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December 3, 2000
Investigators' Workshop - Morning Session I
8:00 am–9:30 am

IW.01
GLIA, NEURONAL EXCITABILITY AND EPILEPSY

Moderator: Edward H. Bertram, III, M.D.
Speakers: Charles Zorumski, M.D., Washington University, St. Louis, MO, Brian MacVicar, Ph,D., University of Calgary, Alberta, Canada, Harald Sontheimer, M.D., University of Alabama at Birmingham, Birmingham, AL, Bruce Ransom, M.D., University of Washington, Seattle, WA

Glial cells serve many functions in the development and maintenance of the central nervous system. One of these functions is the modulation of neuronal excitability through a variety of mechanisms. Epilepsy is associated with a number of changes in glial distribution and structure, changes that are collected under the general term of gliosis. At present we have little understanding of how these changes influence the process of epileptogenesis and the initiation of seizure activity. Two of the means by which glial cells are known to influence neuronal excitability are the modulation of the ionic milieu and the release and reuptake of excitatory and inhibitory neurotransmitters. These functions have been the target of a number of investigators in recent years. However, it is not known how the observed changes in the glial structure and population in epilepsy may affect these basic functions. In this symposium we will review the current state of knowledge concerning glial regulation of extracellular ionic makeup and neurotransmitter activity. We will also examine how glial cells themselves are changed in epilepsy. Finally, we will put this information into the context of overall nervous system excitability and discuss areas that may be explored to further our understanding of the role of glial cells in epilepsy.

December 3, 2000
Investigators' Workshop - Morning Session II
10:00 am–11:30 am

IW.02
GENE TRANSFER TECHNOLOGY AND EPILEPSY

Moderator: Matthew J. During, M.D., Thomas Jefferson University
Speakers: Howard F. Federoff M.D., Ph.D., University of Rochester, Rochester, NY
Robert M Sapolsky, Ph.D., Stanford University, Stanford, CA
Samuel W. Rabkin, Ph.D., Georgetown University, Washington, D.C.

Over the past five years, many of the major limitations preventing effective gene transfer to the nervous system have been addressed. In this workshop we will discuss developments in both established and new vector systems including improved efficiency and stability of gene transfer as well as regulatable systems and targeted vectors. We will discuss how gene transfer technology can yield insight into the pathophysiology of epilepsy by using somatic cell gene transfer as a tool for functional genomics and look at the effects of overexpressing candidate genes in defined brain regions. Moreover, we will present an overview of state-of-the-art technologies, the CNS gene therapy field in general and specific applications to epilepsy. Dr. Federoff will discuss the potential of gene transfer techniques for analysis of neuronal physiology and plasticity; Dr. Sapolsky will focus on applications of HSV vectors for neuroprotection and reducing excitability and excitotoxicity; and Dr. Rabkin will discuss specific approaches to epilepsy gene therapy including the development of GAD-expressing vectors to enhance GABA- mediated inhibition. Dr. During will review the field and suggest future directions including proposed clinical trials in temporal lobe epilepsy.

December 3, 2000
Investigators' Workshop - Afternoon Session I
12:30 pm–2:00 pm

IW.03
NEUROIMAGING AND FUNCTIONAL LOCALIZATION IN EPILEPSY

Moderator: Michael R. Sperling, M.D.
Speakers: Barbara E. Swartz, M.D., Ph.D., University Hospitals of Cleveland, Cleveland, OH, Jeffry Binder, Ph.D., Medical College of Wisconsin, Milwaukee, WI, Randall Buckner, Ph.D., Washington University, St. Louis, MO, Joseph Tracy, Ph.D., Jefferson Medical College, Philadelphia, PA

Neuroimaging techniques have been applied to map language, memory, and attention in people with temporal lobe epilepsy. This workshop will review the current state of knowledge regarding various cognitive and language mapping methods in normal individuals and persons with epilepsy. Speakers will also review pitfalls and difficulties associated with functional mapping. Dr. Binder will discuss language, Dr. Buckner will discuss long term memory, Dr. Tracy will review systems for attention, and Dr. Swartz will review studies of working memory. Lastly, the workshop will review the role of functional mapping as a tool to evaluate cognitive reorganization in epilepsy.

IW.04
FOREBRAIN SEIZURE NETWORKS: WHERE ARE THE THERAPEUTIC TARGETS?

Moderator: Carl L. Faingold, Ph.D.
Speakers: Karen Gale, Ph.D., Georgetown University, Washington, D.C., Dan C. McIntyre, Ph.D., Carleton University, Ottawa, ON, Canada, Craig D. Applegate, Ph.D., University of Rochester School of Medicine & Dentistry, Rochester, NY, Edouardo Hirsch, M.D., University of Strasbourg, Strasbourg, Cedex, France, Carl L.Faingold, Ph.D., Southern Illinois University School of Medicine, Springfield, IL

The ability to control the networks engaged in seizures by focal interventions offers exciting prospects for the therapy of epilepsy. The success of deep brain stimulation in the treatment of movement disorders has raised the possibility of applying this treatment modality to the therapy of seizure disorders. While initial clinical studies support the promise of this approach, there is now a great need to consider the full range of forebrain targets that are potential sites for focal therapeutic intervention. Basic research on forebrain networks as substrates of complex partial epilepsy has indicated that there are specific sites and pathways responsible for regulating changes in seizure susceptibility, initiation and spread within and between hemispheres. This information is now directly applicable to the prospects of applying deep brain stimulation to the treatment of epilepsy. This workshop will evaluate

RATIONALE: With advances in medicine and technology, older individuals are living into their 80's, 90's, and beyond. The elderly comprise the fastest growing segment of the population in the US. The incidence of unprovoked seizures is highest in this age group and is estimated to be 150/100,000. Treatment is complicated by the normal physiological changes of aging, comorbid diseases, and polypharmacy. METHODS: Eighteen VAMC's are participating in a cooperative study designed to evaluate the efficacy and tolerability of gabapentin (GPN), lamotrigine (LTG), and carbamazepine (CBZ) in the treatment of new onset seizures in patients ≥ 60 years old. Patients are randomized to GBP, LTG, or CBZ with target daily doses of 1500 mg, 150 mg, and 600 mg, respectively. Doses are reduced if adverse effects (AE) occur and increased to achieve seizure control. Primary outcome measure is retention at 52 wks. RESULTS: Presently, 333 patients have been enrolled. Mean age is 72.7 and 94.2% are males. EEG results were normal in 31.3%, epileptiform in 38.7%, focal slowing in 40.1%, and generalized slowing in 15.6%. CT/MRI findings were normal 18%, CVA 43.6%, small vessel disease 40.1%, diffuse atrophy 35%, and encephalomalacia 9.1%. Primary etiology was CVA 39.3%, unknown 32.6%, head trauma 7.4%, arteriosclerosis 7%. Seizure types are 38.3% CPS, 27.1% GTC, 14.3% SPS, and 20.3% mixed. Systemic SE reported were weight gain 24.2%, GI problems 15.5%, and weight loss 8.7%. Neurotoxicities consisted of sedation 25.9%, dizziness 14.7%, and gait disturbances 13.2%. Of those who could have completed 52 wks, 47.8% completed the trial. Reasons for termination are AE 19.4%, voluntary withdrawal 10%, death 7.2%, and uncontrolled seizures 3.3%. Concurrent disease are common and include HBP 64.4%, CVA 52.7%, cardiac disease 48.8%, diabetes 26.6%, and history of cancer 22.5%. Mean blood levels at 12 wks were GPN 8.9, LTG 3.27, and CBZ 6.47 μg/ml. CONCLUSIONS: Older patients with new onset seizures are more likely to have AE at introduction of antiepileptic drug(AED) but will likely be controlled if AED therapy is tolerated. Vascular disease is an important problem and contributes to etiology in the majority of cases.

H.12

SEMEN QUALITY AND TESTICULAR VOLUME IN MEN WITH EPILEPSY

Jouko I T Isojarvi, Eeva Rissanen, Kaisa Juntunen, Markku Paivansalo, Leena Tuomivaara, Univ of Oulu, Oulu, Finland.

RATIONALE:Low fertility has been reported in men with epilepsy, and this has been attributed to the use of antiepileptic drugs (AEDs). Furthermore, animal studies have suggested that valproate (VPA) treatment may be associated with testicular atrophy in rats and dogs. The aim of the present study was to evaluate semen quality and testicular volume in men taking carbamazepine (CBZ), oxcarbazepine (OXC), or VPA monotherapy for epilepsy. METHODS: Semen quality (sperm count, morphology, and motility) was assessed, and ultrasonography of the testicles was performed in 48 men with epilepsy and in 35 healthy control men of similar age. 13 of the men with epilepsy were taking CBZ, 14 OXC, and 21 VPA. RESULTS: Abnormally low sperm count was more common among CBZ (31 %, $p<0.001$) or OXC (14 %, $p<0.05$) treated men than among control men (0 %), whereas men taking VPA for epilepsy had reduced sperm motility ($p<0.05$). High frequency of abnormal spermatozoa was found in all treatment groups (CBZ: 31 %, $p<0.01$; OXC: 21 %, $p<0.05$; VPA: 29 %, $p<0.01$, compared with the control subjects: 3 %). The mean sum volume of the testicles was smaller in men on VPA (63.4±13.2 cm^3) than in the control men (80.8±23.0 cm^3) ($p<0.05$), but it was normal in men on CBZ or OXC. CONCLUSIONS:The results of the present study suggest that CBZ, OXC, and VPA may affect semen quality in men with epilepsy. In addition, VPA medication may be associated with reduced testicular volume. However, further studies are needed to evaluate the effects of epilepsy itself and AEDs on testicular structure and function.

December 6, 2000
Poster Session III: Psychosocial, Health Services Research, Pediatrics, Pregnancy, Women's Health Issues, Clinical Neurophysiology, Status Epilepticus, Neuropharmacology, Electrical Stimulation, Clinical Studies, Nursing, Behavioral, Epidemiology
7:30 am–6:00 pm

3.001

THE COST OF CONTINUING CARE OF PATIENTS WITH PARTIAL EPILEPSY IN ITALY. DATA FROM A MULTICENTER OBSERVATIONAL STUDY (EPISCREEN)

Paolo Tinuper, Patrizia Berto, Stefano Viaggi, Episcreen Group Lice, Neurological Inst., Univ of Bologna, Bologna, Italy; PBP consultants, Verona, Italy; LINK Italy, Modena, Italy; Italian League against Epilepsy, Italy.

RATIONALE: The economic impact of epilepsy has recently raised the interest of clinicians, care providers, and the pharmaceutical industry. The Episcreen Project is a multicenter longitudinal observational study of the Italian League against Epilepsy. The average cost per patient/year in the cases registered in the Episcreen database as at November 1996 was L 2726116 ($US 1767). This cost is influenced by age, type of epileptic syndrome and modality of referral to the epilepsy centre. The majority of the cost is represented by hospitalisation and diagnostic procedures leading to diagnosis of the epileptic syndrome. Aim of the present work was to evaluate the direct costs after two years of follow up in a subset of patients with partial epilepsy. METHODS: In the same population of 1215 patients with partial epilepsy (848 adults and 367 children) enrolled in our first study, we analyzed direct costs (hospital admissions, day-hospital visits, specialist visits, laboratory and instrumental examinations, drugs), after a two year follow-up period (1997–1998). Cost variables were calculated using published costs and/or national tariffs. _ RESULTS: This analysis showed a consistent reduction of costs during follow-up, with a relative increase in cost of therapy compared with costs of hospitalisation and tests. Costs increased when: seizures remained frequent, seizures appeared during the waking state, seizures provoked sudden falls, or seizures produced recurrent status epilepticus. Patients treated with polytherapy required more resources than those in monotherapy and presence of complex partial seizures increased total costs in children. Symptomatic epilepsies also implied a higher resource consumption than cryptogenetic and idiopathic conditions. CONCLUSIONS: Our analysis showed that in partial epilepsies most of the cost derives from procedures related to diagnosis (hospitalisation and diagnostic procedures), whereas costs tend to decline during the follow-up period. Higher costs during follow-up are related to the type of epileptic syndrome, severity of seizures and need for polytherapy.

3.002

BIOPSYCHOSOCIAL INTERVIEWS DETECT CRUCIAL EMOTIONAL CONCERNS MISSED ON QUALITY OF LIFE AND MOOD SURVEYS IN EPILEPSY PATIENTS

Sandy F Hamberger, Adarsh Gupta, William B Barr, Joanne Loughlin, Deborah M Weisbrot, Alan B Ettinger, North Shore-LIJ Comprehensive Epilepsy Ctr, New Hyde Park, NY; U M C at Stony Brook, Stony Brook, NY.

RATIONALE: While the recent introduction of quality of life and mood surveys into epilepsy patient evaluations can help screen for emotional concerns in epilepsy patients, complete reliance upon these measures may obscure important psychosocial issues. Some patients with emotional distress answer questions to minimize symptoms. Further, survey scores lend little insight into the specific issues of concern in patients lives. In contrast, an interview conducted by an experienced epilepsy social worker can establish a quick rapport with the patient, and potentially elicit information about emotional issues and stressors related to epilepsy. A skilled interviewer observes a patients affect and

3.101

ANTIEPILEPTIC DRUG LEVEL MONITORING DURING PREGNANCY IN WOMEN WITH EPILEPSY

Page B Pennell, Joan M Gleba, Sandra D Clements, Emory Univ Sch of Medicine, Atlanta, GA.

RATIONALE: A primary goal during pregnancy in women with epilepsy (WWE) is optimal seizure control. However, plasma levels of antiepileptic drugs (AED) decline during pregnancy and precipitous drops may provoke seizures. Free levels often fall less than total levels, but they still decline. The AAN QSS Practice Parameter on management issues for WWE recommends monitoring free AED levels at the beginning of each trimester and in the last month of pregnancy for the stable patient, with additional levels for seizure occurrence, side effects, and noncompliance. However, some individual authors still recommend monthly monitoring of AED levels for all patients. METHODS: Nine consecutive pregnant women in the Emory Epilepsy Clinic were asked to obtain monthly total and free AED levels. Six of these patients were compliant with medication regimens and blood draws and did not have significant emesis. Additional levels were obtained when clinically indicated. All seizures and AED dosage adjustments were recorded. The percent declines in AED levels were calculated between each blood draw. Free AED levels were preferentially used for comparison when available. Decreases of ≥20% were considered significant. RESULTS: AED dosages were increased in all 6 patients during pregnancy. Three WWE had no significant decreases in AED levels. All 3 were on CBZ. Patient A (PHT) had 4 significant declines out of her 9 AED level comparisons, Patient B (VPA) 4/8, and Patient C (CBZ) 3/4. Patient A had seizures only with AED level declines, Patient B had seizures both with and without declines, and Patient C had no seizures. The AED level declines occurred in all 3 trimesters for all 3 drugs. CONCLUSIONS: Three of 6 WWE experienced significant declines in AED levels from just one month to the next despite stable or increasing AED dosages. No particular pattern was present for AED type or for which trimester the declines occurred in. AED level declines tended to provoke seizures in at least one patient. Given the substantial individual variability in AED level declines during pregnancy and the goal of seizure control, monthly free AED level monitoring during pregnancy may be warranted for all WWE.

3.102

MENOPAUSAL EPILEPSY: EVIDENCE SUPPORTING MENOPAUSE AS A FACTOR IN THE NEW ONSET OF SEIZURES IN MATURE WOMEN

Syed I Shaukat, Allan Krumholz, Fariha Abbasi, Univ of Maryland Medical Ctr, Baltimore, MD.

RATIONALE: Hormonal changes associated with menopause are factors that could potentially influence the onset of seizures in mature or older women. This study examines the causes of new onset seizures in women during menopause and compares those causes to the etiologies of seizures in similarly aged men. METHODS: We identified all women with seizures beginning around menopause seen at the University of Maryland Medical Center between the years 1994 and 2000. Only patients with recurrent unprovoked epileptic seizures were included. Menopause was defined as the absence of periods for 12 months, and women were divided into two groups: 1) peri-menopausal (those with menopausal symptoms or within two years of menopause) and 2)post-menopausal (two years or more after menopause). The causes of seizures were then categorized as a) symptomatic or b) cryptogenic (idiopathic), and the etiologies in women were compared to those in age matched (within 3 years) male controls from the same patient population. RESULTS: We identified 22 women with new onset seizures in or around menopause. In 12 of the women epilepsy began peri-menopausally (group 1). For 10 of these 12 women (73%), their seizures were judged to be cryptogenic, with no identifiable cause. In contrast, age matched male controls had no identifiable cause in only 17% of patients, and this difference is statistically significant ($p = 0.0017$). In addition, such a difference between men and women was not found for women who were much beyond the onset of their menopause. Among the 10 postmenopausal women (group 2), who were generally older than the peri-menopausal group, a cause for seizures could be identified in 7 (70%), the majority, and there was no significant difference compared to age matched male controls. CONCLUSIONS: Epilepsy beginning in or around the onset of menopause is a significant problem that cannot be entirely attributed to other causative factors. Indeed, we propose that there may be a "menopausal epilepsy," perhaps similar conceptually to "gestational epilepsy," in which hormonal influences play a significant role in the new onset of seizures in some women.

3.103

CATAMENIAL PATTERN IN A POPULATION OF WOMEN WITH REFRACTORY EPILEPSY

Scott D Pollock, Mark C Spitz, Jacquelyn L Bainbridge, Sheri J Friedman, Univ of Colorado Health Science Ctr, Denver, CO.

RATIONALE:Catamenial Epilepsy is historically defined as recurrent seizures that are correlated with certain phases of a woman's menstrual cycle. Anywhere from 33–50% of women with epilepsy report that their seizures fluctuate with their menstrual cycle. Recent studies also report a correlation between menarche and initial onset of seizures. This study is being undertaken to identify those in our patient population who have a catamenial seizure pattern and to determine if this pattern is associated with more refractory seizures. This preliminary data will be used to then stratify patients into particular catamenial patterns (Herzog, et al. 1997). This information may be useful in directing more rational therapy in this patient group. METHODS:A random preliminary survey was performed on 40 of our female patients with refractory seizures. Another 100 surveys have been distributed and are pending. The patients were asked questions regarding menstrual and seizure patterns, and medication history. Their charts were also reviewed. These patients have also agreed to keep a 3 month seizure and menstrual diary to provide more data. RESULTS:Of the 40 patients initially surveyed, 50% reported a catamenial pattern. Of these patients, 10 experienced onset of seizures within 1 year of menarche. Four more patients worsened at the onset of menarche. Eight patients had more seizures premenstrually, 10 patients during menses, and 2 patients at mid-cycle. Partial seizures were the most prevalent in both groups. Mean age and age range were similar for both groups. The catamenial group was taking an average of 2.5 antiepileptic drugs (AEDs), having failed an average of 3 prior AEDs. The other group was on an average of 1.5 AEDs with past failure of an average of 2. CONCLUSIONS:The finding of 50% reported catamenial pattern among our female patients is consistent with the current literature. In this preliminary study we did not find an association between epilepsy type and prevalence of a catamenial pattern. There appears to be a trend in failure of AED therapy and a catamenial pattern.

3.104

SUCCESSFUL TIAGABINE MONOTHERAPY DURING PREGNANCY AND LACTATION: CLINICAL AND SERUM DATA.

Vernon M Neppe, Pacific Neuropsychiatric Institute, Seattle, WA, Seattle, WA.

Rationale: This paper describes possibly the earliest reported case of a successful pregnancy with tiagabine monotherapy, plus monitored tiagabine blood levels. Methods: A 32 year old female with complex partial seizures and secondarily generalized tonic clonic seizures (onset as teenager, idiopathic, left and right temporal foci) had been well-controlled and almost perfectly compliant on tiagabine monotherapy (20–24 mg per day) since mid-1993 (as part of an FDA approved phase 3 premarketing drug study) and had 10 seizures in 6.6 years. Prior to that she was having by history 4–7 seizures/ year on phenytoin alone. Results: From February to November 1999, during a planned pregnancy, she maintained tiagabine therapy at the same dose (22–24 mg/ day). She was carefully monitored. She had seizures at weeks 8 and 10 after last menstrual period on 22 mg/ day; and one in second trimester on 24 mg /day (but forgot her medication). She gave birth to a healthy baby in November 1999 and has breast fed the baby. During lactation, it was necessary to lower the dose from 24 to 20 mg because of toxicity. Blood level monitoring was done. Discussion: Though a single case

history, these results contribute particularly given the stringent control data before and during pregnancy and lactation, the sane dosage and the blood level comparisons.

3.105

ANALYSIS OF ICTAL EEG BY INDEPENDENT COMPONENT ANALYSIS

Hyunwoo Nam, Sang Kun Lee, Seung Kee Han, Jong Bai Oh, Tae Gyu Yim, Seoul Municipal Boramae Hosp, Seoul, South Korea; Seoul National Univ, Seoul, South Korea; Chungbuk National Univ, Chungju, South Korea.

RATIONALE: Independent component analysis(ICA)is a new method of analyzing EEGs and there have been reports on successful artifact removal and interictal source localization. We wanted to know whether this method could also be applied to the ictal EEGs for an accurate source localization. METHODS: Eleven ictal EEGs from 7 right medial temporal lobe epilepsy(TLE) patients and 13 EEGs from 7 left TLE patients were analyzed. Digital EEG signals were recorded using the international 10–20 systemwith additional T1 and T2 tracings.Twenty tracings were analyzed by ICA algorithm into independent components. Among them, the tracings which showed changes into rhythmic waves and evolved were considered to represent ictal rhythm and their sources were localized by referring them to the mapping results. RESULTS: A considerable portion of artifacts and ictal rhythms was successfully separated. Among 11 EEGs from the right TLE patients, anterior temporal localization was possible in 5 EEGs and the frontal and temporal independent ictal sources were found in 4 EEGs. The remaining 2 EEGs showed bitemporal ictal rhythm. In 13 EEGs from the left TLE patients, anterior temporal localization was possible in 5 EEGs and frontal and temporal independent ictal sources were found in 4 EEGs. Two EEGs showed ipsilateral diffuse temporal onset and the remaining 2 showed bitemporal onset. CONCLUSIONS: Some ictal rhythms seemingly originating from one source in the conventional EEG are actually mixtures of waves from multiple ictal generators. This study was supported by the fund from Korean Ministry of Health and Welfare.

3.106

LONG-TERM EVALUATION OF EEG DYNAMICS BASED ON NON-LINEAR ANALYSIS IN HUMAN TEMPORAL LOBE EPILEPSY

Vincent Navarro, Michel Le van Quyen, Jacques Martinerie, Michel Baulac, Francisco J Varela, Neurodynamics Group, LENA CNRS UPR 640, Salpetriere Hosp, Paris, France.

RATIONALE: Non-linear analysis of the EEG can detect pre-ictal changes several minutes before seizure onset in mesial temporal lobe epilepsy (MTLE). Previous studies were carried out on EEG periods that preceded seizure onset for less than one hour. Little is known concerning the modifications of the EEG dynamics during longer time expanses, and correlations with electro-clinical state. Here we evaluate the specificity and sensibility of our EEG analysis method. METHODS: We analyzed long epochs of intracranial or scalp EEG, ranging from 4 to 24 hours continuously, for 3 patients, for a total of 120 hours. Data were obtained from EEG-video recording sessions of patients suffering from intractable MTLE. As a non-linear indicator of dynamics, we applied the similarity measure (NeuroReport, 1999; 10, 2149-2155), that compares the signal dynamics of successive tested windows to that of a 'reference' period, for each of the 27–32 electrodes. In a parallel way, we inspected EEG and video to allow a correlation between the dynamical changes and electrical (slow waves, spikes. . .) or/and clinical changes. We also evaluated the reproducibility of the method by studying long EEG periods containing or not a seizure during different days of recording in the same patient. RESULTS: For long periods distant from seizures during stable physiological state (awake or sleeping) with moderate inter-ictal epileptic activity, changes of the similarity index are below the threshold of statistical signification (5σ). Only transitions between physiological states or major enhancement of inter-ictal epileptic activity can generate sustained significant deviations of the similarity index. Use of different 'reference' states improves the specificity of our method. The intra individual reproducibility appears to be good with a possible correlation between the importance of the ictal EEG abnormalities and the ability to anticipate the seizure. CONCLUSIONS: Sensitivity of the method allows to faithfully and synthetically reflect the EEG dynamics. Specificity of the method confers potential for current clinical use in order to anticipate seizure onset in real time condition.

3.107

THE ROLE OF VIDEO-EEG TELEMETRY IN PATIENTS WITH UNILATERAL HIPPOCAMPAL SCLEROSIS.

Catherine A Scott, David R Fish, National Hosp for Neurology and Neurosurgery, London, United Kingdom.

RATIONALE: During assessment for epilepsy surgery, patients undergo many costly and time consuming tests and more recently the necessity to record ictal electrographic and clinical features has been questioned in some of the conditions amenable to surgery. We retrospectively reviewed our practice to see if useful information was obtained in the group of patients with unilateral hippocampal sclerosis (HS). METHODS: From 400 consecutive patients who entered the surgical program after January 1995 there were 191 patients with unilateral HS, identified on high resolution magnetic resonance imaging (MRI). All patients underwent continuous video EEG telemetry (mean duration of recording 119 hours) with a minimum of 20 channels of EEG. RESULTS: Following scalp telemetry, surgery was recommended in 128/191 (67%). It was deferred in 37 patients for various reasons including improved seizure control and alternative management strategies. 26 patients remained. 11/26 had intracranial studies because of apparently discordant scalp findings, in 9 of these patients subsequent intracranial findings were concordant with the MRI. 3/26 patients had non-epileptic attacks and did not proceed; 1 patient died pending further investigations and 2 were rejected because of psychiatric issues. Only 9 were rejected solely on the basis of the scalp telemetry with extratemporal electroclinical features. CONCLUSIONS: In our experience video EEG telemetry provides useful information in a decreasing proportion of patients with unilateral HS undergoing a surgical assessment. In this group, increasing dependence on MRI findings and the development of algorithms, based on clinical seizure type and other non-invasive assessments should be able to predict those patients who are likely to be rejected as surgical candidates, and may mean that in the future ictal recordings can be avoided.

3.108

DIFFERENCE OF EEG DIPOLE PROPAGATION BETWEEN SPIKES WITH MYOCLONIC JERKS AND WITHOUT JERKS IN PATIENTS WITH EPILEPSIA PARTIALIS CONTINUA

Ayako Ochi, Hiroshi Otsubo, Shiro Chitoku, Amrita Hunjan, James T Rutka, Sylvester H Chuang, Ken-ichi Kamijo, Toshimasa Yamazaki, O. Carter Snead, The Hosp for Sick Children, Toronto, ON, Canada; Fundamental Research Lab, NEC Corp, Tsukuba, Japan.

RATIONALE: Dipole localizations of epilepsia partialis continua (EPC) have been reported to be localized in pre-central gyrus using electroencephalography (EEG) and magnetoencephalography (MEG). We applied moving dipole modeling to delineate electrophysiological mechanism of myoclonic jerks in EPC. We studied difference of dipole propagation between EEG spikes with myoclonic jerks and without jerks in two patients with EPC. METHODS: Two patients with EPC (patient A, 12 year old boy with left centro-parietal cortical dysplasia; patient B, 7 year old girl with right hemispheric Rasmussen's syndrome) were studied. Video EEG telemetry with 19 scalp electrodes and electromyography of the wrist extensor muscle that was contralateral to the brain lesion were simultaneously recorded. Sampling rate was 200 Hz. We selected spikes with and without myoclonic jerks by visual inspection, analyzed the dipole localizations using a single moving dipole method on a 3-shell spherical model, and overlaid the resultant data onto a co-registered MRI. We selected dipoles with goodness of fit >95%. RESULTS: The dipoles of the spikes with jerks were