

## Breakthroughs in Neuro-Cognitive Disorders

June 11, 2016 in Las Vegas, NV

September 16, 2016 in Cleveland, OH

February 25, 2017 in Fort Lauderdale, FL



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Interventional Psychiatry  
-Enhanced Med Management  
-Electroconvulsive Therapy  
-IV Ketamine for Depression  
-Genetic Testing

These are a series of conferences that are attended in order to help appreciate the overlap between Psychiatry and Neurology. I attended the June 11th session at the Lou Ruvo Center for Brain Health in Las Vegas. Interesting points as below:

### **Breakthroughs in Neurocognitive Dysfunction in White Matter Disease**

#### **Multiple Sclerosis (MS)**

Cognitive impairment may have prognostic value in predicting conversion from clinically isolated symptoms to full blown MS.

MSPT (Multiple Sclerosis Performance Test); is an iPad based tool to track motor, visual and cognitive symptoms, and quality of life outcomes associated with MS.

Central and whole brain atrophy actually account for more MS cognitive impairment than lesion load.

#### **Vascular White Matter Disease**

**CADASIL:** Cerebral Autosomal Dominant Arteriopathy with Subcortical Infarcts and Leukoencephalopathy

Of interest to us, migraine and ischemic events precede a Mood Disorder which sets in the late 40's/early 50's followed by Dementia

Acetylcholinesterase Inhibitors & Memantine show modest benefit in large trials.

#### **Dementia with Psychotic Symptoms**

At least 30% of dementia patients have psychosis; 20% with mMSE scores in the 20's have delusions and hallucinations.

Psychosis in newly diagnosed patients predicts progression to severe dementia and death.

The studies which led to the Black Box warning for the use of antipsychotics in dementia were likely hampered by the inclusion of patients agitation and irritability (i.e. non-psychotic).

Pimavanserin: FDA approved for Parkinson's psychosis

5-HT2A receptor antagonist; no blockade of Dopamine 1-4, nor Acetylcholinergic/Histaminergic receptors

This writer added that ECT is highly effective in reducing psychotic and non-psychotic agitation in dementia patients; the audience was surprised as ECT is not as available in Las Vegas as it is in the Phoenix area.

#### **Differentiating Movement Disorders with Cognitive Dysfunction**

**DaT Scan** (Ioflupane binds to striatal dopamine transporters under SPECT imaging)

FDA indicated for detecting loss of functional neurons in the striatum:

A positive scan is indicative of Parkinsonism, but does not differentiate Parkinson's Disease from Progressive Supranuclear Palsy, Corticobasal Degeneration,

Multiple System Atrophy, or Dementia with Lewy Bodies.

### **Chronic Traumatic Encephalopathy: Hot Topic or Hot Mess**

What the speaker implied by his title is that media attention and culture change has outpaced the knowledge of this entity in the Scientific Community; Incidence, prevalence, natural history, prognosis and risk factors (except trauma), are all unknown. There is no consensus on diagnostic criteria, nor any specific features on neuroimaging.

The Professional Fighter Brain Health Study is 4 years underway, and involves 3 groups; Controls, Active Fighters (boxers, MMA), and retired fighters where objective data is collected on an annual basis. One interesting finding so far, is that education appears to have a protective effect.

PET imaging looking at tau protein is an area of interest as a biomarker.

### **MRI in Dementia**

Current area of focus is building large “libraries” of clinically diagnosed Alzheimer’s Disease and Mild Cognitive Impairment, i.e. rather than comparing to normal controls, compare to known disease.

### **PET in Dementia**

Amyloid deposition can occur 20 years before the dementing disease process begins, which may explain the negative findings in recent anti-Alzheimer drug trials; “too little too late”.

Entorhinal cortex hypometabolism predicts conversion from normal to MCI with a sensitivity and specificity rate of 85%.

There are currently a dozen trials looking at neuroimaging, biomarkers, and treatment of Alzheimer’s Disease underway at the Cleveland Clinic Lou Ruvo Center for Brain Health.