FONDAZIONE MONDINO
Istituto Neurologico Nazionale a Carattere Scientifico | IRCCS
Sistema Sanitario Regione Lombardia

UNIVERSITÀ DI PAVIA

1ST GOLGI NEUROSCIENCE WORKSHOP

UPDATE ON ALPHA-SYNUCLEIN: FROM BENCH TO BEDSIDE

Over the past decade, we have made significant progress in our understanding of the pathophysiology of Parkinson's disease (PD). Current diagnostic criteria are based on clinical features, assessing motor and non-motor symptoms, subject to operator-dependent interpretations. Postmortem pathologic evaluation is the gold standard for diagnosing PM and is based on the risk of abnormal protein accumulation that characterizes disease development and progression. Although we have clinical diagnostic criteria, we have developed them to allow a more accurate clinical characterization, even before the onset of motor symptoms, to date there is a lack of biological diagnostic criteria (i.e. biomarkers) to achieve an early and accurate diagnosis.

In recent years, the fundamental role of alpha-synuclein (a-syn) has emerged as a key element in the pathogenesis of the disease. Preclinical studies conducted on different species, including primates and rodents, have demonstrated how the various alterations of the protein structure of asyn can compromise neuronal survival and consequently the circuitry of the basal ganglia, with the onset of symptoms. Furthermore, clinical studies demonstrate the validity of the measurement of a-syn in body fluids (blood, cerebrospinal fluid and saliva) and in peripheral tissues (e.g. skin).

Through innovative techniques, the degree of accuracy of these measurements is progressively improving, thanks to methods such as RT-Quic, and the introduction of new technologies for the study of extracellular vesicles containing a-syn. This progress has relevant implications not only for improving the diagnostic accuracy, allowing a faster diagnostic process, but also has a therapeutic implication, as the identification of the different role of the altered species of a-syn can provide the rationale for the development of innovative therapies and which arrest the progression of the disease.

The purpose of the conference is to compare basic science researchers with clinicians, in order to promote a "translationality" that is of fundamental importance for neurological pathologies.

IRCCS MONDINO FOUNDATION, PAVIA (ITALY) – BERLUCCHI HALL – MAY 15th, 2023

8.30 A.M. REGISTRATION

9.00 A.M. GREETINGS FROM THE AUTHORITIES

9.15 A.M. WELCOMING REMARKS AND PRESENTATION OF THE *LECTURE*
Fabio Blandini (Milan, Pavia)
Antonio Pisani (Pavia)

9.30 A.M. *Lecture*
Endogenous wild type alpha-synuclein in Parkinson's disease: 25 years of modelling
J. Timothy Greenamyre (Pittsburgh, PA)

■ SESSION I
PRECLINICAL EVIDENCE CELLULAR AND MOLECULAR TARGETS

CHAIRS **Fabio Blandini** (Milan, Pavia)
Antonio Pisani (Pavia)

10.15 A.M. **GBA in synucleinopathies**
Enza Maria Valente (Pavia)

10.40 A.M. **Modelling synucleinopathies in Primates**
Erwan Bezard (Bordeaux)

11.05 A.M. COFFEE BREAK

11.35 A.M. **Alpha-synuclein-induced postsynaptic dysfunction in rodent models**
Fabrizio Gardoni (Milan)

12.00 A.M. **Alpha-synuclein-induced early synaptic dysfunctions in PD**
Paolo Calabresi (Rome)

12.25 P.M. DISCUSSION

12.45 P.M. LUNCH

■ SESSION II
NOVEL DIAGNOSTIC TOOLS AND THERAPEUTICS

CHAIRS **Enza Maria Valente** (Pavia)
Paolo Calabresi (Rome)

2.00 P.M. **Application of the seed amplification assays for the clinical diagnosis of alpha-synucleinopathies**
Fabio Moda (Milan)

2.25 P.M. **Extracellular vesicles in synucleinopathies**
Silvia Cerri (Pavia)

2.50 P.M. **Challenges in the differential diagnosis of synucleinopathies**
Wassilios Meissner (Bordeaux)

3.15 P.M. **Therapeutic perspectives**
Angelo Antonini (Padua)

3.40 P.M. DISCUSSION

4.00 P.M. CONCLUDING REMARKS

4.15 P.M. WORKS CLOSURE

Scientific Supervisor
Antonio Pisani, IRCCS Mondino Foundation, Pavia & University of Pavia

Scientific Commettee
Fabio Blandini, IRCCS Policlinico Ospedale Maggiore, Milan & University of Pavia; Silvia Cerri, IRCCS Mondino Foundation, Pavia; Enza Maria Valente, IRCCS Mondino Foundation, Pavia & University of Pavia

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Official language
English

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