

Plenary Lectures

PL2. Plenary Lecture — The Lilly Dista Psychiatry Lecture

HUMAN BRAIN IMAGING — A FORCE FOR PSYCHIATRY AND PSYCHOPHARMACOLOGY

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Developments in molecular biology and genetics have disclosed an enormous molecular complexity of signalling mechanisms within the human brain. Hypotheses on pathophysiological mechanisms in neuropsychiatric disorders imply perturbations in the expression or function of such molecular components. Most, if not all currently used psychopharmacological agents mediate their actions by binding to molecular components as neuroreceptors and amine transporters. Among the brain imaging modalities only positron emission tomography (PET) and single photon emission tomography (SPECT) have the sensitivity required to image molecular components of the human brain. The development of selective radioligands binding with high affinity to neuroreceptors and transporters gives the possibility to image the distribution and quantities of these molecules and also the possibility to examine how clinical treatment with pharmacological agents affect the molecular targets in the brain. Using suitable radioligands for monoamine receptors belonging to the D1, D2 and 5HT2 receptor families it has been possible to compare the characteristics of these receptors in some brain regions in patients and healthy control subjects. Such PET studies have disclosed molecular alterations of both pre- and post-synaptic type in patients with Huntington's chorea and schizophrenia. In schizophrenic patients treated with antipsychotic drugs this PET methodology has also allowed the analysis of relationships between the degree of drug effects on receptors directly in the living brain and the clinical manifestations of the treatment. Such studies have consistently demonstrated that antipsychotic action can appear at occupancy levels of D2 dopamine receptors in the brain which are lower than those required to produce extrapyramidal manifestations. These brain imaging studies point to the possibility to use lower clinical doses of antipsychotic drugs than previously used routinely. The results also point to the possibility to further refine the analysis of relationships between the degree of occupancy of central monoamine receptors in drug-treated patients and the various action components of antipsychotic drugs such as the differentiation of positive and negative symptoms and side-effects as sedation and motor disturbances. It can be expected that as more selective radioligands become available for molecular components not accessible so far, the relevance of brain imaging for diagnostic purposes and to further refine drug treatment for the individual patient will be increasingly appreciated.

[1] Sedvall G and Farde L: Chemical brain anatomy in schizophrenia. *Lancet* 346: 743–749, 1995.

[2] Sedvall G et al: Utilization of radioligands in schizophrenia research. *J Clinical Neuroscience* 3: 112–121, 1995.

PL3. Plenary Lecture

INTEGRATING EASTERN EUROPE

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Countries in the Eastern and Central parts of Europe are many and they have little in common. They use a multitude of languages — ten or so of them Slovak, the remainder languages belonging to other groups (e.g., Romanic, Germanic, Albanian, Altaic, Caucasian); they have a different history and different religious traditions; different cultures; and different geophysical and social environments. What makes them similar above all is more than a thousand years of separation from the countries in the West of Europe. Although, on a number of occasions, ideas and people moved freely and in large numbers from East to West, there have been long periods during which contacts were sporadic and even seen as undesirable by the governments in power.

The consequences of the most recent period of intensive separation stretching over most of the second half of the twentieth century are numerous. Most of them are detrimental to the development of countries in Eastern and Western Europe. The political situation is now such that it is possible to create a bridge between the East and the West of Europe and to dream of benefits of a community of nations and countries containing more than 800 million people inhabiting the European territory.

Science and medicine stand to gain from intensive and extensive collaboration across Europe. Proposals about ways to establish productive links and work together are now before the scientific community. Possibilities for cooperation have been identified and opened: yet, few of the opportunities are taken up and the gap remains as wide — if not wider than before.

PL6. Plenary Lecture

LITHIUM PROPHYLAXIS OF BIPOLAR DISORDER: LONG-TERM OUTCOME IN ORDINARY CLINICAL CONDITIONS

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In recent years, there has been an increasing interest in the effectiveness (i.e., outcome in ordinary clinical conditions) as opposed to the efficacy (i.e., potential usefulness as emerging from double-blind randomized clinical trials) of lithium prophylaxis in bipolar patients.