCi) radioiodine ablation achieves a high rate of biochemical success (86.4%) in patients with pT1b papillary thyroid carcinoma, with a significant reduction in stimulated thyroglobulin. These findings support the use of reduced ^{131}I activity as an effective and less aggressive strategy in this low-risk population, in line with current efforts to limit overtreatment. Larger prospective comparative studies are warranted to confirm these results and refine indications for low-dose ablation in pT1b PTC.

ABSTRACT N° 14 • POSTER

De la stadification initiale à l'évaluation thérapeutique : La place de la TEP au FDG dans le lymphome digestif

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Theme: Nuclear Oncology & Theranostics • Presenting author: Toufik Zehnati (Physician) • Keywords: PET, FDG, Lymphome digestif

Introduction.
Les lymphomes digestifs (LD) se développent à partir du tissu lymphoïde associé aux muqueuses (Mucosa Associated Lymphoid Tissue : MALT). Il s'agit le plus souvent de lymphomes à petites cellules B, dits de faible degré de malignité, cependant, une transformation maligne est possible. L'objectif de ce travail est de souligner l'apport de la TEP/TDM au 18F-FDG dans la prise en charge de cette pathologie.

Matériel et méthode.
Patient âge de 50 ans qui présente une masse abdominal et des épigastralgies notamment post prandiales. La Fibroscopie Œsogastroduodénale pratiquée chez le patient retrouve une lésion ulcéreuse de l'antre gastrique. La biopsie avec étude histologique montre un processus hymphomateux à grandes cellules B sur un fond de gastrite. La TDM retrouve des adénopathies mésentériques pre pancréatiques. Il a été adressé pour un examen PET au 18F-FDG afin de caractériser la masse et de stadifier la maladie. L'examen PET réalisé 60 nm après injection de 278 MBq 18F-FDG, avec une acquisition PET du sommet du crâne à mi-cuisses, bras levés. L'examen est suivi par une acquisition tomodensitométrique (TDM : 120 kV et 150 mA) pour la correction de l'atténuation et repérage anatomique.

Résultats.
L'examen PET au 18F-FDG montre, au niveau de l'étage abdomino-pelvien, un foyer très intensément hypermétabolique de la région antro-pylorique (SUVmax de 37.05), deux formations ganglionnaires très intensément hypermétaboliques pylorique (SUVmax 32.22) et pancréatique (SUVmax 27.75), ainsi qu'un épaississement pariétal hypermétabolique très intense SUV max 17.98 de la dernière anse iléale, associé à quelques formations ganglionnaires satellites infra et juxta centimétriques, faiblement hypermétaboliques.
Le patient a été traité par 4 cures R-CHOP, un examen PET intérim de contrôle qui a montré une régression morpho-métabolique de de la masse tissulaire antro-pylorique, ainsi que la régression morpho-métabolique du 2ème site iléale, ainsi que les adénopathies satellites au niveau pylorique et pancréatique. Cet aspect est celui d'une réponse métabolique complète (score Deauville = 2)

Discussion
Le lymphome à petites cellules B, dérive de la zone marginale du MALT, (dôme du MALT). Le deuxième type de lymphome le plus souvent retrouvé dans l'estomac correspond aux lymphomes à grande cellules B, qui peut survenir de novo ou bien suite à une transformation des lymphomes à petites cellules B. La localisation gastrique est la plus fréquente, elle représente près de 75% des LD, suivi de l'Intestin grêle (8,6%), la région iléo-caecale (7%). Le lymphome digestif est multifocal dans 6,5% des cas. La TEP au 18F-FDG est un examen métabolique permettant caractériser le lymphome et de rechercher l'atteinte ganglionnaire locorégionales ou à distance, cela avait permis de bien stadifier de la maladie et de guider la stratégie thérapeutique. Le PET au 18F-FDG est également un excellente outille pour évaluer la réponse thérapeutique et il apporte également des renseignements d'ordre pronostique.
Conclusion
La TEP/TDM au 18F-FDG est un examen incontournable dans la prise en charge diagnostique et thérapeutique des lymphomes digestifs. Cet examen métabolique offre une stadification précise de la maladie, l'évaluation la réponse thérapeutique et le diagnostic des récidives.

ABSTRACT N° 16 • POSTER

Explainable Radiomics Outperforms Deep Learning for Parathyroid Adenoma Detection in Dual-Isotope SPECT

BOUGARA IMENE , CLINIQUE FATEMA EL AZHAR DELY BRAHIM ALGER

Theme: Nuclear Oncology & Theranostics • Presenting author: Imene BOUGARA (Physician) • Keywords: Nodule pulmonaire, cancer pulmonaire ; TEP/TDM 18 FDG ; stadification ; TNM ; réponse thérapeutique ; récidive ; décision thérapeutique.

Introduction : Le cancer pulmonaire est l'un des cancers les plus fréquents et demeure l'une des principales causes de mortalité par cancer.
Dans sa prise en charge multidisciplinaire la TEP TDM 18FDG occupe une place majeure à différentes étapes du parcours du patient car la stratégie thérapeutique varie considérablement selon le caractère localisé, localement avancé ou métastatique de la maladie.

Méthodes: Revue de la littérature consacrée aux performances diagnostiques de la TEP TDM 18FDG dans la caractérisation du nodule pulmonaire et la prise en charge du cancer pulmonaire, illustré par des cas clinique mettant en évidence son influence sur la stratégie thérapeutique.

Résultats : Après un rappel histologique et des principales indications de la TEP 18FDG, cette présentation aborde son impact décisionnel à plusieurs étapes du parcours de la prise en charge.
La TEP 18FDG contribue à la caractérisation métabolique des nodules pulmonaires, à la définition du statut tumoral ainsi qu'à la détection des localisations ganglionnaires et à distance, pouvant conduire à un reclassement du stade TNM et modifier l'intention thérapeutique, notamment en remettant en question une indication chirurgicale ou en réorientant le patient vers une stratégie multimodale ou systémique.
Elle intervient également dans l'évaluation précoce de la réponse au traitement, la recherche d'une maladie résiduelle ou d'une récidive, ainsi que dans la planification de la radiothérapie conformationnelle.
Les principales limites de la technique sont également abordées, notamment les faux positifs inflammatoires et les faux négatifs de certaines tumeurs faiblement avides ou de petite taille.
Des cas cliniques qui illustrent ces situations de changement de stratégie thérapeutique

Conclusion: Dans le cancer pulmonaire, la valeur de la TEP TDM 18FDG ne réside pas uniquement dans l'amélioration de la détection des lésions, mais surtout dans sa capacité à fournir une information susceptible de modifier une décision thérapeutique. Son interprétation doit rester intégrée aux données cliniques, morphologiques, histologiques et à la discussion multidisciplinaire, en particulier lorsque le résultat est susceptible de faire basculer le patient d'une stratégie curative vers une autre modalité de traitement.

ABSTRACT N° 32 • POSTER

18F-FDG PET/CT in the Different Stages of Lymphoma Management: A Report of 10 Cases

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Theme: Nuclear Oncology & Theranostics • Presenting author: Samia Benzerdjeb (Physician) • Keywords: 18F-FDG PET/CT; Hodgkin lymphoma; Non-Hodgkin lymphoma; Deauville score; Metabolic response; Treatment evaluation

IIntroduction
18F-FDG PET/CT plays a central role in the management of lymphomas, both in the initial staging assessment and in the evaluation of treatment response and the detection of recurrence. The Deauville score is the reference for the assessment of metabolic response. We report a series of 10 cases illustrating different situations encountered during the management of Hodgkin and non-Hodgkin lymphomas.

Materials and Methods
We report 10 patients aged 8 to 49 years who underwent 18F-FDG PET/CT at our institution in January 2026 for known lymphoma or suspected lymphoma. The series included 6 patients with Hodgkin lymphoma and 4 patients with non-Hodgkin lymphoma or a suspicious mediastinal mass. The examinations were performed either for initial staging (n = 2) or during therapeutic follow-up (n = 8), including interim, end-of-treatment, or recurrence assessments. Metabolic response was assessed according to the Deauville score. The low number of pre-treatment examinations was due to the limited number of PET facilities, the high demand at our department, and the need to initiate treatment promptly.

Results:
Initial staging (n = 2):
18F-FDG PET/CT revealed, in two patients, bulky, multilobulated, intensely hypermetabolic anterior mediastinal masses. The first measured 100 × 82 × 137 mm with a SUVmax of 13.44, corresponding to stage IIX according to the Ann Arbor classification. The second measured 72 × 70 × 74 mm with a SUVmax of 25.42, corresponding to stage II.
Complete metabolic response (n = 4):
A complete metabolic response was observed in four patients, with a Deauville score of 1 in three cases and a Deauville score of 2 in one case.
Metabolically active disease or absence of complete response (n = 3):
Three examinations were classified as Deauville 5, in favor of metabolically active disease, with supra- and subdiaphragmatic nodal involvement, associated, depending on the case, with splenic, osseous, or pulmonary sites.
Equivocal result requiring confirmation (n = 1):
A patient with non-Hodgkin lymphoma (NHL), declared in remission in October 2024, presented with bilateral cervical lymphadenopathy with moderate hypermetabolism (SUVmax = 8.54), for which a lymphomatous or inflammatory origin could not be confirmed. Fine-needle aspiration was recommended for diagnostic orientation, with the result favoring an inflammatory origin.

Conclusion: This series illustrates the role of 18F-FDG PET/CT in the different stages of lymphoma management, from initial staging to the evaluation of therapeutic response. The Deauville score allows a standardized assessment of metabolic response and may lead to a change in therapeutic strategy.
La TEP/TDM au 18F-FDG est un examen incontournable dans la prise en charge diagnostique et thérapeutique des lymphomes digestifs. Cet examen métabolique offre une stadification précise de la maladie, l'évaluation la réponse thérapeutique et le diagnostic des récidives.

ABSTRACT N° 35 • POSTER

Evaluation of the Specific Activity of 166Ho Produced by the 165Ho(n,γ)166Ho Reaction for Medical Applications

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Theme: Nuclear Oncology & Theranostics • Presenting author: DIB AMEL (Physician) • Keywords: 165Ho(n,γ)166 Ho; theranostic; specific activity; neutron irradiation; radionuclide

Holmium-166 is an attractive theranostic radionuclide for targeted radionuclide therapy because of its radioactive decay properties and its potential for localized radiation treatment. In this study, the production of 166Ho through the neutron capture reaction 165Ho(n,γ)166 Ho is investigated, with particular emphasis on the evaluation of its specific activity.

The production of 166Ho is studied under different neutron irradiation conditions by considering the neutron flux, irradiation time, decay period, and neutron capture cross section. The evolution of the produced activity and the corresponding specific activity are evaluated in order to determine the efficiency of the production process. The obtained results can also be used to investigate the influence of the irradiation parameters on the final activity of 166Ho.

The evaluation of specific activity is particularly important for medical applications, since a high specific activity can improve the efficiency of radionuclide-based therapeutic procedures while limiting the amount of stable carrier material. The results of this study provide useful information for assessing the feasibility of 166Ho production by neutron irradiation and for optimizing the irradiation conditions required for potential therapeutic applications.

This work contributes to the development of reliable calculations for 166 Ho production and provides a basis for further studies related to its use in targeted radionuclide therapy and other medical applications.

ABSTRACT N° 39 • POSTER

Different Profiles of Radioiodine-Refractory Thyroid Carcinoma: A Single-Center Retrospective Study.

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Theme: Nuclear Oncology & Theranostics • Presenting author: SARRA GUERBI (Resident) • Keywords: Thyroid carcinoma; Radioiodine-refractory disease; I-131; post-therapeutic scintigraphy; Thyroglobulin.

-Introduction :
Radioiodine-refractory thyroid carcinoma is a challenging disease stage, showing heterogeneous clinical, biological, pathological and imaging features. The delineation of these profiles can contribute to a better understanding of the disease in routine practice of nuclear medicine.
-Goals:
To describe the different profiles of radioiodine refractory differentiated thyroid carcinoma seen at our center.
-Patients and Methods:
We performed a single-center retrospective descriptive study of patients with radioiodine-refractory differentiated thyroid carcinoma. Clinical, histopathological, biochemical, therapeutic and post-therapeutic I-131 scintigraphic data were collected, including thyroglobulin, anti-thyroglobulin antibodies, TSH, cervical and metastatic I-131 uptake, known non-avid lesions and documented disease progression. Preliminary analysis of 20 patients was performed with patient inclusion ongoing.
-Results:
The first analysis showed heterogeneous profiles of radioiodine refractory thyroid carcinoma, in relation to histological characteristics, metastatic involvement, biochemical findings, I-131 uptake and disease progression. Several scintigraphic profiles were observed including absence of relevant tumor uptake, secondary loss of previously demonstrated uptake, heterogeneous uptake among tumor lesions and disease progression despite persistent I-131-avid disease. A discordance between biochemical and scintigraphic findings was also found in some patients.
-Conclusion:
Radioiodine-refractory thyroid carcinoma includes different clinical, biological, pathologic and scintigraphic profiles. The association of these characteristics allows a global description of the different presentations encountered in routine practice.

ABSTRACT N°43 • POSTER

Predictive Value of Pre-Therapeutic Stimulated Thyroglobulin for Response to a First 100 mCi Radioiodine Therapy in Differentiated Thyroid Cancer

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Introduction :
Stimulated thyroglobulin (Tg) is an important biochemical marker in the follow-up of patients with differentiated thyroid cancer (DTC) after total thyroidectomy. Tg measured immediately before the first radioiodine therapy may provide early prognostic information regarding treatment response. This study aimed to evaluate the predictive value of pre-therapeutic stimulated Tg for response to a first 100 mCi I-131 treatment.

Patients and Methods:
We conducted a retrospective monocentric study including patients with DTC who underwent a first radioiodine therapy with a fixed activity of 100 mCi in our nuclear medicine department. Stimulated Tg, measured during TSH stimulation immediately before I-131 administration, was collected. Treatment response was assessed during follow-up using available biochemical and imaging data. Patients were classified according to the achievement or absence of a complete response. The predictive performance of pre-therapeutic Tg was assessed using receiver operating characteristic (ROC) curve analysis.

Results:
Among 256 records initially reviewed, 111 patients currently met the predefined eligibility criteria. All patients received a first 100 mCi I-131 treatment. A complete response was observed in 76 patients (68.5%), whereas 35 patients (31.5%) had an indeterminate or incomplete response. Pre-therapeutic stimulated Tg was significantly higher in patients without a complete response compared with those achieving a complete response: median 13.06 ng/mL [IQR: 1.58–44.80] versus 2.05 ng/mL [IQR: 0.30–6.25], respectively ($p < 0.001$). ROC curve analysis showed an area under the curve (AUC) of 0.729. An exploratory Tg threshold of 11.08 ng/mL yielded a sensitivity of 57.1% and a specificity of 92.1% for predicting a non-complete response. Among patients with negative anti-thyroglobulin antibodies, the AUC was 0.799.

Conclusion:
These preliminary results suggest that stimulated Tg measured immediately before a first 100 mCi I-131 treatment may have predictive value for treatment response in patients with DTC. Higher pre-therapeutic Tg levels were associated with a higher probability of a non-complete response. The study is ongoing, with additional patients being included to increase the sample size, strengthen the statistical analysis, and further define the optimal Tg threshold for predicting response to radioiodine therapy.

ABSTRACT N° 49 • POSTER

The Contribution of Somatostatin Receptor Scintigraphy in Radioiodine-Refractory Differentiated Thyroid Carcinoma and TENIS Syndrome: A Case Report

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Theme: Nuclear Oncology & Theranostics • Presenting author: Malak Boudjadja (Resident) • Keywords: TENIS syndrome Somatostatin receptor scintigraphy Radioiodine-refractory thyroid carcinoma

Although differentiated thyroid carcinoma has a good prognosis, the nuclear medicine physician still faces two situations of diagnostic impasse: iodine-refractory carcinoma and TENIS syndrome (Thyroglobulin Elevated Negative Iodine Scintigraphy). In the face of a negative iodine-131 scan, the expression of somatostatin receptors by dedifferentiated cells suggests the potential value of somatostatin receptor scintigraphy (SRS) as an alternative for lesion localization.

We report the case of a 55-year-old female patient followed for classical papillary carcinoma (pT3a Nx Mx). After four courses of iodine-131, the course was marked by elevated thyroglobulin (> 500 ng/mL under withdrawal) contrasting with a blank mapping, confirming a TENIS syndrome.

Although 18F-FDG PET/CT revealed several hypermetabolic foci, concomitantly performed SRS demonstrated pathological uptake superimposable on the PET findings, confirming the presence of these receptors within the lesions.

This clinical case demonstrates that SRS may constitute a diagnostic alternative for localizing recurrences and assessing disease extent in this context of tumor dedifferentiation.

Nuclear Imaging (SPECT, PET)

18 abstracts. SPECT, SPECT/CT and PET/CT imaging, tracers and clinical cases.

ABSTRACT N° 4 • POSTER

Pièges et sources d'erreurs de la TEP au 18F-FDG dans le cancer bronchique.

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Theme: Nuclear Imaging (SPECT, PET) • Presenting author: Toufik Zehnati (Physician)

Introduction.
De nombreux pièges et sources d'erreurs (faux positifs (FP) et faux négatifs (FN)) peuvent survenir lors de la réalisation d'un examen TEP au FDG dans le cadre du bilan du cancer bronchique. Ces artefacts peuvent avoir plusieurs origines, notamment liés à la physiologie, au patient, à l'acquisition et au traitement d'image. Il est important de connaître ces causes et de reconnaitre sur l'imagerie ces différentes sources de FP et FN, car cela permet de réduire les erreurs d'interprétation et d'éviter des décisions thérapeutiques inappropriées. L'objectif de ce travail est de rapporter certains artefacts fréquents.

Matériels et méthodes.
Il s'agit de 3 patients qui présentent un cancer bronco-pulmonaire adressés pour un examen PET au FDG dans le cadre du bilan initial et/ou d'évaluation. L'examen PET au 18F-FDG est réalisé chez ces patients à jeun, après l'injection d'une activité de 270 – 300 MBq en IV, les patients sont mis aux repos stricts dans des box individuels. L'acquisition des images PET a été faite après un délai de 60 mn du sommet du crâne à mi-cuisses. Suivi d'une acquisition tomodensitométrique (TDM faible dose 80 kV – 50 mA) afin de corriger l'atténuation et pour repérage anatomique.

Résultats
Observation 1 : Patient age de 58 ans tabagique, qui a presenté un adenocarcinome bronchique traité par radiochiniotherapie. Il a été adressé pour la recherche de malladie residuelle ou recidivante. L'examen PET au FDG montre a l'etage thoracique une plage heterogene en bande hypermetabolique intense avec un SUVmax de 15 au niveau du poumon gauche. La TDM montre une opacité heterogene condensante avec bronchogramme aérique. Cette lesion correspond a une pneumonie post radique, un phenomene inflammatoire frequent apres une irradiation. l'examen PET/TDM au FDG refait 3 mois plustard montre, a l'imagerie morphologique, une nette regrassion des lesions de pneumonie avec installation de la fibrsoe. L'imagerie metabolique montre une nette diminution de la fixation du FDG. L'analyse des images PET ne retrouve pas de lesions tumorale residuelle active ni recidive.
Observation 2 : Patient age de 58 ans tabagique qui est adressé pour bilan initial d'un cancer branchique, le PET au FDG met en evidence une masse tirrulaire intensement hypermetabolique du LSD correspondant a la tumeur primitive. Par ailleur, un deusieme foyer plus volumineux egalement hypermetabolique a heuteur du mediastin et para cardiaque. En effet ce foyer correspond sur les coupes transverses de fusion PET et TDM a la fixation intense d'un tissus de texture graisseuse a la TDM au niveau inter-auriculaire, corresponde a un lypome inter-auriculaire.
Observation 3 : patient age de 62 ans, qui presente a la TDM une importante masse lobaire inferieur droite. L'examen PET au FDG retrouve une importante masse intensement hypermetabolique avec un SUVmax de 33, associée a une ADP hypermetabolique SUVmax de 5,4 hilaire droite dorigime metastatique. On note egalement des fixations nom tumorales l'une liniaire le long de l'avant bras et du bras gauche avec accumulation du FDG au niveau des ganglions axillaire gauche. Cet hypermetabolisme non tumorale est lié au passage du RT dans l'espace interstitiel avec drainage lymphatique vers les ganglions axillaire.

Conclusion.
La TEP/TDM au 18F-FDG est un examen très sensible pour la stadification du cancer bronchique, l'évaluation thérapeutique et la recherche de récidives. Cependant, des artefacts peuvent survenir. Il est crucial de reconnaitre ces artefacts, qu'ils soient technique, physiologique ou pathologique, en examinant le patient correctement (interrogatoire, histoire clinique, les antecedants therapeutique,..) et en analysant conjointement les images scannographique et l'imagerie de fusion TEP/TDM.

ABSTRACT N° 8 • POSTER

Molecular Imaging of Brown Adipose Tissue: A Comprehensive Review of PET-CT, PET-MRI, SPECT-CT, and PET-Fluorescence

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Theme: Nuclear Imaging (SPECT, PET) • Presenting author: Tarik-Zine Belhocine (Physician) • Keywords: Brown adipose tissue ; molecular hybrid imaging ; molecular targets ; molecular probes ; biological functions ; BAT ; targets ; probes ; molecular hybrid imaging platforms

Introduction:
Brown adipose tissue (BAT) is a highly vascularized and mitochondria-rich organ that contributes to thermogenesis through uncoupling protein-1-mediated, a non ATP dependent pathway leading to a non-shivering heat production. BAT is an organ with a particular topography in the body of animals and humans. Its activity varies with age, gender, body mass index, outdoor temperature, and sympathetic stimulation. It may also be involved in metabolic, cardiovascular, inflammatory, neuroendocrine, and neoplastic disorders. Molecular imaging has substantially improved the in vivo detection and characterization of BAT. This comprehensive review summarizes the documented molecular targets and probes, biological functions and hybrid imaging platforms used in nuclear medicine to investigate BAT.

Methods:
PubMed/MEDLINE and Google Scholar were searched using the following key-words: "brown adipose tissue", "brown fat", "PET-CT", "PET-MRI", "SPECT-CT", and "PET-fluorescence". Clinical and preclinical studies evaluating BAT were reviewed. Precision regarding the fatty tissue uptake was provided by some authors about their research.

Results:
In BAT molecular imaging, a number of radiolabelled probes have been routinely used in clinical practice. 18F-FDG remains the most widely used tracer for detecting metabolically active BAT with PET-CT and PET-MRI. SPECT-CT tracers including 99mTc-MIBI, 99mTc-tetrofosmin and 123I-MIBG, have demonstrated BAT perfusion, mitochondrial activity and sympathetic innervation. In the recent years, new probes have been developed in preclinical research and clinical research with emerging PET-fluorescence aimed at evaluating glucose, fatty acid, triglyceride, amino acid, choline, and oxidative metabolism. Additional targets include β-adrenergic and norepinephrine transport pathways, somatostatin receptors, cannabinoid receptors, inflammatory mediators, immune checkpoint pathways, mitochondrial membrane potential, electron transport chain activity, and mitochondrial DNA synthesis. BAT-like tracer uptake has also been reported in hibernomas (benign tumors of the BAT) with 18F-FDG, 68Ga-DOTA-TATE, 68Ga-PSMA, and 68Ga-FAPI radiopharmaceuticals. Noteworthy, a BAT-cancer relationship has also been suggested with the 18FDG tracer.

Conclusion:
Molecular hybrid imaging with radiolabelled tracers/probes enables the visualization, characterization, and quantitative assessment of BAT. Beyond distinguishing physiological uptake from disease, these techniques provide insights into BAT perfusion, sympathetic neuroendocrine regulation, substrate metabolism, mitochondrial function, inflammation and immune activity. PET-CT, PET-MRI, SPECT-CT, and PET-fluorescence may therefore support research into the role of BAT in obesity, diabetes, cardiovascular disease, inflammation, hibernoma, and cancer.
de la maladie, l'évaluation la réponse thérapeutique et le diagnostic des récidives.

ABSTRACT N° 18 • POSTER

99mTc-Sestamibi Parathyroid Scintigraphy Coupled with SPECT/CT: From Cervical Localization to Complex Clinical Situations - A Five Case Series -

OKBA ARAR, S. BRAHMI, A.AMIMOUR

Theme: Nuclear Imaging (SPECT, PET) • Presenting author: Okba Arar (Resident) • Keywords: Hyperparathyroidism; 99mTc-sestamibi; parathyroid scintigraphy; SPECT/CT; ectopic localization; multiglandular disease; tertiary hyperparathyroidism.

Introduction: Hyperparathyroidism (HPT) is an endocrine disorder primarily diagnosed on clinical and biochemical grounds. Imaging aims to localize hyperfunctioning parathyroid tissue, particularly for surgical planning. 99mTc-sestamibi (99mTc-MIBI) scintigraphy combined with SPECT/CT provides both functional information and precise anatomical localization, with particular value in ectopic, postoperative, and multiglandular disease. However, MIBI uptake is not specific to parathyroid tissue, and thyroid lesions may represent diagnostic pitfalls.

Material & Methods: We report a descriptive series of five patients (4 women, 1 man), aged 33–66 years, investigated for primary or tertiary HPT. The protocol included 185 MBq of 99mTc with cervical imaging at 20 minutes, followed by 740 MBq of 99mTc-MIBI with early planar imaging at 15 minutes (cervical and whole-body), early cervicomediastinal SPECT/CT, and delayed static imaging at 2 hours. Findings were correlated with available biochemical and ultrasonographic data.

Result: In a 61-year-old man with primary HPT (PTH 102.7 pg/mL), SPECT/CT demonstrated an intensely MIBI-avid right retrothyroid lesion measuring 10 × 7 × 23 mm, consistent with hyperfunctioning parathyroid tissue. In a 33-year-old woman with previous subtotal parathyroidectomy, investigated for suspected persistent/recurrent disease, ultrasound was negative, whereas SPECT/CT identified an 8.7 × 5 × 10 mm left basocervical and upper mediastinal lesion with MIBI uptake, suggestive of ectopic parathyroid tissue. A 56-year-old woman with severe tertiary HPT secondary to chronic kidney disease and PTH 1260 pg/mL had a large intensely MIBI-avid right retro-lobar paraesophageal lesion measuring 30 × 21 × 27 mm. Two additional non-MIBI-avid left laterothyroid lesions raised suspicion of multiglandular disease; multiple osseous abnormalities were compatible with brown tumors. In a 66-year-old woman with primary HPT, SPECT/CT identified a 19 × 9 × 26 mm right posterior laterotracheal lesion compatible with hyperfunctioning parathyroid tissue. Finally, in a 56-year-old woman, SPECT/CT confirmed the strictly intrathyroidal location of a 12 × 8 mm right basal thyroid nodule with persistent delayed uptake, without evidence of an active parathyroid focus, compatible with a hyperfunctioning thyroid nodule.
Overall, a focus compatible with hyperfunctioning parathyroid tissue was identified in 45/ patients (80%).
Conclusion: 99mTc-MIBI scintigraphy combined with SPECT/CT is a valuable tool for localizing hyperfunctioning parathyroid tissue. It provides important anatomical information in ectopic, postoperative, and multiglandular disease while helping identify thyroid uptake pitfalls. Interpretation should remain integrated with clinical, biochemical, and ultrasonographic findings.

ABSTRACT N°21 • POSTER

Apport de la TEP-TDM au 18F-FDG dans la détection d'une atteinte osseuse occulte du cancer du sein : à propos d'un cas

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Theme: Nuclear Imaging (SPECT, PET) • Presenting author: MOUHSSIN AMIN MOUMENE (Other) • Keywords: Cancer du sein ; TEP-TDM au 18F-FDG ; métastases osseuses occultes ; atteinte osseuse infra-radiologique ; imagerie métabolique

Introduction :Le cancer du sein est l'une des principales causes de métastases osseuses. La scintigraphie osseuse et la tomodensitométrie (TDM) sont encore largement utilisées pour évaluer l'atteinte osseuse, mais elles peuvent être prises en défaut lorsque les lésions sont précoces ou essentiellement médullaires. La TEP-TDM au 18F-FDG permet d'évaluer l'activité métabolique tumorale et peut ainsi révéler des localisations secondaires avant leur traduction morphologique. Nous rapportons un cas illustrant l'apport de la TEP-FDG dans la détection de lésions osseuses occultes chez une patiente jeune présentant un cancer du sein localement avancé.

Matériel et méthodes : Nous rapportons l'observation d'une patiente âgée de 33 ans, présentant un carcinome invasif du sein droit de type NST (NOS), de profil moléculaire luminal B, localement avancé, classé pT4aN3Mx. Dans le cadre du bilan d'extension, une TDM thoraco-abdomino-pelvienne et une scintigraphie osseuse ont été réalisées. Une TEP-TDM au 18F-FDG a ensuite été effectuée selon un protocole conventionnel. L'analyse a porté sur la distribution du 18F-FDG et la recherche de foyers d'hypermétabolisme osseux, avec corrélation aux données morphologiques de la TDM et aux résultats de la scintigraphie osseuse.

Résultats : La TDM thoraco-abdomino-pelvienne et la scintigraphie osseuse n'ont pas objectivé de localisation osseuse secondaire. En revanche, la TEP-TDM au 18F-FDG a mis en évidence plusieurs foyers d'hypermétabolisme pathologique au niveau du sternum, gril costal, deux omoplates, rachis dorso-lombaire, bassin et sacro-iliaques sans anomalie morphologique évidente sur les coupes TDM correspondantes. Ces foyers, de distribution multifocale étaient fortement suspects de localisations osseuses secondaires. Cette discordance entre l'imagerie métabolique et les examens conventionnels suggère une atteinte osseuse à un stade infra-radiologique.

Conclusion : Ce cas illustre la capacité de la TEP-TDM au 18F-FDG à révéler une atteinte osseuse métaboliquement active avant l'apparition d'anomalies morphologiques ou d'une réaction ostéoblastique.

ABSTRACT N° 23 • POSTER

I-13118/F-FDG Flip-Flop Phenomenon and Discordance Between 99mTc-MDP Bone Scintigraphy and 18F-FDG PET/CT in Metastatic Papillary Thyroid Carcinoma

MOUCHIRA DJELAILIA - PR OTMANE

Theme: Nuclear Imaging (SPECT, PET) • Presenting author: Mouchira Djelailia (Resident)

Background
The flip-flop phenomenon in differentiated thyroid carcinoma refers to the inverse relationship between radioiodine avidity and 18F-FDG uptake, reflecting progressive tumor dedifferentiation. As iodine avidity decreases, glucose metabolism may increase. Bone metastases may further demonstrate discordant findings between metabolic activity and osteoblastic response.
Case Presentation
We report the case of a 53-year-old woman with metastatic papillary thyroid carcinoma (pT4N1M1), previously treated with five courses of radioactive iodine (I-131) therapy, presenting with elevated thyroglobulin levels and recent radiological progression. Whole-body 99mTc-MDP bone scintigraphy with SPECT/CT showed heterogeneous skeletal uptake, mainly attributed to degenerative changes, without convincing evidence of bone metastases. In contrast, 18F-FDG PET/CT demonstrated extensive hypermetabolic metastatic disease involving cervical and mediastinal lymph nodes, both lungs, and the brain. A particularly striking finding was an osteolytic lesion of the right iliac wing with intense FDG uptake (SUVmax 41.21), despite the absence of a corresponding suspicious focus on 99mTc-MDP bone scintigraphy. These findings illustrate the flip-flop phenomenon, with increased tumor glucose metabolism despite reduced radioiodine avidity, together with a marked FDG/MDP imaging discordance at the skeletal level.
Discussion
The two radiopharmaceuticals provide complementary biological information:
• I-131 - thyroid differentiation and iodine avidity
• 18F-FDG - tumor glucose metabolism
• 99mTc-MDP - osteoblastic bone remodeling.
The I-131/FDG flip-flop phenomenon reflects a shift from differentiated, iodine-avid disease toward more metabolically active and potentially less differentiated tumor tissue. In bone, predominantly osteolytic metastases may show intense FDG uptake without significant MDP accumulation, because their osteoblastic response is limited.
Conclusion
This case highlights the diagnostic value of recognizing the I-13118/F-FDG flip-flop phenomenon and the complementary role of 18F-FDG PET/CT in detecting metabolically active disease.
A negative 99mTc-MDP bone scintigraphy does not exclude skeletal metastasis, particularly in predominantly osteolytic lesions. Correlation with CT morphology and 18F-FDG PET/CT is therefore essential for accurate assessment of bone involvement in metastatic papillary thyroid carcinoma.

ABSTRACT N° 24 • POSTER

Être médecin nucléaire en Algérie : Entre vocation et réalité

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Theme: Nuclear Imaging (SPECT, PET) • Presenting author: fethallah isnasni (Physician) • Keywords: Médecine nucléaire , Formation médicale ,Carrière , Résidents , Algérie

Introduction :
La médecine nucléaire en Algérie connaît un essor majeur, mais reste confrontée à des défis organisationnels et démographiques. Les données sur les aspirations professionnelles et l'équilibre de vie des jeunes médecins algériens dans cette spécialité sont rares. Cette étude vise à évaluer les choix de carrière, les défis académiques et l'impact de la vie personnelle chez les résidents et les praticiens en médecine nucléaire en Algérie.
Matériel & Méthodes :
Une étude transversale descriptive a été menée via un questionnaire anonyme, diffusé auprès des résidents en formation et des médecins spécialistes en médecine nucléaire exerçant en Algérie. Le sondage explorait les données démographiques, les projets professionnels (secteur public/privé, universitaire), la charge de travail et la perception de l'équilibre vie professionnelle/vie personnelle. Les réponses ont été collectées analysées par statistiques descriptives.
Résultats :
Les résultats préliminaires seront présentés et discutés. Ils permettront de décrire les tendances générales concernant les choix de carrière des participants, leurs aspirations académiques et leur perception de l'équilibre entre vie professionnelle et vie personnelle. Une attention particulière sera portée aux différences entre les résidents et les praticiens, ainsi qu'aux éventuelles disparités liées au genre, notamment en ce qui concerne la maternité et la progression de carrière. Les données mettront en lumière les principaux défis rapportés par les médecins nucléaires algériens dans leur parcours professionnel
Conclusion :
Cette enquête met en lumière les aspirations et les difficultés des médecins nucléaires algériens. Des disparités persistent entre les projets de carrière et les contraintes personnelles. Ces résultats soulignent la nécessité de politiques de ressources humaines adaptées pour favoriser la formation, la recherche et un meilleur équilibre de vie, afin de fidéliser les talents et assurer la pérennité de la spécialité en Algérie.

ABSTRACT N°25 • POSTER

Multifocal Bone Involvement in Rosai-Dorfman Disease Revealed by SPECT/CT Bone Scintigraphy: A Case Report

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Theme: Nuclear Imaging (SPECT, PET) • Presenting author: Mohammed elhadi MEBREK (Resident) • Keywords: Rosai-Dorfman disease; non-Langerhans cell histiocytosis; bone scintigraphy; SPECT/CT; long bones

Introduction
Rosai-Dorfman disease (RDD) is a rare non-Langerhans cell histiocytosis. About 40% of patients have extranodal involvement, but bone involvement is uncommon (fewer than 10% of cases). Its non-specific presentation often delays diagnosis. We report a case in which multifocal bone involvement was detected by SPECT/CT bone scintigraphy.

Case presentation
A 31-year-old man was referred for staging of a suspected skin malignancy. He had a painless, erythematous, nodular left periauricular mass that appeared 8 months earlier and grew progressively, together with lesions of the left shoulder and left flank. He had no other complaints and laboratory tests were normal. Thoraco-abdomino-pelvic CT showed a multifocal mixed bone lesion complex (proximal femurs, left upper humerus, right scapula), suggesting histiocytosis or a hematological disorder. Bone scintigraphy was performed 3 hours after injection of 20 mCi of 99mTc-HMDP (whole-body acquisition, then SPECT/CT).

Results
Planar images showed multiple metaphyseal foci of increased uptake, varying in size and intensity: right acromion, upper end of the left humerus, upper ends of both femurs, lower end of the right femur, upper end of the left tibia and right ankle. SPECT/CT showed that the foci in the trochanteric regions and the right femoral head corresponded to lytic lesions surrounded by sclerosis, with focal cortical disruption. The knees showed a similar pattern with smaller lesions. This pattern suggested a non-Langerhans cell histiocytosis, which skin biopsy confirmed (CD68+, S100+, CD1a−). RDD was diagnosed on the basis of combined radiological, clinical and pathological findings.

Discussion
In RDD, bone involvement mainly affects the long bones, with a metaphyseal-diaphyseal distribution and possible epiphyseal extension, as in our case (right femoral head involvement). Increased uptake reflects active inflammation and increased bone remodeling. Scintigraphy helps direct investigations, guide the biopsy site and monitor the disease, while SPECT/CT clarifies the nature of the lesions. The two main differential diagnoses are Langerhans cell histiocytosis and Erdheim-Chester disease. The former mainly affects the skull, mandible, ribs and spine, with well-defined osteolysis and marked cortical destruction; the location of the lesions and the perilesional sclerosis in our case argued against it. The latter causes bilateral, symmetrical involvement of the lower-limb long bones, metaphyseal-diaphyseal with sparing of the epiphyses, diffuse osteosclerosis and intense symmetrical uptake that is almost pathognomonic; the osteolytic pattern and epiphyseal involvement in our case argued against it. 18F-FDG PET/CT can mimic malignancy but remains useful for staging. The diagnosis remains histological and the course is usually favorable.

Conclusion
RDD should be considered in the presence of multifocal osteolytic lesions of the long bones, even without bone symptoms. SPECT/CT characterizes these lesions, assesses their extent and points toward a histiocytosis, whose diagnosis relies on histology.

ABSTRACT N° 28 • POSTER

L'intérêt pratique de la scintigraphie aux hématies marquées dans la recherche de splénose : à propos d'un cas

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Theme: Nuclear Imaging (SPECT, PET) • Presenting author: Narimene CHIALI (Resident) • Keywords: Splénose

Introduction :
La splénose correspond à l'implantation ectopique de tissu splénique fonctionnel, le plus souvent à la suite d'une splénectomie ou d'un traumatisme splénique. Elle constitue une entité bénigne pouvant simuler, en imagerie morphologique, une récidive tumorale, une adénopathie ou une fibrose postopératoire. La scintigraphie aux hématies autologues marquées permet de mettre en évidence le tissu splénique fonctionnel grâce à sa capacité de séquestration des hématies, offrant ainsi un complément fonctionnel aux techniques d'imagerie anatomique.

Matériels et méthodes :
Nous rapportons le cas d'un patient âgé de 55 ans, ayant comme antécédent une néoplasie de la queue du pancréas traitée en 2025 par spléno-pancréatectomie caudale. Dans le cadre de la surveillance, l'imagerie a mis en évidence un nodule tissulaire au niveau de la loge de splénectomie, faisant suspecter une éventuelle splénose. Cependant, l'IRM ne permettait pas de différencier avec certitude ce nodule d'un processus fibreux postopératoire. Une scintigraphie aux hématies autologues marquées a donc été réalisée afin de rechercher du tissu splénique fonctionnel ectopique.

Résultats :
La scintigraphie a montré un aspect compatible avec un foyer de tissu splénique fonctionnel au niveau de la loge de splénectomie, avec séquestration des hématies marquées, en faveur d'une splénose. Aucune autre localisation scintigraphiquement décelable de tissu splénique ectopique n'a été mise en évidence.

Discussion :
La distinction entre splénose et lésions postopératoires peut être difficile sur les seules données morphologiques, particulièrement chez les patients ayant un antécédent néoplasique. La scintigraphie aux hématies marquées apporte une information fonctionnelle spécifique en démontrant la capacité du tissu splénique ectopique à séquestrer les hématies. Dans ce contexte, elle peut permettre de confirmer une splénose lorsque l'IRM ou les autres modalités morphologiques restent indéterminées, et ainsi contribuer à éviter des explorations invasives ou une intervention chirurgicale inutile.

Conclusion :
La scintigraphie aux hématies autologues marquées constitue un outil fonctionnel pertinent dans le diagnostic de splénose, notamment chez les patients splénectomisés présentant un nodule indéterminé dans la loge de splénectomie. Dans notre cas, elle a permis de confirmer le caractère splénique fonctionnel du nodule et de retenir le diagnostic de splénose.

ABSTRACT N° 29 • POSTER

Optimization of Scintigraphic Examinations in Nuclear Medicine: From Clinical Justification to Image Quality, Artifact Control, and Patient Safety

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Theme: Nuclear Imaging (SPECT, PET) • Presenting author: ROUMAISSA BENABDERRAHMANE (Resident) • Keywords: Keywords: Nuclear medicine; scintigraphy; optimization; image quality; artifacts; quality control; radiation protection; SPECT/CT; PET/CT.

Background: Optimization in nuclear medicine cannot be reduced to lowering the administered activity. It is a continuous clinical and technical process extending from examination justification and patient preparation to radiopharmaceutical selection, acquisition, reconstruction, interpretation, quality assurance, and clinical audit. Failure at any stage may compromise diagnostic accuracy, increase avoidable radiation exposure, or lead to unnecessary repeat examinations.

Objective: To present a practical, multidisciplinary framework for optimizing scintigraphic examinations, with particular emphasis on image-quality determinants, prevention and recognition of artifacts, immediate quality assessment, and appropriate corrective actions.

Content: The presentation reviews the main physical and technical factors influencing scintigraphic image quality, including collimator selection, spatial and energy resolution, sensitivity, counting statistics, acquisition matrix, attenuation, scatter, detector uniformity, and reconstruction parameters. It also addresses patient preparation, positioning, immobilization, injection quality, acquisition timing, and adaptation of administered activity to the clinical indication, patient characteristics, and equipment performance. Common artifacts related to patient motion, attenuation, detector non-uniformity, radiopharmaceutical extravasation, field truncation, reconstruction, and hybrid-image misregistration are illustrated through comparative examples before and after optimization or correction. A structured decision pathway is proposed to determine whether an examination should be accepted, complemented, corrected, or repeated according to its diagnostic impact.

Conclusion: Optimized scintigraphy results from a coherent and traceable imaging pathway rather than the isolated adjustment of a single parameter. Integrating clinical justification, protocol standardization, immediate image review, artifact recognition, equipment quality control, and multidisciplinary collaboration improves diagnostic reliability, patient safety, reproducibility, and departmental performance.

ABSTRACT N° 31 • POSTER

Unmasking the Unknown: 99mTc-Tektrotyd SPECT/CT in Neuroendocrine Tumors of Unknown Primary.

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Theme: Nuclear Imaging (SPECT, PET) • Presenting author: Rayen Betouil (Resident) • Keywords: Neuroendocrine tumors; 99mTc-Tektrotyd; SPECT/CT; Somatostatin receptors; Primary localization; Metastases.

Introduction: Neuroendocrine tumors (NETs) are uncommon malignancies that develop from neuroendocrine cells, which most commonly occur in the gastrointestinal tract, lung, and pancreas. In a small subset of cases , the primary origin of the NET is not known. Somatostatin receptor imaging plays an important role in tumor localization and staging. 99mTc-Tektrotyd SPECT/CT provides functional imaging of somatostatin receptor expression and remains a useful diagnostic tool where somatostatin receptor PET/CT is not available.

Materials and Methods: We retrospectively evaluated 21 patients with neuroendocrine tumors (NETs) of unknown primary origin who were referred to our Nuclear Medicine Department for whole-body 99mTc-Tektrotyd scintigraphy and SPECT/CT. Demographic characteristics, clinical indications, tracer uptake patterns, and metastatic distribution were analyzed. The primary objective of this study was to evaluate the role of 99mTc-Tektrotyd SPECT/CT in detecting and localizing the occult primary tumor site, as well as in mapping and characterizing metastatic disease.

Results: Among the 21 patients, 99mTc-Tektrotyd SPECT/CT identified a suspected primary tumor site in 12 patients (57.1%), predominantly in the small intestine (42.9%) and pancreas (14.3%), while the primary site remained unidentified in 9 patients (42.9%). Metastatic disease was detected in 15 patients (71.4%), showing a marked predilection for the liver (71.4%), followed by lymph nodes (33.3%) and bones (23.8%). SPECT/CT improved anatomical localization and characterization of abnormal tracer uptake, particularly in cases with equivocal planar findings.

Conclusion: 99mTc-Tektrotyd SPECT/CT is a valuable tool in the diagnostic workup of neuroendocrine tumors of unknown primary origin, providing both primary tumor localization and assessment of metastatic disease. Despite the increasing role of PET/CT, it may represent a useful and accessible alternative for somatostatin receptor imaging, particularly in centers where PET/CT is not readily available.

ABSTRACT N° 37 • POSTER

Pitfall in Oncologic Staging: Sickle Cell-Induced Bone Regeneration Mimicking Skeletal Metastases on 99mTc-MDP SPECT/CT

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Theme: Nuclear Imaging (SPECT, PET) • Presenting author: Hadil Dorbani (Resident) • Keywords: Sickle cell disease; Bone scintigraphy; SPECT/CT; 99mTc-MDP; Skeletal metastases; Bone infarction; Diagnostic pitfalls.

Introduction:
Bone scintigraphy combined with SPECT/CT is an established modality for detecting and staging osseous metastatic disease in oncologic patients. However, various non-malignant conditions can cause elevated osteoblastic activity and mimic skeletal metastases. Sickle cell disease (SCD) is characterized by chronic, recurrent vaso-occlusive episodes causing microvascular bone ischemia, infarction, and subsequent reactive remodeling. In patients undergoing cancer workup, these benign skeletal alterations can create significant diagnostic dilemmas.

Material & Methods:
Two oncology patients underwent planar whole-body bone scintigraphy and correlative SPECT/CT utilizing Tc99m-MDP (MON.MDP Kit, Eczacıbaşı-Monrol) at our Nuclear Medicine Department:

Patient 1: A male patient with a history of Hodgkin lymphoma (treated in 2014) undergoing surveillance follow-up imaging.
Patient 2: A female patient newly diagnosed with adenosquamous carcinoma (confirmed via liver biopsy) undergoing baseline oncologic staging.
Both cases were evaluated by combining scintigraphic radiotracer biodistribution with correlative low-dose CT morphological findings and detailed reviews of patient clinical records.

Results:
In both patients, planar bone scintigraphy revealed marked, diffuse, and heterogeneous radiotracer uptake predominantly localized to the axial skeleton and anatomical regions rich in active hematopoietic red marrow. Corresponding SPECT/CT demonstrated widespread mixed osteosclerotic and osteolytic trabecular remodeling throughout the axial skeleton. While these findings initially raised strong suspicion for diffuse skeletal metastases given the oncologic backdrop, a comprehensive review of clinical records identified established underlying sickle cell disease in both individuals. The findings were definitively attributed to chronic SCD-induced osseous infarction and repair rather than metastatic disease.

Conclusion:
Chronic skeletal remodeling secondary to recurrent bone infarctions in sickle cell disease can closely mimic diffuse osteoblastic and osteolytic metastases on Tc99m-MDP bone scintigraphy with SPECT/CT. Nuclear medicine physicians and oncologists must recognize this potential diagnostic pitfall; correlation with comprehensive medical history, hematologic parameters, and prior imaging is paramount to avoid incorrect cancer staging and unnecessary invasive interventions.

ABSTRACT N° 40 • POSTER

Contribution of bone scintigraphy and SPECT/CT in the diagnosis of suspected Erdheim-Chester disease: A case report

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Theme: Nuclear Imaging (SPECT, PET) • Presenting author: MOHAMED ZAKARIA HAOUSSINE (Resident) • Keywords: Erdheim-Chester disease, histiocytosis, SPECT/CT, bone scintigraphy

Aim/Introduction:
Histiocytoses are a heterogenous group of rare disorders characterized by the abnormal proliferation and tissue infiltration of histiocytes including the skeletal system.
Erdheim-Chester disease is an exceptionally rare form of non-Langerhans cell histiocytosis classified as a clonal hematopoietic neoplasm, most commonly driven by somatic mutations in the MAPK pathway. Characterized by systemic infiltration of tissue-borne foamy CD68-positive histiocytes,Erdheim-Chester disease frequently exhibits pathognomonic bilateral, and symmetric osteosclerosis of the diaphyseal and metaphyseal regions of the long tubular bones, alongside potential retroperitoneal, cardiovascular, and central nervous system involvement.
Because clinical presentation is variable and non-specific, nuclear medicine modalities serve as key diagnostic tools in early recognition and management.
Bone scan complemented by single-photon emission computed tomography SPECT/CT plays a critical role in mapping the full extent of metabolically active skeletal lesions, identifying occult extra-osseous sites, and accurately assessing therapeutic response.

Materials and Methods:
we report the case of a 70-year-old female patient with a history of diabetes mellitus and hypertension who presents with a febrile decline in general status, elevated inflammatory markers. A neck, chest, abdomen and pelvis CT scan was performed, demonstrating hepato-splenomegaly, a hairy right kidney, fluid distension of the appendix and trabecular osteolysis in the left iliac wing suggestive of either a bone manifestation of histiocytosis or a secondary myelomatous lesion. The patient was referred to our nuclear medicine department for a bone scan.
Results: A dual-phase (early and delayed) whole-body planar bone scan coupled with SPECT/CT demonstrated osteomedullary remodeling of the humerus, lower extremities, and pelvis, consistent with active granulomatous involvement compatible with Erdheim-Chester disease.

Conclusion: This case highlights the decisive role of bone scan combined with SPECT/CT in establishing a timely diagnosis of Erdheim-Chester disease. Its high sensitivity in identifying symmetric long-bone involvement allows for prompt recognition of this rare entity and provides precise guidance for diagnostic tissue sampling.

ABSTRACT N° 42 • POSTER

Hiding in Plain Sight: 99mTc-MIBI SPECT/CT Unmasks Ectopic Parathyroid Adenomas Missed by Ultrasound

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Theme: Nuclear Imaging (SPECT, PET) • Presenting author: Abdelatif Djendi (Resident)

Background: Ectopic parathyroid tissue accounts for 15–20% of hyperfunctioning parathyroid lesions. Because ectopic adenomas frequently lie outside the cervical thyroid bed, conventional ultrasound can be anatomically limited, delaying diagnosis and increasing the risk of severe hypercalcemic target-organ damage. This study evaluates the diagnostic performance and anatomical spectrum of 99mTc-MIBI SPECT/CT in ectopic hyperparathyroidism.

Methods: We retrospectively reviewed 11 consecutive patients (9 females, 2 males; mean age 56.7 ± 17.2 years) diagnosed with ectopic parathyroid disease (9 primary, 1 secondary, 1 tertiary). Clinical presentation, biochemical profiles (PTH, serum calcium), cervical ultrasound, and dual-phase 99mTc-MIBI SPECT/CT imaging were analyzed.

Results: Biochemical & Clinical Severity: Patients presented with severe hyperparathyroidism (mean PTH: 750.1 pg/mL; mean calcium: 112.7 mg/L). Target-organ complications included recurrent nephrolithiasis, severe osteoporosis with pathological fractures, and acute pancreatitis.

Anatomical Distribution: SPECT/CT localized ectopic glands across four main regions: retrosternal/superior mediastinal (n=6, 54.5%), para-esophageal (n=2, 18.2%), sternoclavicular/suprasternal (n=2, 18.2%), and posterior mediastinum (n=1, 9.1%).

Diagnostic Performance: Cervical ultrasound was negative or inconclusive for ectopic lesions in 80% of evaluated cases (810/). In contrast, 99mTc-MIBI SPECT/CT achieved a 100% detection rate (1111/), providing exact 3D anatomical localization.

Cohort Size: 11 Patients - SPECT/CT Accuracy: 100% (1111/) - Ultrasound Failure: 80% (810/) - Most Common Site: Retrosternal (54.5%)

Conclusion: This series underscores Nuclear Medicine as an irreplaceable pillar in complex parathyroid disease. Although cervical ultrasound remains an excellent first-line tool for orthotopic neck lesions, its acoustic reach is inherently limited when lesions migrate into extra-cervical or deep mediastinal spaces. By combining hyperfunctioning functional uptake with precise hybrid 3D anatomical mapping, 99mTc-MIBI SPECT/CT bridges this diagnostic gap—preventing futile neck explorations and directly guiding targeted, minimally invasive surgery.

ABSTRACT N° 45 • POSTER

Apport de la tomoscintigraphie myocardique dans l'insuffisance cardiaque chez le sujet jeune

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Theme: Nuclear Imaging (SPECT, PET) • Presenting author: Anès Esselimani (Resident) • Keywords: Insuffisance cardiaque ; Tomoscintigraphie myocardique ; Ischémie myocardique ; Maladie coronarienne ; Sujet jeune ; Gated-SPECT.

Introduction:
L'insuffisance cardiaque chez le sujet jeune constitue une urgence diagnostique et thérapeutique. Sa cause est principalement dominée par les cardiomyopathies génétiques, tandis que l'origine coronarienne reste rare, ce qui peut retarder le recours à la tomoscintigraphie myocardique (TSM) dans cette tranche d'âge.

La littérature décrit un large éventail d'indications de la TSM chez le sujet jeune. La recherche d'une origine ischémique, l'évaluation post IDM (recherche de viabilité myocardique et/ou suivi post-revascularisation), le bilan pré-transplantation ou préopératoire, ainsi que la recherche d'anomalies perfusionnelles liées à des affections plus spécifiques, telles que les anomalies de naissance des coronaires, les séquelles de vascularites (maladie de Kawasaki) ou l'évaluation de la cardiotoxicité (chimiothérapie ou radiothérapie).
L'objectif de ce travail est de confronter ce cadre théorique aux indications et résultats réellement observés dans notre service.
Matériel et méthodes
il s'agit d'une étude rétrospective et descriptive, menée au service de médecine nucléaire du CHU Beb El Oued, incluant l'ensemble des patients âgés de 40 ans ou moins ayant bénéficié d'une TSM durant la période 012026/12/31-2025/01/.
Ont été recueillis pour chaque patient : l'âge, le sexe, l'indication, les antécédents, les facteurs de risque cardiovasculaire (FDRcv), les données de l'épreuve d'effort, les résultats de la TSM et la FE ventriculaire gauche en Gated-SPECT.
Principales Résultats
95 patients ont été inclus (dont 60 hommes et 35 femmes ; soit un sex-ratio 1,7), d'âge moyen 35,6 ± 4,7 ans (extrêmes 1940- ans).
La principale indication était la recherche d'ischémie myocardique (86,3 %) chez des patients ayant eu de multiples FDR cv (soit 22.1%) loin devant l'évaluation post-IDM/SCA (6,3 %), post-revascularisation (3,2 %), le bilan de cardiomyopathie (3,2 %) et le bilan pré-transplantation (1,1 %). alors que des étiologies rares mais classiquement rapportées chez le sujet jeune (anomalie congénitale de naissance coronaire, phéochromocytome) ont été documentés chez 2 patients.
L'analyse des images scintigraphiques avait montré une perfusion normale dans 74,7 % des cas, une ischémie d'effort chez 12,6 % et de séquelle d'infarctus chez 14,7 %. Soit une origine coronarienne dans 27.3% ; Ces anomalies semblent croitre avec l'âge (25,0 % à 1824- ans vs 28,1 % à 3540- ans) et prédominait chez les hommes (35,0 % vs 8,6 %).
Conclusion
Bien que considérée comme rare chez le sujet jeune, la maladie coronaire ne doit pas être négligée en présence de facteurs de risque cardiovasculaires multiples, comme l'a mis en évidence notre étude. Dans ce contexte, la tomoscintigraphie myocardique (TSM) joue un rôle clé dans l'arbre décisionnel pour évaluer la perfusion myocardique et confirmer ou infirmer l'étiologie ischémique de l'insuffisance cardiaque

ABSTRACT N° 46 • POSTER

Au-delà de l'étendue de l'ischémie : intérêt des paramètres quantitatifs de la TSM dans l'identification des patients à haut risque en cas d'ischémie perfusionnelle limitée

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Theme: Nuclear Imaging (SPECT, PET) • Presenting author: HADJER LABIOD (Physician)

Introduction : La détection de l'ischémie myocardique constitue un élément essentiel dans la prise en charge des patients présentant une maladie coronarienne connue ou suspectée. La tomoscintigraphie de perfusion myocardique (TSM) permet non seulement d'évaluer la distribution et l'étendue des anomalies de perfusion, mais également d'apprécier leur retentissement fonctionnel sur le ventricule gauche.
La synchronisation des acquisitions à l'électrocardiogramme (ECG) permet une analyse simultanée de la fonction ventriculaire gauche globale et de la cinétique segmentaire. L'intégration de ces paramètres fonctionnels à l'analyse perfusionnelle conventionnelle améliore les performances diagnostiques de la TSM, notamment en termes de sensibilité, tout en fournissant des informations pronostiques complémentaires et indépendantes.

Résumé : Nous rapportons le cas de trois patients adressés au service de Médecine Nucléaire de Bab El Oued pour la recherche de l'ischémie myocardique d'effort. Bien que la scintigraphie de perfusion myocardique n'ait mis en évidence qu'une ischémie apicale peu étendue (< 3 segments / 17), l'analyse approfondie des paramètres quantitatifs associés (baisse de la fraction d'éjection à l'effort, dilatation cavitaire transitoire) a redressé le diagnostic vers une ischémie étendue sous-estimée.
L'orientation rapide vers une coronarographie a mis en évidence des sténoses coronariennes complexes et sévères. La revascularisation a été réalisée par angioplastie transluminale ou par chirurgie de pontage aorto-coronarien chez ces patients.
L'identification des anomalies fonctionnelles quantitatives peut constituer un marqueur indirect d'une ischémie sous-endocardique diffuse, potentiellement associée à une atteinte myocardique plus étendue que ne le suggère l'analyse visuelle des anomalies de perfusion.

Conclusion : Les paramètres quantitatifs non perfusionnels de la tomoscintigraphie myocardique (TSM) constituent des indicateurs de gravité majeurs. Dans nos cas, ils ont permis d'identifier une maladie coronarienne sévère et sous-estimée par la seule cartographie de. Leur intégration systématique dans l'interprétation est indispensable pour réorienter précocement ces patients vers une coronarographie et une revascularisation (angioplastie ou chirurgie).

ABSTRACT N° 47 • POSTER

Apport du SPECT/CT dans l'interprétation de la scintigraphie osseuse : étude rétrospective de 12 cas.

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Theme: Nuclear Imaging (SPECT, PET) • Presenting author: MERYEM Bouhamed (Physician) • Keywords: scintigraphie osseuse, SPECT/CT

En oncologie, la scintigraphie osseuse reste un examen de référence pour la détection des atteintes osseuses grâce à sa haute sensibilité, sa dosimétrie favorable et sa capacité à explorer l'ensemble du squelette ; mais son interprétation peut être limitée par son manque de spécificité. L'intégration du SPECT/CT permet d'améliorer la localisation anatomique et la caractérisation des foyers de fixation douteux. L'objectif de cette étude était d'évaluer la contribution du SPECT/CT dans l'interprétation diagnostique des scintigraphies osseuses.

Une étude rétrospective a été menée sur 12 patients explorés par scintigraphie osseuse réalisée au temps tardif et complétée par un SPECT/CT entre 092025/ et 102025/. Effectuée dans le cadre d'un bilan d'extension, d'évaluation, devant des douleurs osseuses suspectes ou devant des anomalies radiologiques non spécifiques. Pour chaque cas, les images planaires et SPECT/CT ont été comparé selon leur apport en localisation, en caractérisation et en impact sur la conclusion et sur la prise en charge thérapeutique.

Le SPECT/CT a permis une localisation anatomique précise des foyers dans 5cas/12 et a modifié l'interprétation diagnostique dans 7cas/12. Il a aussi permis d'identifier deux lésions dégénératives bénignes, une lésion dystrophique type dysplasie fibreuse, un méningiome calcifié, un angiome vertébral, une fracture costale. Dans un cas il a permis de mettre en évidence une lésion secondaire non visible sur le planaire, entrainant ainsi une modification de la conclusion diagnostique et évitant d'autres examens complémentaires. Il a permis ainsi de guider les décisions d'escalade thérapeutique dans 4cas/12 et de désescalade dans 6cas/12 .

En conclusion, le SPECT/CT améliore les performances diagnostiques de la scintigraphie osseuse, permettant d'accroitre la spécificité et la sensibilité notamment pour les localisations complexes ou à fixation douteuse. Il constitue un outil complémentaire essentiel à l'interprétation optimale de la scintigraphie osseuse.

ABSTRACT N° 50 • POSTER

Osteosarcoma: Bone Scintigraphy in Search of Bone Metastases and Skip Metastases

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Theme: Nuclear Imaging (SPECT, PET) • Presenting author: Sarra KACI (Resident) • Keywords: Keywords: osteosarcoma, bone scintigraphy, SPECT/CT, skip metastases, 99mTc-MDP

Introduction:
Osteosarcoma is the most common primary malignant bone tumor in adolescents and young adults, with a predilection for the metaphysis of long bones, particularly around the knee. Staging is an essential step in management. Bone scintigraphy allows the entire skeleton to be explored in a single examination, in search of secondary bone lesions and skip metastases. SPECT/CT fusion improves the localization and characterization of foci of uptake.

Case Report :
We report the case of a 16-year-old patient, followed in pediatric oncology since 2023 for a right tibial osteosarcoma. The discovery was incidental, following a pathological fracture. MRI of the right leg showed an osteolytic lesion with a malignant appearance. Pathological examination concluded to a well-differentiated high-grade osteosarcoma. The patient has been undergoing chemotherapy since November 2023 and was referred to our department for bone scintigraphy.
Protocol :
We injected 740 MBq of 99mTc-MDP by direct intravenous injection. A static whole-body scan was performed 3 hours after injection, supplemented by a SPECT/CT acquisition centered on the knees.
Results :
Scintigraphy showed an area of intense, heterogeneous radiotracer hyperuptake, with hypouptake within it, located in the metaphyseal-diaphyseal region of the upper end of the right tibia, corresponding to the primary tumor on SPECT/CT images, showed at this level an area of osteolysis with peripheral osteocondensation, associated with a break in the cortex of the upper third of the tibial diaphysis. There were no skip metastases and no secondary bone lesions at a distance.
Conclusion :
99mTc-MDP bone scintigraphy with SPECT/CT remains a test of choice for the bone staging of osteosarcoma. It characterizes the primary tumor and looks for skip metastases and distant bone metastases, which guides the therapeutic strategy.

ABSTRACT N° 51 • POSTER

When Deauville 5 Is Not Lymphoma Progression: The Role of 18F-FDG PET/CT in Detecting Intercurrent Infection in DLBCL

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Theme: Nuclear Imaging (SPECT, PET) • Presenting author: Malak Boudjadja (Resident) • Keywords: DLBCL deauville 5 tuberculosis ; Deauville 5 DLBCL interccurent tuberculosis

Introduction : 18F-FDG PET/CT is a reference tool for evaluating the therapeutic response of diffuse large B-cell lymphoma (DLBCL). However, infectious processes can also cause FDG uptake and mimic lymphomatous progression. We report a case highlighting the importance of investigating intercurrent pathology when new hypermetabolic abnormalities appear.

Material and methods: We report the case of a patient with DLBCL treated with R-CHOP-type immunochemotherapy who underwent several PET/CT scans during follow-up. An interim PET/CT performed at another center was interpreted as showing an unfavorable metabolic response, classified as Deauville 5. The successive examinations were reassessed in conjunction with the clinical, biological, and morphological findings.

Results: The interim PET/CT revealed new hypermetabolic thoracic abnormalities, initially considered potentially lymphomatous. Reassessment of the images at our center, together with the clinical and morphological findings, favored an infectious etiology, while the DLBCL remained in complete metabolic response. Pleuropulmonary tuberculosis was ultimately diagnosed. The metabolic abnormalities subsequently disappeared after initiation of antituberculous treatment.

Discussion: Because FDG uptake is not specific to tumor activity, the appearance of a new hypermetabolic lesion does not necessarily indicate lymphoma progression. Systematic correlation of clinical, morphological, and metabolic findings, together with assessment of their evolution during treatment, is essential for distinguishing tumor progression from infection. Comparative interpretation of successive examinations can also reduce errors in therapeutic response classification.

Conclusion: In patients with DLBCL, new FDG uptake should prompt investigation for intercurrent pathology before lymphomatous progression is diagnosed. An integrated, comparative, and contextualized interpretation of PET/CT scans is essential for optimizing therapeutic response assessment and avoiding inappropriate management.

Radiopharmacy

1 abstract. Radiopharmaceutical preparation, quality control and radiolabelling.

ABSTRACT N° 26 • POSTER

Implementation of a Quality Management System in Hospital Radiopharmacy Integrating ISO 9001:2015, the IAEA Operational Level 2a Framework, and the B-QUANUM Audit Methodology

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Theme: Radiopharmacy • Presenting author: Meriem AMIMOUR (Resident) • Keywords: Quality Management System; Hospital Radiopharmacy; IAEA Operational Level 2a; ISO 9001:2015; B-QUANUM

Introduction:
Hospital radiopharmacy operates at the demanding intersection of pharmaceutical science, nuclear medicine, and radiation protection. The IAEA Operational Guidance on Hospital Radiopharmacy defines progressive quality levels, of which Level 2a represents a structured and achievable target for academic nuclear medicine departments. The B-QUANUM audit instrument provides a complementary multidisciplinary audit framework anchored in patient safety, and ISO 9001:2015 supplies the management architecture for a self-correcting quality system.
Objective: To describe the full implementation of a Quality Management System (QMS) in a hospital radiopharmacy toward IAEA Operational Level 2a compliance, integrating ISO 9001:2015 and the B-QUANUM methodology,

Methods:
Following a tri-framework gap analysis (IAEA Level 2a / ISO 9001:2015 / B-QUANUM), a six-phase Gantt-structured project was conducted. A three-level documentary pyramid was built. Equipment qualification (IQ/OQ/PQ), four B-QUANUM-inspired internal audits, quality indicator monitoring, and a formal management review were completed within four months.

Results:
Thirty-eight quality documents were produced. Four internal audits identified zero critical non-conformities, eight observations, and 23 improvement tracks. Quality indicators met targets by Month 3–4: radiochemical purity ≥95%, preparation yield ≥90%, CAPA closure ≥80%, on-time delivery 97%, equipment calibration compliance 100%. Final IAEA Level 2a self-assessment: 94% compliance.

Conclusion:
A structured, integrated ISO 9001:2015 / B-QUANUM / IAEA Level 2a QMS is achievable in four months in a hospital radiopharmacy with limited human resources. This constitutes a reproducible model for academic nuclear medicine departments, particularly in resource-limited settings.

Physics & Dosimetry

8 abstracts. Nuclear physics, dosimetry, modelling, instrumentation and radiation protection.

ABSTRACT N° 7 • POSTER

Quantitative Imaging and Dosimetric Considerations in Tc-99m Bone Scintigraphy: Optimization of Administered Activity

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Theme: Physics & Dosimetry • Presenting author: sebaa ikram (Resident) • Keywords: Tc-99m MDP, bone scintigraphy, dosimetry, image quality, protocol optimisation, ALARA, weight-adapted dosing

INTRODUCTION: Tc-99m bone scintigraphy remains a cornerstone in nuclear medicine for the assessment of skeletal pathology, particularly in oncology. In routine clinical practice, a fixed administered activity (commonly around 740 MBq in adults) is widely employed for simplicity and protocol standardization. However, this approach does not account for inter-individual variability, including patient weight and body habitus, which can lead to significant differences in activity per kilogram, radiation exposure, and image quality.

OBJECTIVE:
• Quantitatively compare image quality (SNR, CNR, CTR) between weight-adapted and fixed-dose protocols
• Assess dosimetric impact using ICRP 128 effective dose coefficients for Tc-99m MDP.

MATERIALS AND METHODS: This prospective monocentric study included 131 adult patients referred for whole-body Tc-99m MDP bone scintigraphy at EHU 1st November Hospital, Oran, Algeria (2025–2026). Patients were allocated to a standard fixed-dose group (740 MBq, n=63) or a weight-adapted group following EANM/ICRP guidelines (n=68). Whole-body planar acquisitions were performed on a Siemens Symbia system. Regions of interest were placed on the sternum (anterior) and sacrum (posterior) with adjacent background ROIs.
All counts were corrected for radioactive decay to a 120-minute reference (λ=0.001919 min^{-1}). Image quality was assessed quantitatively using the Signal-to-Noise Ratio (SNR), Contrast-to-Noise Ratio (CNR), and Count-to-Background Ratio (CTR). A blinded visual quality scoring (1–4 scale) was performed by two independent nuclear medicine physicians on 30 anonymised images (15 per group). Effective dose was estimated using ICRP Publication 128 coefficients (0.0057 mSv/MBq). Statistical analysis included Mann-Whitney U test, Cohen d, and bootstrap confidence intervals (n=2000 iterations).

RESULTS: The weight-adapted group received a mean activity of 507114± MBq, representing a 31.5% reduction compared to the standard group (7403±MBq, p<0.001). Body weight was comparable between groups (71.014.5± vs 66.915.1±kg, p=0.09). No statistically significant difference was observed in SNR at the sternum (4.471.47± vs 4.321.33±, p=0.559) or sacrum (3.261.19± vs 3.220.99±, p=0.769), nor in CNR (p=0.559 and p=0.769 respectively). CTR at the sternum was significantly higher in the optimised group (11.894.14± vs 14.77+24.2% ,7.30±, p=0.007), reflecting superior bone-to-background contrast. Blinded visual scoring revealed no significant difference between groups (3.400.61± vs 3.430.63±, p=0.862, Cohen d=0.05).
The weight-adapted protocol reduced effective dose from approximately 4.2 mSv to 2.9 mSv per patient, saving ~1.3 mSv per examination and ~266 mSv collectively in a service of 200 annual bone scintigraphies.

CONCLUSION: Weight-adapted Tc-99m bone scintigraphy dosimetry is a feasible, safe, and dosimetrically justified approach that maintains diagnostic image quality while meaningfully reducing patient radiation exposure, in full alignment with the ALARA principle and international guidelines.

ABSTRACT N° 12 • POSTER

PET-Guided Therapeutic Window in Boron Neutron Capture Therapy: Local Tumor-Dose Heterogeneity and Skin-Dose Trade-offs Across the Clinical ^{18}F-FBPA Range

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Theme: Physics & Dosimetry • Presenting author: SEYF EL ISLAM ABDELMALEK (Physicist) • Keywords: PET-Guided Boron Neutron Capture Therapy, ^{18}F-FBPA, OpenMC, Dosimetry, ICRU-44 Tissue, ENDF/B-VIII.1.

Introduction: The T:N ratio of boron-10 responsible for the selective nature of the BNCT treatment is not directly determined but estimated from ^{18}F-FBPA PET standardized-uptake-value ratios. In the current work, a dosimetric model has been developed for estimation of the local tumour-selective therapeutic effect and associated skin-dose burden within the range of T:N ratios estimated from ^{18}F-FBPA PET images.

Materials and Methods: A three-shell Snyder ellipsoidal head phantom has been created in the OpenMC code (ENDF/B-VIII.1) and irradiated by digitized epithermal-neutron (C-BENS) spectrum from a cyclotron-based source. A local heterogeneous boron dose model, which contains only boron-10 within tumour sphere and its surrounding tissue, has been considered to calculate tumour-selective local therapeutic ratio (TRIocal) and scalp-to-tumour dose ratio at a grid of tumour depths (2.0 - 8.0 cm) and T:N ratios (0.5 - 5.0).

Results: TRIocal was always greater than 1 (favourable dosimetry) throughout the entire range of depths and T:N examined. Indeed, with increasing depth of tumour localization, the value of TRIocal progressively increased from approximately 4.1 at a depth of 2 cm up to its maximum of 4.34.4- at 45- cm due to the thermalization of the spectrum of neutrons. At the same time, such an increase was associated with the rapid growth of the dose burden to the scalp, whose dose-to-tumor ratio increased from 0.2 at 2 cm to 0.80.9- at 8 cm depths. The range of simulated T:N ratios cover the range of clinically reported BPA-PET biodistribution in gliomas in BPA dose-escalation and accelerator-based BNCT trials in high-grade glioma.

Conclusion: In conclusion, it should be noted that, despite the existence of the physical trade-off between better selectivity and higher skin dose burden, local tumour dosimetry in BNCT shows favourable therapeutic window through the clinically observed range of T:N.

ABSTRACT N° 15 • POSTER

Optimization of WO_3-Reinforced Epoxy Composites for Enhanced Gamma Radiation Shielding Performance

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Theme: Physics & Dosimetry • Presenting author: Ahmed Eltiaby Samir Hadhod (Physicist) • Keywords: Gamma radiation shielding; WO_3; Epoxy composites; Radiation protection; Mass attenuation coefficient; Monte Carlo simulation

Introduction: Gamma radiation shielding is essential for radiation protection in medical and nuclear applications. Conventional shielding materials can be associated with high density, toxicity, and limited flexibility. This study investigates WO_3-reinforced epoxy composites as a potential lightweight and lead-free material for gamma radiation shielding.

Material & Methods: Six epoxy-based composite samples (S0–S5) containing increasing concentrations of WO_3 were investigated, ranging from pure epoxy to 50 wt% WO_3. The mass attenuation coefficient (MAC), linear attenuation coefficient (LAC), half-value layer (HVL), mean free path (MFP), effective atomic number (Zeff), and photon energy absorption parameters were evaluated using EpiXS and MATXCOM over the investigated photon-energy range. Experimental X-ray attenuation measurements were also performed at effective photon energies of 28 and 52 keV to validate the theoretical calculations.

Results: Increasing the WO_3 content enhanced the radiation-shielding performance of the epoxy composites. The S5 composition showed the highest attenuation performance among the investigated samples. At 100 keV, the MAC increased by approximately 3.68-fold, while the HVL decreased by approximately 88.3% compared with pure epoxy. The highest attenuation performance was also observed for S5 at selected low-energy regions, including 13.81 and 59.54 keV. Experimental attenuation measurements at 28 and 52 keV showed good agreement with the theoretical calculations, with deviations within ±2.7%.

Conclusion: The results demonstrate that incorporating WO_3 into epoxy significantly improves its photon attenuation capability. The WO_3/epoxy composite, particularly the S5 formulation, shows potential as a lead-free shielding material for radiation-protection applications. The agreement between experimental and theoretical attenuation results supports the reliability of the computational assessment.

ABSTRACT N° 17 • POSTER

Assessment of Coincidence Summing Effects in HPGe Gamma-Ray Spectrometry Using Experimental Measurements and MCNP5 Simulation

HIND BENMAKRELOUF [USTHB]

Theme: Physics & Dosimetry • Presenting author: Hind BENMAKRELOUF (Physicist) • Keywords: HPGe detector; Gamma-ray spectrometry; Coincidence summing; Detector efficiency; MCNP5; Monte Carlo simulation; Radionuclide activity.

Introduction: Accurate radionuclide activity measurements are essential for reliable radiation measurements and nuclear analytical applications. In high-resolution gamma-ray spectrometry using HPGe detectors, true coincidence summing effects may occur when a radionuclide emits cascade gamma rays following its decay. These effects can modify the measured full-energy peak efficiencies and consequently affect the accuracy of radionuclide activity determination. This study investigates the coincidence summing effects associated with an Eu-152 source and evaluates their impact on gamma-ray spectrometric measurements.

Material & Methods: A cylindrical Eu-152 source was used to investigate coincidence summing effects in an HPGe gamma-ray detection system. Coincidence correction factors were determined using two experimentally measured detector efficiency curves. The experimental results were also investigated using Monte Carlo simulations performed with the MCNP5 code. The influence of coincidence summing corrections on the determination of radionuclide specific activities was evaluated for environmental radionuclides, particularly 214Bi and 137Cs.

Results: The experimental and simulated approaches demonstrated the influence of coincidence summing on the measured detector efficiency for gamma emissions associated with complex decay schemes. The application of coincidence corrections resulted in differences between the uncorrected and corrected specific activities of radionuclides emitting multiple gamma rays or cascade transitions. In contrast, for radionuclides with a single relevant gamma-emission pathway, no significant coincidence summing effect was observed. The comparison between experimental measurements and MCNP5 simulations provided a useful assessment of the detector response and coincidence correction factors.

Conclusion: Coincidence summing effects can significantly influence the accuracy of quantitative gamma-ray spectrometry when radionuclides with complex decay schemes are measured using HPGe detectors. Appropriate coincidence corrections are therefore important for reliable radionuclide activity determination. The combination of experimental measurements and MCNP5 Monte Carlo simulations provides an effective approach for characterizing detector efficiency and improving the accuracy and reliability of gamma-ray spectrometric measurements, with relevance to equipment performance and quality assurance in nuclear radiation measurements.

ABSTRACT N° 33 • POSTER

Evaluation of the Samarium Isotopic Chain for the (n,γ) Reaction at 25 keV Using ENDF, JENDL and EXFOR Data for Medical Applications

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Theme: Physics & Dosimetry • Presenting author: Imane TRABELSI (Physicist) • Keywords: Samarium isotopes; neutron capture; reaction; 25 keV; ENDF JENDL and EXFOR

Introduction: Accurate neutron-induced reaction data are essential for reliable neutron transport calculations, activation studies, dosimetry, and the development of nuclear and medical applications. In this work, the samarium isotopic chain is investigated with particular emphasis on the neutron capture (n,γ) reaction at an incident neutron energy of 25 keV.

Material & Methods : The neutron capture cross sections of the samarium isotopes are evaluated and compared using three major evaluated nuclear data libraries: ENDF and JENDL. The evaluated results are also compared with the experimental data available in the EXFOR database in order to assess the consistency and reliability of the different evaluations.

Results: Particular attention is given to the differences between the evaluated datasets and the experimental measurements at and around 25 keV. The comparison allows the identification of agreements, discrepancies, and possible uncertainties in the nuclear data for the samarium isotopic chain. These differences are important for neutron transport and activation calculations, particularly when samarium-containing materials or isotopes are considered. The results are discussed in relation to potential medical applications, including neutron-based dosimetry, activation analysis, and applications involving samarium isotopes. The comparison with EXFOR experimental data provides an important validation of the evaluated nuclear data and contributes to identifying the datasets that provide the most consistent description of the neutron capture process in the investigated energy region.

Conclusion: This study highlights the importance of combining evaluated nuclear data libraries with experimental measurements to improve the reliability of neutron-induced reaction data for computational and medical applications.

ABSTRACT N° 34 • POSTER

Quand la gestion des déchets devient un véritable outil de radioprotection Deux ans de traçabilité et d'amélioration continue en médecine nucléaire CHU BEO

MOUAS DALILA — EL OUEDJDI TALET F , ZINSOU F, AMIMOUR A

Theme: Physics & Dosimetry • Presenting author: MOUAS DALILA (Physician) • Keywords: Déchets radioactifs; Radioprotection; Traçabilité; Amélioration continue; Médecine nucléaire.

Introduction : En médecine nucléaire, la gestion des déchets radioactifs constitue un enjeu de radioprotection nécessitant une organisation rigoureuse et une traçabilité fiable. Au-delà de l'exigence documentaire, la traçabilité peut constituer un véritable outil de suivi des pratiques et d'amélioration continue. Nous rapportons l'expérience de notre service après deux années de travail consacré à la structuration et au renforcement du circuit de gestion des déchets radioactifs.

Méthodes : Une démarche progressive d'amélioration a été mise en œuvre, impliquant l'ensemble du personnel, chacun à son niveau de responsabilité. Elle a reposé sur la réorganisation du lieu de stockage et sur une identification plus structurée des déchets selon le radioélément, la date de production répartis ainsi en lots. La production des déchets a été tracée afin d'assurer un suivi depuis leur production jusqu'à leur sortie. Un contrôle bimensuel du stock a également été instauré, comprenant le comptage des déchets présents et la confrontation aux données consignées dans le registre. Les contrôles sont eux-mêmes tracés afin de permettre un suivi dans le temps.

Résultats : Cette démarche a permis de faire évoluer progressivement l'organisation de la gestion des déchets vers un circuit davantage structuré et contrôlable. La traçabilité des productions et l'organisation du stockage ont facilité l'identification des déchets et le suivi des stocks. Le contrôle bimensuel a permis de confronter régulièrement les données documentaires à la réalité du stock et de repérer les éventuels écarts nécessitant une action corrective. Cette évolution repose sur une implication collective et sur un travail continu associant rigueur, persévérance et réévaluation des pratiques.

Conclusion :
Ce qui est tracé peut être suivi ; ce qui est suivi peut être amélioré. Notre expérience montre que la gestion des déchets radioactifs peut dépasser le cadre d'une simple obligation de traçabilité pour devenir un véritable outil de radioprotection. La combinaison d'une responsabilité collective, d'une traçabilité systématique et d'un contrôle régulier permet d'objectiver les pratiques, de suivre les flux et de soutenir une démarche d'amélioration continue. Deux années de travail ont ainsi permis d'inscrire progressivement la gestion des déchets dans une véritable culture de radioprotection.

ABSTRACT N° 36 • POSTER

Pratiques de Radioprotection & Débits de Dose Externe après IRAthérapie à l'131Iode des Cancers Thyroïdiens Différenciés au CHU de Bab El Oued – Hôpital Mohamed Lamine Debaghine en 2026

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Theme: Physics & Dosimetry • Presenting author: Fréjuste AGBOTON (Resident) • Keywords: Carcinome différencié de la thyroïdien (CDT), IRAthérapie, Iode-131 (131I), Débit de Dose Externe (DDE)

Introduction: L'IRAthérapie à l'Iode-131 (131I) constitue un traitement majeur du Cancer Différencié de la Thyroïde (CDT). Du fait de son émission gamma, le patient demeure temporairement une source d'exposition pour son entourage, justifiant des mesures de radioprotection et un contrôle du Débit de Dose Externe (DDE) avant la libération. La demi-vie effective du 131I, qui conditionne notamment la durée de séjour et l'exposition potentielle des proches, est toutefois peu documentée en conditions de routine. Cette étude décrit les pratiques de radioprotection et la cinétique du DDE dans le Service de Médecine Nucléaire.

Objectif: Décrire les pratiques de radioprotection après irathérapie au 131I, caractériser la décroissance du DDE, estimer la demi-vie effective et évaluer la dose potentiellement reçue par l'entourage.

Matériel et méthodes: Étude rétrospective, descriptive et analytique réalisée au Service de Médecine Nucléaire du CHU de Bab El Oued – Hôpital Mohamed Lamine Debaghine, incluant les patients traités par 131I pour CDT au cours du premier trimestre 2026. Parmi 156 patients traités, 113 ont été inclus, 43 ayant été exclus en l'absence d'au moins deux mesures de DDE horodatées. Les DDE ont été mesurés à 1 m du patient à l'aide du dispositif fixe de contrôle du Service. La demi-vie effective a été estimée à partir des mesures successives selon un modèle mono-exponentiel. La dose potentiellement reçue par un proche a été estimée par intégration de la décroissance après la sortie.

Résultats: La population était majoritairement féminine (86,7 %), avec un âge médian de 40 ans ; 94,7 % des patients présentaient un carcinome papillaire et 94,7 % n'avaient pas de métastases à distance. Les activités administrées étaient de 30, 100 ou 150 mCi. Le Service applique une procédure structurée de radioprotection comprenant l'information du patient, l'hospitalisation en chambre protégée pour les activités élevées, le contrôle systématique du DDE avant sortie et la remise de consignes écrites. Le seuil de libération retenu était de 25 µSv/h à 1 m, atteint chez 98,2 % des patients à la sortie. La demi-vie effective médiane du 131I était de 13,2 heures (IQR : 9,4–16,9), avec une bonne concordance entre les estimations à deux et trois points. La dose potentiellement reçue par un proche était inférieure à 1 mSv dans la grande majorité des cas. Aucun facteur biologique disponible n'était identifié comme déterminant indépendant de la cinétique d'élimination.

Conclusion: Cette étude montre une application rigoureuse des mesures de radioprotection après irathérapie, associée à une demi-vie effective du 131I comparable aux données internationales. L'évaluation systématique du DDE permet une libération sécurisée des patients. L'intégration prospective de paramètres tels que la fonction rénale et la masse corporelle pourrait contribuer à mieux individualiser la durée de surveillance et les recommandations de radioprotection.

ABSTRACT N° 09 • POSTER

Padé Reconstruction and Breakup Sensitivity Analysis of the 70Ge(α,2n)72Se Excitation Function Using TALYS-2.2

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Theme: Nuclear Imaging (SPECT, PET) • Presenting author: Douha ELFARRA (Physicist) • Keywords: 72Se/72As, PET, TALYS-2.2, EXFOR, alpha induced.

IIntroduction : 72Se is the parent radionuclide of 72As, a promising candidate for positron emission tomography (PET). This study compares theoretical predictions obtained with TALYS‑2.2 to experimental data and a Padé [22/] reconstruction based on 65 measured points. In addition, the influence of breakup sensitivity was investigated to assess its impact on the calculated excitation function.

Methodology : Experimental cross‑section data were retrieved from the EXFOR database and reconstructed using a Padé [22/] approximation to provide a smooth representation of the excitation function. Simulations were then performed with the nuclear reaction code TALYS‑2.2, incorporating a breakup sensitivity study to evaluate the role of projectile breakup. The reconstructed experimental data and theoretical results were compared to quantify the effect of breakup treatment.

Results : The TALYS‑2.2 calculations successfully reproduce the threshold and peak regions of the excitation function. Breakup treatment significantly modifies the predicted results, indicating a redistribution of reaction flux during α‑induced reactions.

Conclusion : This work highlights the importance of breakup sensitivity in modeling α‑induced nuclear reactions and demonstrates the effectiveness of Padé reconstruction in complementing experimental data. The findings contribute to improved predictive accuracy for radionuclide production relevant to medical imaging.

Artificial Intelligence

1 abstract. Radiomics, machine learning and computer-assisted interpretation.

ABSTRACT N° 27 • POSTER

AI-Assisted Automatic Extraction of Time–Activity Curves and Compartmental Modeling in Dynamic Renal Scintigraphy

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Theme: Artificial Intelligence • Presenting author: KIOUKIOU Aissa (Physicist) • Keywords: Dynamic renal scintigraphy, deep learning, U-Net, Time-Activity Curve, compartmental modeling, nuclear medicine

ntroduction:
Dynamic renal scintigraphy is a key nuclear medicine technique for assessing renal perfusion, function, and urinary drainage. Its quantitative analysis relies on manual delineation of renal regions of interest (ROIs) to extract Time-Activity Curves (TACs), which is time-consuming and operator-dependent. This work presents an AI-assisted framework for automatic TAC extraction and kinetic analysis.

Material & Methods:
A multi-center dataset of 232 studies (an open-source database and two clinical centers, acquired on Siemens and GE Healthcare gamma cameras, covering normal and pathological cases) was preprocessed with temporal binning and phase cross-correlation motion correction. Dynamic acquisitions were condensed into 128x128 three-channel temporal RGB images encoding the perfusion, uptake, and excretion phases, and used to train a U-Net for kidney segmentation. The extracted TACs were fitted with analytical, biexponential, and a proposed two-compartment cortex-pelvis model. Tmax, T12/, and split renal function (SRF) were derived automatically and compared with GE Xeleris and Siemens syngo workstations on two representative cases.

Results:
The U-Net reached a validation Dice coefficient of approximately 0.81 and, on anatomically visible kidneys, a 95th-percentile Hausdorff distance of 2.59 +/- 0.96 px (left) and 2.86 +/- 0.74 px (right). The two-compartment model reproduced plateau-shaped curves and pelvic retention that single-compartment models cannot. SRF differed by less than 1% from the commercial workstations (0.4% and 0.9%), while larger T12/ differences appeared in kidneys with delayed drainage, consistent with model-based rather than empirical estimation.

Conclusion:
Combining deep learning-based segmentation with compartmental modeling enables automated, reproducible, and vendor-independent quantitative renography, reducing operator dependency while preserving clinically relevant functional parameters.

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