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**2ⁿᵈ International Conference on**

# Neurological Disorders and Stroke

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## Metabolic and cognitive patterns in Amyotrophic Lateral Sclerosis

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Functional and structural neuroimaging have highlighted in ALS the diffusion of anatomical and functional lesions beyond the classic motor areas. The value of 18F-FDG-PET as biomarker is currently gaining more importance and its possible role in supporting ALS diagnosis has been proposed. 1. Recent studies in large cohorts of ALS patients reported a very high discriminant value of 18F-FDGPET showing a clear pattern of hypometabolism in frontal and occipital cortex and hypermetabolism in midbrain being the latter the neurobiological correlate of diffuse subcortical gliosis. 2. Moreover spatially distinct networks identified ALS with an accuracy of 99%. 3. In a recent investigation we demonstrated a continuum of frontal lobe metabolic impairment reflecting the clinical and anatomic continuum ranging from pure ALS, through ALS with intermediate cognitive deficits, to ALS associated with frontal lobe dementia. 4. The finding that patients with intermediate cognitive impairment display a characteristic metabolic pattern suggests to investigate ALS by functional neuroimaging along with neuropsychological testing to disclose the early metabolic signature of a possible cognitive impairment.

### Biography

Marco Pagani MD 1985; PhD in Brain Neurophysiology and Nuclear Medicine Methodology, 2000, at Karolinska Institute of Stockholm] is a Senior Researcher at the Institute of Cognitive Sciences and Technologies of the Italian National Research Council (ISTC-CNR) and is Senior Advisor of the European Neuroimaging Committee of EANM. His work focuses on the physiopathology of brain perfusion, metabolism, electrical activity and anatomy, applied to neurodegenerative, neurological and psychiatric disorders. One of the most relevant research lines he has pursued is the implementation of multivariate analysis and the relative identification of brain networking in normal and pathological conditions. He tutored PhD students investigating depression, post-traumatic stress disorder and autism and has published in Peer Reviewed Journals more than 100 full papers (mean IF > 4.36), eight of which focussed on ALS related investigations. He has presented more than 120 communications at international Conferences has given more than 40 Keynotes and Plenary Lectures at International Conferences, has taught at more than 30 CME, Workshops and Courses and has been awarded three International Prizes.

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**Notes:**

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Page 50