E.05

What is the weight of medications changes along treatment with vagal nerve stimulation?

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Vagus Nerve Stimulation (VNS) therapy has been widely recognized as an alternative for the treatment of drug resistant epilepsy (DRE), although modification of AEDs during VNS treatment could explain improvement in patients. We retrospectively assessed the efficacy of VNS in 30 adult epileptic patients treated with > 6 months follow-up. The criteria for implantation were the following: a) not candidate for resective epilepsy surgery, b) DRE, c) impairment of quality of life, d) no other option of treatment. We assessed sociodemographics, seizure etiology, seizure classification and AEDs used during treatment with VNS. We assessed adverse effects and efficacy. Responder rate was defined as >50 seizure improvement from baseline, Thirty patients (females-18, males-12; age 35.1+13.3) were included. After 6 months, 12 months, 24 months and 36 months, the response rate was as follows: 13/30(43%), 13/27 (48%), 9/22(41%) and 16/8 (50%), none of them were seizure free. Changes of AEDs were done in 57% of patients at 6 months, 43% at 12, 43% at 24, 43% at 24 months. Other outcomes will be discussed. Our study shows that VNS is an effective therapy although significant changes in medications were done along the therapy, therefore the real effect of VNS could be controversial

E.06

Brain death rates in severe blunt traumatic brain injury: comparison of decompressive craniectomy to a medically managed cohort

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Introduction: Decompressive craniectomy (DC) in severe traumatic brain injury (TBI) is controversial. The impact DC on cause of death is unclear in the literature to date. *Methods:* We performed an institutional retrospective review, from June 2003 to June 2013, of patients with severe blunt TBI undergoing DC whom subsequently died. We compared this group to a retrospectively matched cohort based: age, pre-hospital mRS, Marshall diffuse and TBI grades, Injury Severity Scores, and admission laboratory values. The goal was to determine the cause of death between those receiving DC and those managed medically. *Results:* Nineteen patients received DC and were compared to 16 retrospectively matched patients. The mean age of the DC and matched cohort were 47.1 and 43.6 years, respectively. The mean admission GCS/Marshall diffuse CT grades were 5.8/3.4 for the DC group, and 4.1/3.1 for the matched medical cohort. Overall, in the DC group 94.7% of the deaths occurred secondary to cardiac arrest after withdrawal of life sustaining treatment (WLST), with only 5.3% progressing to brain death. Alternatively, in the matched cohort 62.5% died of cardiac arrest post WLST, with 37.5% progressing to brain death. *Conclusions:* Progression to brain death appears to be more common in those severe blunt TBI patients treated medically compared to those undergoing DC.

E.07

Lidocaine for status epilepticus in adults

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Introduction: Our goal was to perform a systematic review of the literature on the use of intravenous lidocaine in adults for status epilepticus (SE) and refractory status epilepticus (RSE) to determine its impact on seizure control. *Methods:* All articles from MEDLINE, BIOSIS, EMBASE, Global Health, HealthStar, Scopus, Cochrane Library, the International Clinical Trials Registry Platform (inception to November 2014), and gray literature were searched. The strength of evidence was adjudicated using both the Oxford and GRADE methodology by two independent reviewers. *Results:* Overall, 13 studies were identified, with 11 manuscripts and 2 meeting abstracts. Seventy-six adult patients were treated for 82 episodes of SE/RSE. Patients had varying numbers of anti-epileptic drugs (AEDs), 1 to 12, on board prior to lidocaine therapy. During 69 of the 82 (84.1%) episodes of SE/RSE, phenytoin was on board. The dose regimen of lidocaine varied significantly. Overall, 70.7% of seizures responded to lidocaine, with complete cessation and greater than 50% reduction seen in 64.1% and 6.1% respectively. Patient outcomes were sparingly reported. *Conclusions:* There currently exists level 4, GRADE C evidence to support the consideration of lidocaine for SE and RSE in the adult population. Further prospective studies of lidocaine administration in this setting are warranted.

E.08

Effects of levodopa on cognition in healthy volunteers: implications for Parkinson's disease

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Background: Cognitive impairments are now recognized in Parkinson's disease. Some of these deficits owe to disease pathology itself whereas others are due to paradoxical effects of dopaminergic medications, such as levodopa. The dopamine overdose hypothesis proposes that dissimilar effects of medication on cognition depend on baseline endogenous dopamine levels in underlying brain regions. We sought to directly test this prevalent theory. *Methods:* We tested healthy adults, who presumably have optimal endogenous dopamine levels, in two sessions. Participants received 100/25 mg of levodopa/carbidopa in one session and an equal volume of placebo in the other. During each session, participants completed a probabilistic reversal learning task. The number of trials to task completion was used as a behavioural proxy of learning performance. *Results:* A paired t-test covaried with drug-placebo order revealed that healthy adults learned more poorly on levodopa compared to placebo. *Conclusions:* Our findings suggest that baseline endogenous dopamine levels are a critical factor determining the effects of dopaminergic medications on cognition, independent of Parkinson's disease pathology. Partitioning which cognitive functions are helped versus hindered by medication and improving our understanding of the underlying psychopharmacology of these effects is important for improving treatment strategies in Parkinson's disease.