



FOR IMMEDIATE RELEASE

Media Contacts:

David Patti
JFK Communications
dpatti@jfkhealth.com
(609) 241-7365

Nicole Fletcher
Piramal Imaging
nicole.fletcher@piramal.com
(857) 202-1122

Piramal Imaging Presents New Data on Florbetaben in Detecting Beta-amyloid Plaques in Patients with Suspected Alzheimer's Disease

Scientific Session Presentations at SNMMI Annual Meeting Provide Additional Insights on Florbetaben Binding and Beta-amyloid Deposition Patterns

Boston, Mass., June 8, 2015 – Piramal Imaging announced today the presentation of additional analyses from its florbetaben phase 3 histopathology study, in which the florbetaben positron emission tomography (PET) signal from binding to morphologically distinct beta-amyloid plaques was examined, as well as the potential influence of plaques in the reference region for quantification. The results, which were presented at the 2015 annual meeting of the Society of Nuclear Medicine and Molecular Imaging (SNMMI) in Baltimore, Md., provide additional details on the topographic distribution of different beta-amyloid aggregates in the brain and on quantification.

In one analysis, entitled, *Impact of Morphologically Distinct Amyloid β ($A\beta$) Deposits on 18F-Florbetaben (FBB) PET Scans*, investigators examined florbetaben PET data to investigate the impact of diffuse, neuritic, and vascular beta-amyloid deposits on different regions of interest in the brain. They collected brain tissue samples from 87 end-of-life patients (including 64 with Alzheimer's disease [AD], 14 with other dementia, and 9 non-demented aged volunteers; mean age 80.4 ± 10.2 years) who underwent a florbetaben PET scan before death. In the frontal and posterior cingulate cortices – brain regions with high frequency of deposits – both diffuse and neuritic beta-amyloid contributed significantly to 18F-florbetaben uptake. In the occipital and anterior cingulate cortices – brain regions with low deposit frequency – only diffuse beta-amyloid plaques contributed significantly to the uptake. The presence of vascular beta-amyloid deposits contributed significantly to the uptake only in the occipital cortex.

"PET imaging using 18F-florbetaben as a radiotracer may allow for detection of morphologically distinct beta amyloid deposits in the brain aside from neuritic plaques, and their distribution in different brain regions. Further clinical studies are needed to elucidate how these deposits influence and contribute to cognitive impairment and dementia," commented co-author Ana M. Catafau, M.D., Ph.D., Vice President of Clinical R&D Neurosciences at Piramal Imaging. "Findings such as these may provide the requisite detailed information to help researchers better understand the time course and contributions of different types of plaque to the pathogenesis of Alzheimer's disease and other types of cognitive impairment."

In a second analysis, *Cerebellar Senile Plaques: How Frequent are They and Do They Influence 18F-florbetaben SUVR?*, researchers assessed the influence of cerebellar plaques on signal quantification when the cerebellar cortex is used as a reference region for quantification. Cerebellar β -amyloid ($A\beta$) plaques may be present in late-stage AD, and it was previously unknown if these would influence quantification.

Researchers conducted a neuropathological assessment of cerebral (frontal, occipital, anterior and posterior cingulate) cortex and cerebellar cortex tissue from the 87 end-of-life patients who underwent a florbetaben PET scan before death. Presence of neuritic/cored and diffuse plaques was assessed as absent, sparse, moderate and frequent. Mean cortical standardized uptake value ratios (SUVRs) were compared among brains with different cerebellar plaque loads. Results showed that the presence of senile plaques in the cerebellum is very infrequent. The cerebellum most frequently shows sparse diffuse plaques, which correspond to brains with higher cerebral cortical $A\beta$ loads. However, the presence of cerebellar senile plaques did not influence the SUVRs in subjects with presence of cerebral cortical $A\beta$. Therefore, the data suggest that the effect of cerebellar senile plaques in 18F-florbetaben SUVR is negligible, even in advanced stages of AD in patients with high cerebral cortical $A\beta$ load.

“Florbetaben is a well-established and validated biomarker of neuritic β -amyloid plaques,” said Andrew Stephens, Chief Medical Officer of Piramal Imaging. “These analyses show us that by using florbetaben in PET scans of the brain, we can examine the quantity and distribution of β -amyloid plaques in specific regions of the brain -- information that may better inform our understanding of the role of β -amyloid plaques in dementia onset and progression. Furthermore, these studies provide more detailed information of florbetaben binding.”

About Neuraceq™ (florbetaben F18 injection)

INDICATION

Neuraceq™ is indicated for Positron Emission Tomography (PET) imaging of the brain to estimate beta-amyloid neuritic plaque density in adult patients with cognitive impairment who are being evaluated for Alzheimer's disease (AD) and other causes of cognitive decline.

A negative Neuraceq™ scan indicates sparse to no amyloid neuritic plaques and is inconsistent with a neuropathological diagnosis of AD at the time of image acquisition; a negative scan result reduces the likelihood that a patient's cognitive impairment is due to AD. A positive Neuraceq™ scan indicates moderate to frequent amyloid neuritic plaques; neuropathological examination has shown this amount of amyloid neuritic plaque is present in patients with AD, but may also be present in patients with other types of neurologic conditions as well as older people with normal cognition.

Neuraceq™ is an adjunct to other diagnostic evaluations.

Limitations of Use

- A positive Neuraceq™ scan does not establish the diagnosis of AD or any other cognitive disorder.
- Safety and effectiveness of Neuraceq™ have not been established for:
 - Predicting development of dementia or other neurologic conditions;
 - Monitoring responses to therapies.

IMPORTANT SAFETY INFORMATION

Risk for Image Interpretation and Other Errors

Neuraceq™ can be used to estimate the density of beta-amyloid neuritic plaque deposition in the brain. Neuraceq™ is an adjunct to other diagnostic evaluations. Neuraceq™ images should be interpreted independent of a patient's clinical information. Physicians should receive training prior to interpretation of Neuraceq™ images. Following training, image reading errors (especially false positive) may still occur. Additional interpretation errors may occur due to, but not limited to, motion artifacts or extensive brain atrophy.

Radiation Risk

Administration of Neuraceq™, similar to other radiopharmaceuticals, contributes to a patient's overall long-term cumulative radiation exposure. Long-term cumulative radiation exposure is associated with an increased risk of cancer. It is important to ensure safe handling to protect patients and health care workers from unintentional radiation exposure.

Most Common Adverse Reactions

In clinical trials, the most frequently observed adverse drug reactions in 872 subjects with 978 Neuraceq™ administrations were injection/application site erythema (1.7%), injection site irritation (1.2%), and injection site pain (3.9%).

About Piramal Imaging SA

Piramal Imaging SA, a division of Piramal Enterprises, Ltd., was formed in 2012 with the acquisition of the molecular imaging research and development portfolio of Bayer Pharma AG. By developing novel PET tracers for molecular imaging, Piramal Imaging is focusing on a key field of modern medicine. Piramal Imaging strives to be a leader in the molecular imaging field by developing innovative products that improve early detection and characterization of chronic and life-threatening diseases, leading to better therapeutic outcomes and improved quality of life. For more information please go to www.piramal.com/imaging.

###