

Dementia Therapeutics and Cognitive Rehabilitation

**University of Calabria, Aula Magna
Rende (Cosenza), Italy
November 21st-23rd, 2022**

A Collaborative Scientific Initiative of

The University of Calabria, Rende (Cosenza), Italy,
The University Magna Graecia, Catanzaro, Italy,
The German Center for Neurodegenerative Diseases (DZNE), Bonn
The Tohoku Medical and Pharmaceutical University, Sendai, Japan,
The Daiichi University of Pharmacy, Fukuoka, Japan,
The Sant'Anna Institute for Neurological Rehabilitation, Kroton, Italy

Under the Auspices of

Italian Society of Pharmacology (SIF)
Japanese Society of Pharmacology (JPS)
Italian Society of Neurological Rehabilitation (SIRN)
World Federation of Neurorehabilitation (WFNR)

Presidents

Giacinto Bagetta (Rende, Cosenza)
Shinobu Sakurada (Sendai)

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Keynote Speakers & Chairs

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Giorgio Racagni (Milan)
Tsukasa Sakurada (Fukuoka)
Paolo Tonin (Kroton)

Invited Speakers & Chairs

Diana Amantea (Rende, Cosenza)
Daniele Bano (Bonn)
Eugenio Barone (Rome)
Fabio Blandini (Milan)
Sara Bottiroli (Pavia)
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International Scientific Secretariat

Hirokazu Mizoguchi (Sendai)
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MEETING RATIONALE

The global impact of dementia is increasingly worrisome and up to 90% of dementia patients in low- and middle-income countries are not diagnosed with further delays in diagnosis due to the pandemic during which these fragile population pays the highest price.

Alzheimer's disease (AD) is the most common accounting for about two-thirds of all cases, but mixed forms of dementia are being increasingly recognized, making dementia a public health priority. These different forms may at least in part be explained through progressive alterations of the epigenome that may contribute to the decrease of cognitive abilities with advancing age.

Indeed, there is little doubt that AD is a multifactorial disease, which involves diverse pathogenic mechanisms and will probably require combinatorial therapies. Although many pathological factors, such as accumulation of protein aggregates of amyloid-beta (Ab) and tau, have been identified, their role in combination with other factors, at different disease stages, requires further clarification. A comprehensive understanding of the complex disease mechanisms, the identification of early disease markers aided by ultrastructural magnetic resonance imaging are necessary to develop more effective treatments.

Although multiple failures of phase III trials with agents targeting Ab had initially been disappointing, the accelerated approval of aducanumab has recently renewed the interest in targeting Ab. The gain of information from the real-world data on aducanumab may anticipate that further development of clinical trials in AD will be prompted.

Actually, current treatments of AD provide only limited symptomatic effects and development of neuropsychiatric symptoms (NPS), other than cognitive symptoms, do affect some 97% dementia patients and they are managed with potentially harmful antipsychotics. The latter NPS are at least in part linked to unrelieved pain remarkably reducing quality of life. Hence, studies for the management of NPS are needed and novel opportunities are offered by complementary analgesic and non-BDZ anxiolytic effects of natural products such as phytocomplexes engineered to be trialed in double blind studies also for cognitive rehabilitation.

All the above illustrated topics and more, concerned with cognitive rehabilitation, are the subjects of the meeting.

SCIENTIFIC PROGRAM

Monday, November 21st, 2022

15:00 – 16:30 Registration

16:30 – 17:00 Welcome address and meeting rationale

Giacinto Bagetta, Chairman of Preclinical and Translational Pharmacology, University of Calabria (Rende, Cosenza)

Maria Luisa Panno, Head of Department of Pharmacy, Health Science and Nutrition, University of Calabria (Rende, Cosenza)

Sebastiano Andò, Emeritus of General Pathology, University of Calabria (Rende, Cosenza)

Giovambattista De Sarro, Rector, University Magna Graecia (Catanzaro)

17.00 – 17:15 Introduction

Giorgio Racagni, President of Italian Society of Pharmacology (SIF, Milan)

17:15 – 18:00 Opening lecture

Pierluigi Nicotera (Scientific Director and Chairman of the Executive Board, DZNE, Bonn)

Research at DZNE: a cooperative national organization to fight neurodegeneration

18:00 – 19:00 Welcome cocktail

Tuesday, November 22nd, 2022

9:30 – 9:35 Introduction

Giambattista Bonanno (Genoa)

9:35 – 10:00

Monica di Luca (Milan)

Synaptic dysfunction in Alzheimer disease

10:00 – 11:00

1st COMMUNICATIONS SESSION: Basic Research in Dementia

Chairpersons: Diana Amantea (Rende, Cosenza) & Luigi Brunetti (Chieti)

Daniele Bano (Bonn)

Mitochondria in longevity and age-related processes

Giuseppe Passarino (Rende, Cosenza)

The effects of gene interactions on cognitive decline and dementia

Elisa Landucci (Florence)

Cannabinoid mechanisms in models of neurodegenerative disorders in vitro

Giuseppe Pignataro (Naples)

Nanoparticle-mediated delivery of a new TSPO ligand suppresses inflammation in LPS-stimulated microglia and in a mouse model of Alzheimer's disease

11:00-11.30 Coffee break

11:30 – 11:35 Introduction

Lucio Annunziato (Naples)

11:35 – 12:00

Marzia Perluigi (Rome)

Impairment of redox homeostasis and energy metabolism in the brain of Down syndrome: a synergistic path to Alzheimer disease

12:00 – 13:00

2nd COMMUNICATIONS SESSION: Basic Research in Dementia

Chairpersons: Anna Pittaluga (Genoa) & Rossella Russo (Rende, Cosenza)

Antonella Scorziello (Naples)

NCX3-induced mitochondrial dysfunction in midbrain leads to neuroinflammation in striatum of A53T- α -synuclein transgenic old mice

Kengo Hamamura (Fukuoka)

Novel enhancement mechanisms of the nociceptive response by serum exosomes in a mouse model of neuropathic pain

Livio Luongo (Naples)

Neuroplastic changes in beta amyloid-induced Alzheimer like phenotype are associated with social and cognitive impairment

13:00-15:30 Lunch break and Poster presentation

15:30 – 15:35 Introduction

Luigi A. Morrone (Rende, Cosenza)

15:35 – 16:00

Sabatino Maione (Naples)

New technologies unveil future resources from the glorious past of the natural substances

16:00 – 17:00

3rd COMMUNICATIONS SESSION: Translational Research in Dementia

Chairpersons: Francesca Luisa Conforti (Rende, Cosenza) & Fabio Blandini (Pavia)

Carmela Matrone (Naples)

The amyloid precursor protein phosphorylation at the tyrosine 682 residue as druggable signature in Alzheimer disease

Alessandra Roggeri (Genoa)

The complex mode of action of anti-NMDA and anti-AMPA antibodies in the CNS: translations to clinical disorders

Barone Eugenio (Rome)

Neural-derived extracellular vesicles (nEVs): a novel approach to identify brain alterations leading to Alzheimer disease

17:00 – 17:30 Coffee break

17:30 – 17:35 Introduction

Domenico Pellegrini Giampietro (Florence)

17:35 – 18:00

Tsukasa Sakurada (Fukuoka)

Pharmacological characterization of bergamot essential oil for clinical use

18:00 – 19:00

4th COMMUNICATIONS SESSION: Translational Research of Natural Products for Dementia

Chairpersons: Mario Dell'Agli (Milan) & Carmela Fimognari (Bologna)

Rosmara Infantino (Naples)

2-pentadecyl-2-oxazoline (PEA-OXA) treatment reduces cognitive impairments in a mouse model of dementia

Francesca Calabrese (Milan)

Effects of chronic treatment with a phytosomal preparations containing *Centella asiatica L.* and *Curcuma longa L.* on cognitive performance in rats: involvement of neuroplastic mechanisms

Franca Marino (Varese)

Effect of cannabidiol on human immune cells: relevance for neuropathic pain and inflammatory diseases

Wednesday, November 23rd, 2022

9:30 – 9:35 Introduction

Giacinto Bagetta (Rende, Cosenza)

9:35 – 10:00

Daniela Galimberti (Milan)

Dementia therapeutics: Biotech drugs

10:00 – 11:00

1st COMMUNICATIONS SESSION: Clinical Research

Chairpersons: Amalia Bruni (Lamezia Terme, Catanzaro) & Pierluigi Nicotera (Bonn)

Antonio Leo & Martina Tallarico (Catanzaro)

Alzheimer disease and epilepsy: Current concepts and overlapping therapeutic strategy

Francesco Garaci (Rome)

Imaging of dementia and artificial intelligence (AI)

Carlo Nucci (Rome)

Imaging biomarkers for Alzheimer's Disease and Glaucoma: current and future practices

11:00-11.30 Coffee break

11:30 – 11:35 Introduction

Paolo Tonin (Kroton)

11:35 – 12:00

Linda Clare (Exeter)

Cognitive rehabilitation for people with dementia

12:00 – 13:00

2nd COMMUNICATIONS SESSION: New Trends in Dementia Rehabilitation

Chairpersons: Dafin Muresanu (Cluj-Napoca) & Sara Bottiroli (Pavia)

Dafin Muresanu (Cluj-Napoca)

The concept of neurobiological reserve and the impact on neurorehabilitation research paradigm

Stefano Cappa (Pavia)

Management of neurodegenerative language disorders

Damiana Scuteri (Rende, Cosenza)

Targeting pain to control neuropsychiatric symptoms of dementia: the need for tailored clinical trials

Francesco Riganello (Kroton)

Importance of the autonomic and behavioral response in the assessment of pain in patients with disorders of consciousness

13:00-14.30 Lunch

Poster Communications

Presynaptic complement, a synaptic organizer in the CNS: relevance to synaptopathy.

Guendalina Olivero, Francesca Cisani, Alessandra Roggeri, Giulia Vallarino, Alice Taddeucci, Hanna Trebesova, Massimo Grilli, Lorenzo di Cesare Mannelli, Carla Ghelardini, Anna Pittaluga

Impact of early acute inflammation on the development of the GABAergic system in the hippocampus: aging and sex dependency.

Alessandra Roggeri, Alice Taddeucci, Cristina Ceccoli, Giulia Vallarino, Guendalina Olivero, Cristina Benatti, Joan MC Blom, Fabio Tascetta, Nicoletta Brunello, Anna Pittaluga

The involvement of TRPV2 channels in the neuroprotective effects of cannabidiol in a model of in vitro ischemia.

Costanza Mazzantini, Elisa Landucci, Daniele Lana, Maria Grazia Giovannini and Domenico E. Pellegrini-Giampietro

Nutraceutical approaches for the management of aging: promising antiaging activity of a new formulation of ellagic acid.

Alice Taddeucci, Giulia Vallarino, Alessandra Roggeri, Guendalina Olivero, Veronica Torre, Federica Turrini, Maria Summa, Rosalia Bertorelli, Raffaella Boggia, Anna Pittaluga

Anxiolytic-like/relaxant effects of BEO are useful to manage anxiety and agitation symptoms observed in patients with dementia

Laura Rombolà, Damiana Scuteri, Maria Tiziana Corasaniti, Giacinto Bagetta, Luigi Antonio Morrone

Role of mGlu-5 and mGlu2/3 receptors in behavioural effects of bergamot essential oil

Laura Rombolà, Enrica De Rasis, Damiana Scuteri, Maria Tiziana Corasaniti, Giacinto Bagetta, Luigi Antonio Morrone

2-pentadecyl-2-oxazoline (PEA-OXA) treatment reduces the cognitive damage and impaired neural plasticity in vitamin D deficiency.

Belardo C., Iannotta M., Manzo I., Infantino R., Boccella S., Ricciardi F., Perrone M., Fusco M., Ricciardi F., Maione S. and Guida F.

Role of spinal cholecystinin-8, nociception and hemokinin-1 in diabetic allodynia.

T. Hayashi, S. Kanno, C. Watanabe, Y. Agatsuma, A. Hara, T. Sakurada, S. Sakurada

Hemokinin-1 activates transient receptor potential vanilloid 1 channels in the spinal cord to induce nociceptive behavior.

T. Hayashi, S. Kanno, C. Watanabe, Y. Agatsuma, A. Hara, T. Sakurada, S. Sakurada

Pain assessment for better pharmacological treatment of pain and agitation in severe dementia: I-MOBID2 validation

D. Scuteri, M. Contrada, T. Loria, D. Sturino, A. Cerasa, P. Tonin, G. Sandrini, S. Tamburin, A.C. Bruni, P. Nicotera, M.T. Corasaniti, G. Bagetta

Need for a clinical trial investigating efficacy and safety of oral spray nabiximols for pain and agitation treatment in severe dementia patients

D. Scuteri, F. Guida, S. Boccella, L. Luongo, S. Maione, P. Tonin, P. Nicotera, G. Bagetta, M.T. Corasaniti

Automated Diagnosis of Alzheimer's disease with neuropsychological measures: a meta-analytical review

A. Cerasa, P. Battista, C. Salvatore, M. Berlingeri, I. Castiglioni

List of Contributors

Diana Amantea (Rende, Cosenza)
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How to find us



General Information

Registration fee

A registration fee of 150 € is to be paid beforehand via bank transfer (IBAN: IT35W0200880884000103544669) to: Department of Pharmacy, Health Sciences and Nutrition, University of Calabria, 87036 Rende, Cosenza, Italy (causal: registration fee meeting “Dementia Therapeutics and Cognitive Rehabilitation”). The fee will allow to attend the meeting sessions. To limit the environmental impact of the meeting, the program will be available online by means of a QR code to be used with the smartphone.



Meeting content and format

The meeting is organized in basic, translational and clinical sessions on dementia. Each session is preceded by a keynote speech of 25 minutes duration including discussion. The sessions include oral presentations of 20 minutes duration including discussion.

The poster session will be Tuesday 22nd November. Posters will be discussed at lunch break, but they will be on display for all the duration of the meeting. Poster format 70x100 cm.

Accommodation

Accommodation for participants will be at an agreed discount rate at the four stars San Francesco Hotel, Rende (Cosenza). Transportation to/from the University will be available free of charge for registered participants from the Hotel San Francesco.

For further information, please, address the correspondence to the executive secretariat.

Language

The language of the meeting will be English, no translation will be available.

Social Program

Monday, November 21st, 2022 the welcome dinner will be served at Villa Rendano (Cosenza) at 20.30 followed by Pop music concert directed by M^o Giuseppe Cosentino.

Tuesday, November 22nd, 2022 the social dinner will be served at 20.30 at the Fellini Restaurant followed by Ethnic music concert directed by M^o Checco Pallone.

Executive Secretariat at: Department of Pharmacy, Health Sciences and Nutrition, University of Calabria, 87036 Rende, Cosenza, Italy;
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Sponsors

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Department of Pharmacy & SSN, University of Calabria, Rende (Cosenza)

Pharmacists Association of Cosenza

Private Pharmacy Association, Federfarma, Cosenza