

mechanism is unknown although intermittent hypoxia and reperfusion injury during apneas may have a role. The treatment of OSA may reverse the floppy eyelid syndrome.

Objectives: Our aim is to show the high prevalence of sleep apneas in a serie of seven patients previously diagnosed with FES.

Methods: We report seven subjects (all men, aged from 46 to 73 years old, mean 60) diagnosed with FES who were studied by polisomnography.

Results: Six of them (85%) had pathological apnea/hipopnea index (AHI) (ranged from 16.6 to 63), and in some cases with severe drops in oxygen saturation. Two of our subjects had predominantly central apneas. Only one patient was negative for OSA.

Conclusions: It is known the morbidity of OSA. Patients with FES should be considered for polisomnography studies since FES may be a presenting symptom in patients with undiagnosed OSA. In our serie we have found two patients with central apneas predominantly, (previously not described in the literature).

P24.12

Melatonin for sleep-electroencephalogram (EEG)

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Introduction: Sleep is known to provoke epileptiform activity in pediatric EEG's. Without sleep deprivation or medical sleep induction about 44% fall asleep spontaneously doing an EEG. Sleep deprivation cause parents and children considerable difficulties and discomfort.

Objectives: To study if melatonin could be used instead of sleep deprivation a clinical follow-up and evaluation of melatonin for sleep-EEG in respect of effect, safety, presence of epileptiform activity and experience of parent was performed.

Methods: Melatonin induced sleep-EEG was compared with sleep-deprived sleep-EEG. Melatonin was given at a dose of 3 mg (ages 2–4) and 6 mg (ages 5–17 years). An extra 3 mg was offered if there was no sleep after 30 min. Survey to a sample of parents who had experience of both examination methods.

Results: The group that received melatonin (n = 273, average age 7.8 years, 105 were given an extra dose) fell asleep in 80%, no serious adverse events were reported and epileptiform activity was found in 22%. The group that was sleep deprived (n = 191, average age 8.3 years) fell asleep in 78 % and epileptiform activity was found in 19%. Parent survey (answer frequency 17/28) showed that the majority preferred melatonin induced sleep-EEG.

Conclusion: There was no difference, in regarding of falling asleep frequency or yield of epileptiform activity between the groups. Younger children fell asleep more often after melatonin. Teenagers tend to fall asleep more often after sleep deprivation. We don't know if a higher dose of melatonin would help additional teenagers to fall asleep. Parents prefer melatonin induced sleep-EEG and using this method might leave us with an easier task to motivate parents and children to repeat sleep-EEG when needed.

Poster session 25. Stroke and neurorehabilitation

P25.1

ERP evidence of therapy-related reorganization of language of patients with post stroke chronic aphasia

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The brain processes of language recovery after stroke are poorly understood. Even related potentials (ERP) studies are increasingly used to assess language disorders and their evolution. Post-stroke aphasia (PSA) ERP were evaluated in a randomised, double-blind, placebo-controlled study of memantine and constraint-induced aphasia therapy (CIAT). Patients with PSA (>1 year of evolution) received memantine (10 mg twice daily) or placebo alone during 16 weeks, followed by combined drug treatment with CIAT (weeks 16–18) and drug treatment alone (weeks

18–20). Primary outcome measure was the Western Aphasia Battery-Aphasia Quotient (WAB-AQ). Patients performed a silent reading task (400 length-frequency controlled stimuli; STIM 2.0). EEG, ERP and root mean square (RMS) were obtained (IS 10–20; SCAN 4.1). Assessments were done at baseline and at weeks 16, 18 and 20. Patients treated with memantine alone compared with those on placebo showed significant improvement on the WAB-AQ ($p < 0.01$) associated with a significant ERP/RMS amplitude decrease ($p < 0.05$). Improvement on the WAB-AQ ($p < 0.001$) was even superior when memantine were combined with CIAT and this was associated with a significant ERPs amplitude increase ($p < 0.05$). Left and right RMS changes were similar suggesting bilateral cortical reorganization. Correlation analyses documented a relationship between neurophysiological and language measures ($p < 0.01–0.05$). ERP evidences are consistent with a role of memantine in PSA decreasing the glutamatergic overactivation of NMDA receptors re-establishing a neuronal activity that could facilitate language neurorehabilitation with CIAT.

P25.2

A preliminary assessment of the benefits of the addition of botulinum toxin A free of complexing proteins (Xeomin®) to a conventional therapy program on the function of people with longstanding stroke

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Introduction: It has been well established that a focused therapy program will improve the functional status of the person with a stroke even if they are more than 1 year beyond the event.

Objectives: To determine if botulinum toxin type A free of complexing proteins (Xeomin®) combined with therapy can facilitate improved upper-extremity (UE) functional status.

Methods: Participants: Convenience sample of 6 men and women (ages 36–77 y) with stroke more than 2 years after insult (range 2–6 y) who had tone greater than 3 on the Modified Ashworth Scale (MAS) for 2 joints in the involved UE. Subjects were consecutively recruited and treated in a non controlled trial. Subjects received Xeomin® combined with a defined therapy program in three week sessions. A single physician using electromyographic guidance injected all subjects.

Main outcome measures: The primary functional outcome measure was Disability Assessment Scale (DAS). Subjects were also assessed on physiologic measures including tone (MAS), range of motion, disability (Barthel Index) and pain (Visual Analogic Scale-VAS).

Results: All patients had at least moderate severe disability in their principal therapeutic target on the DAS. Four weeks after treatment, Xeomin® combined with therapy decreased the MAS score statistically ($P = 0.0018$) and improved the functional status of the subjects on the DAS ($P = 0.0203$).

Conclusions: Xeomin® combined with a focused traditional therapy program, reduced disability and muscle tone, enhanced the functional status, enhance Activities of Daily Living and was well tolerated in patients with post-longstanding stroke spasticity of the UE.

P25.3

Are motor imagery and action observations innate or learned mechanisms? A single-pulse TMS study

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Background: Motor imagery and action observation partly share common neurophysiological substrates, whose final common pathway is the primary motor cortex (M1). We investigated, by single-pulse TMS of right or left M1, whether repeated sessions of motor imagery and movement observation (i.e., learning effect) tonically modify corticospinal output as tested by the amplitude of motor evoked potentials (MEPs).

Methods: Single-pulse TMS was applied in 10 right-handed subjects over the right or left M1 in a randomized order, while subjects performed imagined movements or observed pinch grip actions, both involving the left or right First Dorsal Interosseous (FDI) muscle as "prime mover". To address the impact of learning, three recording sessions spaced 5–7 days were carried out in all subjects. MEPs were recorded bilaterally from the FDI muscles.