

## BNPA PLENARY

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**EPILEPSY, DEPRESSION AND ANXIETY DISORDERS: A COMPLEX RELATION WITH SIGNIFICANT THERAPEUTIC IMPLICATIONS FOR THE THREE CONDITIONS**

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Dr. Kanner was born in Mexico City, where he grew-up and attended Medical School at the National Autonomous University of Mexico. After graduating from Mexico he moved to the USA where he completed a residency in Psychiatry at the Long-Island Jewish Hillside Medical Center in New Hyde Park, New York. In addition, Dr. Kanner completed a research fellowship in Child Psychiatry, sponsored by the National Institute of Mental Health, at the College of Physicians and Surgeons of Columbia University in New York City, a residency in Neurology at the Department of Neurology of Mount Sinai Medical Center in New York City and completed his training with a fellowship in Epilepsy and Clinical Neurophysiology at the Cleveland Clinic Foundation in Cleveland, Ohio. Dr. Kanner is triple boarded in Neurology, Psychiatry and Clinical Neurophysiology.

Dr Kanner has long-standing research interests in the areas of pharmacology of epilepsy, psychiatric aspects of epilepsy and surgical treatment of temporal lobe epilepsy. He has authored or

coauthored over 80 research publications, over 75 invited review articles and over 73 book chapters and has edited two textbooks and co-edited four. In 2011, he was just appointed as Associate Editor of *Epilepsy Currents*, the official journal of the American Epilepsy Society. Dr. Kanner was awarded the J. Kiffin Penry Award for Excellence in Clinical Care in Epilepsy by the American Epilepsy Society in December 2010, the Epilepsy Ambassador Award from the International League Against Epilepsy in August 2011 and the Award for Outstanding Medical Service from the Epilepsy Foundation of Chicago in November 2011.

Dr Kanner serves as Co-Chair of the Neuropsychobiology Commission of the International League Against Epilepsy and as Co-Chair of the Work Group on Psychiatric Aspects of Epilepsy of the American Epilepsy Society and is as the Past Chair of Epilepsy Section of the American Academy of Neurology. **Abstract** Depression and anxiety disorders are the most frequent comorbidities in patients with epilepsy (PWE) with lifetime prevalence rates of 30 to 35%. These disorders have been typically considered to result from the seizure disorder. Yet, their relation is more complex, as the presence of primary depressive and anxiety disorders is associated with a three to seven fold higher risk to develop epilepsy. Furthermore, A lifetime history of depression and anxiety disorders preceding the onset of epilepsy have been associated with a lower probability of achieving a seizure-free state with pharmacotherapy. In patients with treatment-resistant temporal lobe epilepsy, a lifetime history of depression has been associated with a lower probability of reaching a complete seizure-free state following an antero-temporal lobectomy.

As in primary depressive and anxiety disorders, PWE are more likely to suffer from the co-occurrence of these two psychiatric conditions. The bidirectional relation with epilepsy does not necessarily imply causality (e.g., epilepsy does not cause depressive and/or anxiety disorders and vice-versa). Rather, the high comorbidity of these three conditions is suggestive of the existence of common pathogenic mechanisms. These include: (1) neurotransmitter disturbances in the transmission of serotonin, norepinephrine, glutamate, gamma-amino-butyric acid. (2) neuro-endocrine disturbances such as a hyperactive hypothalamic pituitary adrenal axis and (3) inflammatory processes involving the central nervous system.

The complex relation between these three conditions is also illustrated in the impact that epilepsy surgery has on the course of presurgical depressive and anxiety disorders in patients with treatment-resistant temporal lobe epilepsy. Indeed, about 30% to 50% of patients with presurgical disorders experience a remission after surgery, while another 20% have an exacerbation in severity or recurrence post-surgically and yet in another 10 to 15% of patients report the development of de-novo depressive and anxiety disorders.

This presentation will review the complex relation between depression, anxiety and epilepsy and its impact on their therapeutic response to treatment.