characteristics did not differ significantly among diagnostic categories in our EOD group. **Conclusions:** Degenerative disorders as causes of EOD are not rare. High clinical alertness is warranted to achieve correct and timely diagnosis.

**P2-312 RAPIDLY PROGRESSIVE DEMENTIAS: ETIOLOGIES FOUND IN A HIGH COMPLEXITY REFERRAL CENTER IN BUENOS AIRES**

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**Background:** Rapidly progressive dementias (RPD) are considered such, when the cognitive/psychiatric decline occurs acute/subacute. The time frame to define RPD varies, as well as the different etiologies. Important aspect to consider is potentially reversible causes requiring a prompt treatment. Few case series of RPD are published and information about it is useful in order to allocate healthcare resources. **Objective:** Describe clinical characteristic and the etiological causes of a series of patients with RPD at our center. **Methods:** An analytical observational cross-sectional study was performed with the information obtained from patients referred to the neurology department. **Results:** Patients were retrospectively included during 1/12/2009-31/12/2017. We compared baseline clinical, complementary exams, MRI and serologic characteristics. All patients received a comprehensive clinical, laboratory and imaging assessment. **Results:** ± ± 15.69 years, neurological examination was abnormal in 92.5% (N=25), with psychiatric symptoms at onset in 96.3% (N=26). The median LP-p in the RPD-AI was 53 (16-266), 85% (N=24) received immunomodulatory treatment. The most common cause of RPD-AI was Leucine Rich glioma 1 (LGI-1). **Conclusions:** At our center, potentially reversible dementias represented the most frequent etiology underlying RPD. As in other series, this highlights the importance of the thorough evaluation for RPD and start an early treatment upon clinical suspicion when RPD-AI is suspected.

**P2-313 SARCOPENIA AND MUSCLE FUNCTIONS AT VARIOUS STAGES OF ALZHEIMER DISEASE**

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**Background:** We investigated the prevalence of sarcopenia, factors associated with sarcopenia in elderly subjects with Alzheimer disease (AD), and differences in muscle functions of upper and lower extremities and gait speed at various stages of AD. **Methods:** We evaluated handgrip and knee extension strength, muscle mass, and gait speed in 287 elderly outpatients with probable AD (102 men and 185 women, mean age 82.0 ± 5.3 years), including early AD (n=77), mild AD (n=97), and moderate AD (n=113), and 48 those with normal cognition (NC) (18 men and 30 women, mean age 81.5 ± 4.9 years). Sarcopenia was defined according to the consensus of the Asian Working Group for Sarcopenia. **Results:** The prevalence of sarcopenia was significantly higher in early AD, mild AD, and moderate AD than in the NC (36%, 40%, and 54% vs. 15%, respectively). Age, body mass index, Mini-mental state examination score, and Charlson comorbidity index were associated with sarcopenia in subjects with AD. Decreased muscle strength and mass in the upper extremity was found in early AD, while decreased muscle strength without loss of muscle mass in the lower extremity was found in early and mild AD. Low gait speed was found in early AD and progressed with advancing dementia. **Conclusions:** Decreased muscle strength without loss of muscle mass in the lower extremity and low gait speed may be earlier non-cognitive features in AD. Alterations of muscle functions in upper and the lower extremities differ between stages of AD.

**P2-314 EARLY PREDICTION OF ALZHEIMER’S DISEASE BASED ON ONE-YEAR FOLLOW-UP COGNITIVE MEASURES USING DEEP RECURRENT NEURAL NETWORKS**

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**Background:** We develop a deep learning model based on recurrent neural networks (RNNs) to learn temporal dynamics of cognitive measures of individual subjects and build a prognostic model to predict conversion of mild cognitive impairment (MCI) subjects to Alzheimer’s Disease (AD). **Methods:** Cognitive measures of 822 MCI subjects at baseline, 6 months, and 12 months were obtained from Alzheimer’s Disease Neuroimaging Initiative.