



SDS LIFE SCIENCES PVT. LTD.
RADIOPHARMACY SOLUTIONS

NEWSLETTER



NEWS AND RESEARCH

New deep learning method aids in the accurate diagnosis of parkinsonian diseases

22 - JUNE - 2022

A new deep learning method has been created to aid in the diagnosis of parkinsonian diseases, according to research published ahead of print by The Journal of Nuclear Medicine. Using a 3D deep convolutional neural network to extract deep metabolic imaging indices from 18F-FDG PET scans, scientists can effectively differentiate between Parkinson's disease and other parkinsonian syndromes, such as multiple system atrophy and progressive supranuclear palsy. Parkinson's disease is one of the most common neurodegenerative disorders. According to the Parkinson's Foundation, more than 10 million people worldwide live with the disease. Accurate diagnosis of Parkinson's disease is often a challenge; particularly in the early stages; as its symptoms overlap considerably with those of other atypical parkinsonian syndromes.

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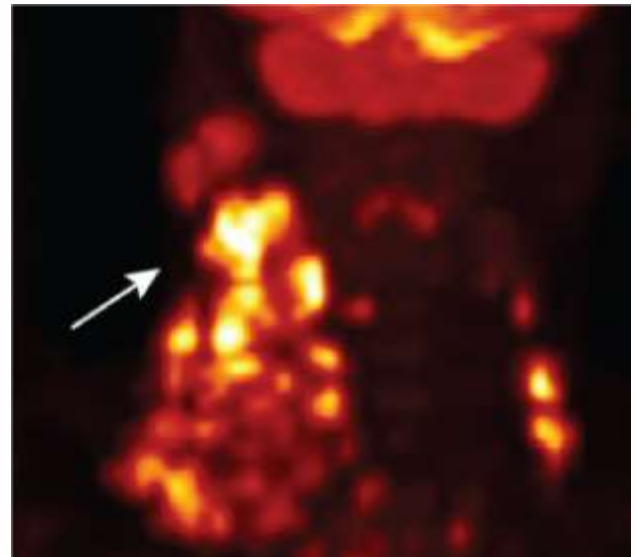
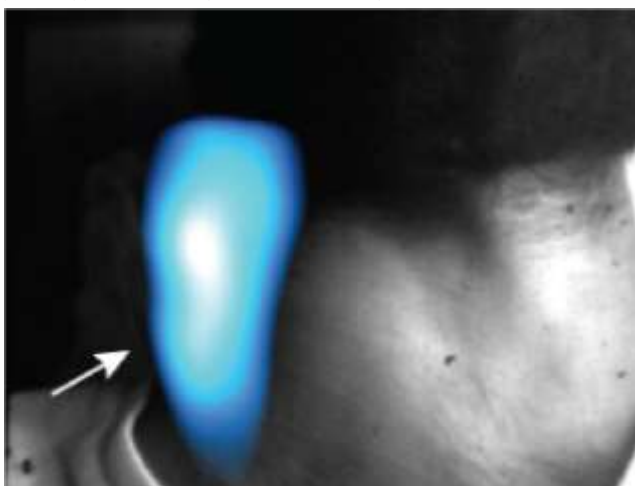
A new nuclear imaging prototype detects tumors' faint glow

18 - JUNE - 2022

A type of light commonly observed in astrophysics experiments and nuclear reactors can help detect cancer. In a clinical trial, a prototype of an imaging machine that relies on this usually bluish light, called Cerenkov radiation, successfully captured the presence and location of cancer patients' tumors, researchers report April 11 in *Nature Biomedical Engineering*. When compared with standard scans of the tumors, the Cerenkov light images were classified as "acceptable" or higher for 90 percent of patients, says Magdalena Skubal, a cancer researcher at Memorial Sloan Kettering Cancer Center in New York City. CLI images aren't as precise as those from PET/CT scans. But CLI could be used as an initial diagnostic test or to assess the general size of a tumor undergoing treatment, says study coauthor Edwin Pratt, also of Memorial Sloan Kettering Cancer Center.

The findings strengthen the case for the technology as a promising low-cost alternative that could expand access to nuclear imaging in hospitals, says Antonello Spinelli, a preclinical imaging scientist at Experimental Imaging Centre in Milan, Italy, who was not involved in the research.

<https://www.sciencenews.org/article/nuclear-imaging-prototype-tumors-glowcerenkov-light>



Minister inaugurates nuclear medicine department at PSG Hospitals

16 - JUNE - 2022

Health Minister Ma. Subramanian on Saturday inaugurated the Department of Nuclear Medicine at PSG Hospitals in Coimbatore, which is equipped with state-of-the-art equipment for diagnosing cancer and other diseases.

A release said that the Minister inaugurated the department in the presence of Managing Trustee of PSG and Sons Charities L. Gopalakrishnan, Chairman of PSG and Sons Charities G.R. Karthikeyan, Director of PSG Super Specialty Hospitals J.S. Bhuwaneshwaran and Coimbatore Corporation

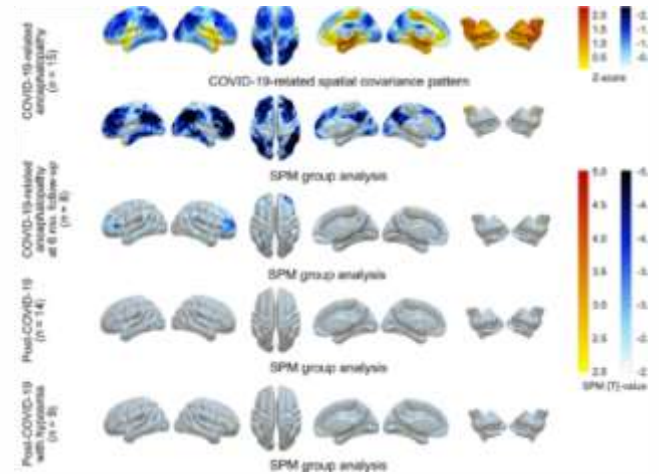
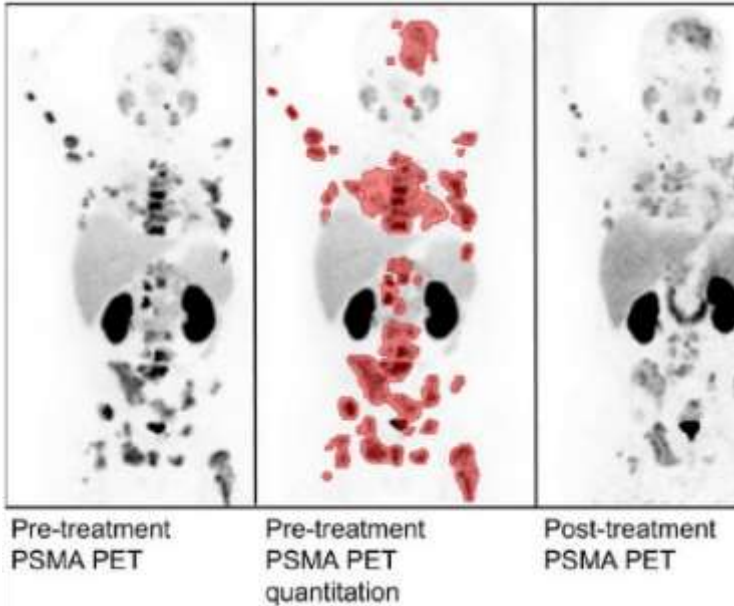
Commissioner Raja Gopal Sunkara. The Department of Nuclear Medicine is equipped with hybrid PET-CT system from Siemens and dual-head gamma camera SPECT system from Siemens Evo Excel. PET-CT or Positron Emission Tomography – Computed Tomography is a non-invasive hybrid imaging procedure, which is used for diagnosing a wide array of ailments including various types of cancers along with cardiac and neurological disorders. A whole body PET-CT scan will help in avoiding multiple scans and is a cost-effective option for patients, the release said.

New Radionuclide Combination Therapy Safe and Effective in Metastatic Prostate Cancer

Patients

06 - JUNE - 2022

A novel nuclear medicine combination therapy has been proven safe and effective in men with heavily pre-treated metastatic castration-resistant prostate cancer (mCRPC). The therapy, which combines the newly FDA-approved radionuclide therapy ¹⁷⁷Lu-PSMA-617 with a radiosensitizer known as idronoxil (NOX66), reduced prostate specific antigen (PSA) levels by more than 50 percent in a significant number of patients, resulting in a median overall survival of 19.7 months. The study included 56 men with progressive mCRPC who were previously treated with chemotherapy and novel androgen signaling inhibitors (ASI), a type of hormonal therapy. Patients received up to six doses of ¹⁷⁷Lu-PSMA-617 in combination with varying doses of NOX66. After a median follow-up of 21.8 months, 86 percent of patients saw a decline in PSA levels, and nearly two-thirds of them had a PSA level decline of more than 50 percent.



Molecular Imaging Uncovers Effects of COVID-19 on the Brain

04 - JUNE - 2022

Neurological symptoms are present in roughly two-thirds of hospitalized COVID-19 patients. Symptoms include fatigue, loss of smell, attention problems and memory loss. Patients who have more severe COVID-19 cases, are older, or have pre-existing conditions are more likely to experience these neurological issues.

Molecular imaging with PET or SPECT has been used to determine how COVID-19 affects the brain; however, these scans often show conflicting results. To make sense of the data, researchers conducted a comprehensive, systematic and critical review of molecular imaging studies in neuropsychiatric COVID-19 cases.

Their report was structured according to neurological symptoms and how they developed over time. The five symptoms included in the report were encephalitis, Parkinsonism and other neurodegenerative diseases, focal symptoms/lesions, encephalopathy, and post-COVID-19 syndrome. This helped the researchers to understand potential underlying (and most likely diverse) causes of the symptoms and to unravel discrepancies in the PET and SPECT literature.

Novartis Announces Temporary Halt in Production of Lutathera and Pluvicto

05 - JUNE - 2022

On May 5, Novartis announced that it will suspend production of Lutathera and Pluvicto at its radioligand therapy production sites in Ivrea, Italy, and Milburn, New Jersey, affecting both commercial and clinical trial supply. The voluntary shutdown is a response to potential quality issues, “out of an abundance of caution,” Novartis said. The company expects that the issues will be resolved within six weeks, at which point production will gradually resume.

One of the drugs, Pluvicto, was approved by the U.S. Food and Drug Administration (FDA) on March 23 to treat metastatic castrationresistant prostate cancer (mCRPC). The therapy, developed after years of extensive research, was shown to reduce the risk of death by 38 percent and reduce the risk of progression by 60 percent in mCRPC patients.

The other drug, Lutathera, was approved by the FDA in early 2018 for the treatment of somatostatin receptor positive gastroenteropancreatic neuroendocrine tumors (GEP-NETs).

Novartis hopes to have an update within the next 2-4 weeks.



Active Brown Adipose Tissue Protects Against “Pre-Prediabetes”

03 - JUNE - 2022

In a prospective study of young, lean adults, PET/CT imaging revealed that higher levels of active brown adipose tissue (also known as “brown fat”) are more prevalent in individuals who exhibit very early indications of metabolic disorders. Published ahead of print in *The Journal of Nuclear Medicine*, the study suggests that active brown fat is recruited to counteract “pre-prediabetic” states, potentially serving as a first-line protective mechanism against very early metabolic or hormonal abnormalities. Brown fat is a type of fat that is activated when a person gets cold, producing heat to warm the body. The presence of brown fat was initially recognized on oncologic FDG PET/CT scans, which are now the most commonly used technique for the in vivo detection of brown fat. Studies using PET with FDG and/or other fatty-acid tracers have demonstrated that brown fat consumes glucose and fatty acids, making it a potential target for the treatment of obesity and other metabolic disorders. Thirty-four healthy adult volunteers between the ages of 18 and 35 and with a body mass index (BMI) between 18 and 25 were enrolled in the study. Blood samples were taken, and lifestyle interviews were performed.