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**Paper 85 Starting at 4:03 PM, Ending at 4:11 PM****Comparison of Diffusion Tensor Imaging in Systemic Lupus Erythematosus with and without Neuropsychiatric Symptoms: A Prospective Study of Apparent Diffusion Coefficient and Fractional Anisotropy Values in Different Regions of the Brain**

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**PURPOSE**

To determine if significant differences in apparent diffusion coefficient (ADC) and fractional anisotropy (FA) values in different gray and white matter regions of the brain exist in patients with neuropsychiatric systemic lupus erythematosus (NPSLE) when compared to patients with systemic lupus erythematosus (SLE) without neuropsychiatric symptoms.

**MATERIALS & METHODS**

Eight patients (aged 23-55 years, mean 44.8) with symptomatic NPSLE and 15 patients with SLE without neuropsychiatric symptoms (aged 27-59 years, mean 44.1) were evaluated. All subjects underwent routine brain MR imaging. Diffusion tensor imaging also was obtained using a single-shot spin-echo EPI technique along nine different directions with a b-value of 1000 s/mm<sup>2</sup>. 50 mm<sup>2</sup> volumes of interest were placed in standardized normal-appearing gray and white matter regions within both hemispheres. ADC and FA maps were generated, and ADC and FA values and standard deviations were calculated. A two-sample t-test was used for statistical analysis.

**RESULTS**

Statistically significant differences ( $p < 0.005$ ) were found in both ADC and FA values when comparing the NPSLE patients to the nonneuropsychiatric SLE patients in the internal capsule. Significant differences in FA values in the insular cortex, orbitofrontal cortex, thalamus, and cingulate cortex and significant differences in ADC values in periaqueductal gray matter also were noted when comparing the two populations.

**CONCLUSION**

DTI can distinguish significant differences in FA and ADC values in several normal-appearing regions of the brain in NPSLE patients when compared to SLE patients without neuropsychiatric symptoms. These alterations may be based on loss of tissue integrity and in part due to demyelination. Furthermore, these findings may in the future assist in the diagnosis of NPSLE, help distinguish between acute and chronic disease, play a role in monitoring disease progression, and possibly help to further elucidate the pathogenesis of NPSLE.

**KEY WORDS:** Lupus, neuropsychiatric, diffusion tensor imaging

**Paper 86 Starting at 4:11 PM, Ending at 4:19 PM****Hippocampal and Amygdalar Volumes Changes in Drug Addicts: A Preliminary Study**

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**PURPOSE**

Hippocampal and amygdalar volumes changes in individuals with childhood traumatic histories, and stress-related psychiatric condition including posttraumatic stress disorder (PTSD) have been reported. In addition, psychological studies have shown correlation among alexithymia and traumatic experiences in drug addicts. The aim of this study was to assess hippocampal and amygdala volumes changes in a sample of drug addicts with traumatic histories (neglect, sexual abuse or physical abuse) and in a control group matched for age and gender.

**MATERIALS & METHODS**

Three self-report were administered to two samples (7 addicts and 7 normal adult): DES (*Dissociative Experience Scale*), TSI-A (*Trauma Symptom Inventory - Alternative*), TAS-20 (*The Twenty-Item Toronto Alexithymia Scale*). MR imaging examinations were carried out with a 1.5T MR scanner by using an isotropic 3D SPGR sequence on the sagittal plane. Volumetric measurements of the hippocampus and the amygdala were performed by means of voxel-based morphometry method. Group differences in total volumes were assessed by means of analysis of variance (ANOVA); correlation analysis was performed to assess correlation among alexithymia, dissociation and trauma.

**RESULTS**

The analysis of the correlations confirms the hypothesis of a correlation among alexithymia, dissociation and trauma. The drug addicts group showed higher scores at the self-report tests and smaller amygdala and hippocampus volumes than the control group.

**CONCLUSION**

Volumetric reduction of the hippocampus and amygdala in drug addicts seems to be correlated with trauma and addictive behavior.

**KEY WORDS:** Alexithymia, hippocampus, amygdala

**Paper 87 Starting at 4:19 PM, Ending at 4:27 PM****Diffusion-Weighted Imaging and Apparent Diffusion Coefficient Evaluation of Necrotizing and Nonnecrotizing Viral Encephalitis**

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**PURPOSE**

The study was performed to evaluate the role of Diffusion weighted imaging (DWI) in the diagnosis of Herpes simplex