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INDIVIDUAL & FAMILY PSYCHOPHARMACOLOGIC TREATMENT OF:

- MOOD AND ANXIETY DISORDERS • OBSSIVE-COMPULSIVE DISORDER
- PERVASIVE DEVELOPMENTAL DISORDERS/AUTISM
- ATTENTION DEFICIT DISORDER • MENTAL RETARDATION • TOURETTE'S DISORDER
- TRAUMATIC PSYCHIATRY • TRAUMATIC BRAIN INJURY
- POST-TRAUMATIC STRESS DISORDER • CHRONIC PAIN MANAGEMENT

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THE NEUROPSYCHIATRIC BASIS OF POST-TRAUMATIC STRESS DISORDER

A traumatic situation, where a threat to one's body integrity or life occurs, may produce severe anxiety symptoms which are diagnosed as Post-Traumatic Stress Disorder (PTSD). Most patients also develop a concurrent agitated depression.

The Neuroanatomical Basis of Post-Traumatic Stress Disorder

The reason treatment of PTSD is prolonged can be understood on the basis of neuroanatomy. A group of neurons in the brain stem (below the cortical areas of the brain) are called the *LOCUS CERULEUS*. Connections between the *LOCUS CERULEUS* -- which activate the brain/memory center in the temporal lobe of the brain (the *HIPPOCAMPUS*) -- are a neuroanatomic basis for the recurrence of PTSD since this area of the brain contains norepinephrine-containing neurons with neuroanatomic connections to the *HIPPOCAMPUS*.

When a person reexperiences a trauma, the hippocampal connections activate the norepinephrine-containing neurons. This norepinephrine surge causes subjective symptoms of severe anxiety -- a "flight or fight" response -- which is maladaptive when one experiences a non-life-threatening trauma. For example, a person traumatized by a past auto accident later experiences severe anxiety even while riding safely in a car.

Treatment of Post-Traumatic Stress Disorder

Psychotropic medication to treat depression and anxiety -- i.e., anti-depressants and anti-anxiety agents -- cannot diminish PTSD trauma-induced memory and are only partially effective in decreasing PTSD anxiety/depressive symptoms. Since trauma-induced memories last a lifetime, there is need for extensive, prolonged psychological treatment, i.e., cognitive behavioral therapy/desensitization. However, psychotherapy also is only partially effective in reducing locus ceruleus-induced norepinephrine cerebral activation which occurs during the frequent re-experiencing of the traumatic event.

Summary

Knowledge of the neuropsychiatric basis of PTSD is essential in order to understand the chronicity, as well as the need for long-term lifetime treatment.¹

¹ Textbook of Neuropsychiatry, edited by Stuart Yudofsky and Robert E. Hales, M.D. (American Psychiatric Association Press, June 1997).