Presentación de trabajos en cartel

Presentation of poster sessions

Saturday 3rd July 2004
15:00 – 16:00

P13
THE MULTIPLE SCLEROSIS (MS) AND EPILEPSY ASSOCIATION

KOUNTOURIS D,* KOUTSOUBELIS K*
** NEUROLOGICAL DIAGNOSTIC CENTRE, ATHENS, GREECE*

PURPOSE: We analyzed the pathogenia of epilepsy on MS, by analyzing the mechanisms that connect the two diseases through 24 h electroencephalography (EEG).
METHODS: We included 186 patients (128 females and 58 males) of a mean age of 36.5 ± 12.2 years. During the disease duration of 8.5 ± 4.2 years, recordings of 24 h EEG took place. The variables studied were background and epileptogenic activity, the sleep phases, the disorders and the different focal abnormalities. All the results were estimated according to the clinical picture of the patient.
RESULTS: On 15 patients, the 24 h recording was not estimated due to technical reasons. On 157 patients clear pathological elements were recorded, with 152 of them with epileptogenic findings. Five showed local abnormalities and 14 essentially had not any pathological findings. Fifteen patients that had reported epileptic fits in the past had extreme pathological EEG with focal disturbances.
CONCLUSIONS: The 24 h EEG recording shows a narrow pathological relationship of MS with Epilepsy. Over the diagnostic value on the cryptogenic epilepsy on the research on MS, can be a particularly useful tool for the treatment assessment.

P14
EPILEPSY IN VENEZUELA: POSSIBLE SOLUTIONS

GONZALEZ DEL CASTILLO BH,* PORRAS F,* BLANCO EB,* PENALOSA C,* D'SUZE C,* LOSCHER-BLANCO AM*
** LIGA VENEZOLANA CONTRA LA EPILEPSIA, CARACAS, VENEZUELA.*

PURPOSE: The main objective is to elaborate an economical analysis project for its application after revising the prevalence and causes of epilepsy.
METHODS: Descriptive, transversal, and retro-prospective studies for the analysis.
RESULTS: 1- Surveyed population in six communities of different regions of the country was of 34,772 persons. The cases with Epilepsy were 350 with a prevalence of 10.70 x 1,000. The highest prevalence rate was of 22 x 1.000 and the lowest 4.2 x 1,000 (average range of 11.15 x 1,000) 2- Retrospective study: Late onset Epilepsy seizures: total of cases: 389. With Epilepsy: 137. Neurocysticercosis: total of cases: 38 (27.73%) 3- Retrospective study: (1990-2000) Language disorders as Epilepsy's clinical expression: 300 cases predominated male sex: 59%; 75% with few or none economical income; Encephalocranial traumatisms: 42% 4- Retro-prospective study: (1990-2002) Total cases: 137; Partial Epilepsy of perinatal cause in female sex: 57%.
CONCLUSIONS: The etiologies and prevalence justifies the necessity of studying cost/benefit, specifying the negative economical impact on Venezuela to achieve better influence in the public health areas, and to allow the creation of Epilepsy care units in the whole country, to establish prevention policies, to achieve continuing medical education, to support social plans for the attention on diagnosis and treatment at lower costs, capacitating the community to achieve the incorporation of the Epileptic patient to a productive life.

P15
PSYCHOSIS AND EPILEPSY. CLINICAL AND EPIDEMIOLOGICAL ASPECTS

MENDOZA-SILVA M,* RUBIO-DONNADIEU F,* GARCIA-PEDROZA F,** LOPEZ-GUTIERREZ F*
** PRIORITY PROGRAM OF EPILEPSY, NATIONAL INSTITUTE OF NEUROLOGY AND NEUROSURGERY, MVS. SECRETARIAT OF HEALTH, MEXICO CITY, MEXICO ** NATIONAL INSTITUTE OF HUMAN COMMUNICATION, SECRETARIAT OF HEALTH, MEXICO CITY, MEXICO.*

BACKGROUND: It is accepted that epilepsy predisposes certain kinds of mental disease, mainly psychosis; these findings were based on calculations in groups of selected and uncontrolled patients that epidemiological studies did not support. We wanted to know if epidemiological methods could predict this predisposition to psychosis in epileptic patients.

METHODS: We used a representative sample of 70 epileptic patients from the municipality of Comalcalco, Tabasco (Mexico, population 140,000) with a prevalence of epilepsy of 20/1,000. A neurological and psychiatric evaluation was performed to determine if they had a psychiatric disorder in agreement with DSM IV and CIE10 classifications.
RESULTS: Fifty-seven epileptic patients were evaluated, and none had psychotic symptoms. 91.3% were free of other psychiatric symptoms with only 8.7% having symptoms that were diagnosed as personality changes (DSM IV). These were associated to a certain degree of mental retardation and/or other neurological sequelae. One male patient (1.7%) had had a psychotic episode 6 years prior to this study, having been hospitalized and started on neuroleptics, that he currently takes.
CONCLUSIONS: In our study, epilepsy is poorly associated with psychiatric symptoms, and in a number that is similar to that of general population, for that, it cannot be affirmed that epilepsy predisposes to psychosis.

P16
THE NEW PROPOSED DIAGNOSTIC SCHEME FOR PEOPLE WITH EPILEPTIC SEIZURES AND EPILEPSY ILAE (2001) APPLIED TO AN URBAN COMMUNITY OF HAVANA, CUBA

POZO ALONSO D,*
POZO LAUZÁN D,** DÍAZ HERNÁNDEZ ML***
** FEDERICO CAPDEVILA POLICLINIC, HAVANA, CUBA.*
*** WILLIAM SOLER CHILDREN'S HOSPITAL, HAVANA, CUBA.*
**** FEDERICO CAPDEVILA POLICLINIC, HAVANA, CUBA.*

PURPOSE: To investigate the prevalence rate and main clinical characteristics of epileptic seizures in an urban population.
METHODS: An epidemiological study was conducted among 32,523 residents of the community of Capdevila, Municipality of Boyeros, Havana, Cuba from October 2000 to November 2002, using The New Proposed Scheme For People with Epileptic Seizures and Epilepsy -ILAE-2001.The epileptic seizures were only taken in consideration. A questionnaire and a complete neurological examination were performed by specialists of family medicine with the supervision of neurologists.
RESULTS: We detected 151 epileptic patients. The lifetime prevalence rate was 4.64/1,000 inhabitants. The age-specific prevalence ratio was highest among the group age 10-14 years (9.23/1,000 inhabitants). Sex-specific prevalence rate did not significantly differ. The most common type of seizures was focal (57%): motor type was more frequent (27.2%), followed by secondarily generalized seizures (14.2%) and sensory seizures (13.9%). Generalized seizures were observed in 41% of patients: tonic-clonic seizures were most common (23.8%), followed by typical absences (6%), myoclonic (2%), atypical absences (1.3%), and epileptic spasms (0.7%). Perinatal etiology was the most frequent (27.8%); in these patients, hypoxia predominated. A family history of epileptic seizures was present in 19.9% of cases.
CONCLUSIONS: Our study showed a lifetime prevalence rate similar to developed countries. The application of The New Proposed Diagnostic Scheme for People with Epileptic Seizures and Epilepsy -ILAE-2001 in an urban population was useful in the recognition of the epileptic seizures and its types.

P17
CLINICAL AND ELECTROENCEPHALOGRAPHIC CHARACTERISTICS OF ASTATIC EPILEPTIC SEIZURES IN A POLYGRAPHIC STUDY

HERNANDEZ M,* PEREZ M,* GARZA S,* SUASTEGUI RA*
** HOSPITAL INFANTIL DE MÉXICO "FEDERICO GÓMEZ", MÉXICO.*

PURPOSE: The epileptic seizures with negative motor events are: astatic seizures or atonic seizures and drop attacks; there are nonepileptic causes of drop attacks, so it is important the polygraphic registry with video EEG and electromyography.
METHODS: We carried out a polygraphic study to patients with diagnose of clinical astatic seizures. We made electroencephalogram using the international system 10-20, and additionally electrodes in deltoid and quadriceps during vigil and sleep were used.
RESULTS: There were 7 men and 5 women. During interictal period: One showed normal activity. The abnormal feature was generalized, continuous paroxysms of acute and slow waves, with bud pattern attenuation - continuous activity of acute waves in bilateral front-central regions, with end unloading slow wave in anterior temporal regions. During sleep it was obtained in 8 patients and all were abnormal: - Poor integration of graphoelements of sleep - Buds of frequent paroxysms of complex end polispike generalized of medium to high voltage, 2 - 3 seconds. - the ictal period we observed: - generalized paroxysms of ends and polispikes of medium to high voltage with later 2 duration of 1 to seconds with attenuation. - Buds of paroxysms of acute waves, acute slow waves in bilateral centroparietal regions with attenuation. The electromyography showed in 8 patient astatic events without myoclonics and in 3, astatic events with positive EMG.
CONCLUSIONS: the abnormal activity predominantly observed in centroparasagital regions, getting worse in slow sleep. A close relationship between the

electroencephalographic pattern and the clinical one was not observed.

P18
STURGE WEBER SYNDROME: EXPERIENCE IN PEDIATRIC NEUROLOGY DEPARTMENT AT NATIONAL MEDICAL CENTER " 20 DE NOVIEMBRE"

PALOMARES VALDEZ E,*
GUTIERREZ MOCTEZUMA J,* ANDRADE BAÑUELOS A*
** PEDIATRIC NEUROLOGY DEPARTMENT AT CENTRO MÉDICO NACIONAL "20 DE NOVIEMBRE", MEXICO CITY, MEXICO.*

BACKGROUND: The Sturge Weber Syndrome (SWS) is characterized by a facial angioma and a leptomeningeal angioma and is associated with intractable seizures, glaucoma, hemiparesis and mental retardation.

METHODS: We described the clinical, radiological and electroencephalographic features of patients with SWS that were treated during the last five years in our department. We also described their clinical evolution and complications.

RESULTS: We studied five patients with SWS, 3 males and 2 females, with an average age of 4 years 7 months. The average age at diagnosis was 6 months. Four of them have mainly motor partial seizures. They were treated with different antiepileptic drugs during a long follow-up period. Some of them required three or four antiepileptic drugs. Three of them developed status epilepticus in 3-5 times. The EEG showed occipital asimetry with slow activity and cortical damage. Lower amplitude of left hemisphere and cortical damage. Lower voltage at left occipital area. The SWS frequently had intractable epilepsy, that implies that all therapeutic attempts with single of combined antiepileptic drugs have failed for a sufficient period of time, even if they have therapeutic serum levels of the drug. Four of our children have mainly motor partial, and three of them developed epileptic status more than twice.

CONCLUSIONS: The SWS is associated with a structural epileptogenic lesion limited to one hemisphere; SWS requires the use of multiple antiepileptic drugs. Many of them required surgery, but in our department we don't have that possibility. The structural pathology is usually associated with contralateral hemiparesis, and in such cases the removal of the entired hemisphere causes not additional neurologic deficits, and offers an excellent chance of remission of seizures.

P19
THE HIPPOCAMPAL SCLEROSIS AS A HARD CONTROL EPILEPSY CAUSE IN CHILDREN

VERGARA J,* PRADERE A,* COLEGIAL C*
** HOSPITAL LA MISERICORDIA, UNIVERSIDAD NACIONAL DE COLOMBIA, COLOMBIA.*

PURPOSE: To distinguish the hippocampal sclerosis presence since the first year of life.

METHODS: Our project is taking place at the Hospital La Misericordia, the biggest and referential pediatric hospital in the country. Inside the epilepsy surgery program, in 30 of them found as hystopathologic diagnostic HE; as in each case was determined the location of the pacemaker and the symptomatologic area by MRI, video EEG, Cognitive Evoked potential, physical therapy and language. The surgery was made by the same surgical team, always identifying the hippocampus and saving it (without suction) totally, including the Fimbria's first part and the Amygdala. Also the neocortex was taken with the conventional parameters.

RESULTS: From the 30 children with typical HE hystopathological results, 17 of them were between 1 and 14 years old. In 16 of the 30 children, we found exclusive HE results; in 6 we found HE and dysplasia; and in 8, HE and encephalomalacia. We distinguished that in 8 of them all the CA sectors were involved. The paraclinical study that got nearest to the hystopathological result was MRI, being suggestive in all the patients, and specific in 21 cases. Nine left and 10 right temporal lobectomies were realized. Multilobar surgery was made in 11 and in 4 hemispherectomy. According to the Engel's postsurgical outcome, all the children were in 1A - 1B clinical states.

CONCLUSIONS: The HE is not infrequent in children. In Latin America the surgical treatment in children with EMT must be realized early, before using all the antiepileptic drugs.

P20
EFFICACY AND TOLERABILITY OF RISPERIDONE IN THE TREATMENT OF DISRUPTIVE BEHAVIOR IN CHILDREN WITH EPILEPSY

BARRAGÁN-PÉREZ E,* GARZA AGP,*
FONSECA LFM,* HERNANDEZ JHA*
** HOSPITAL INFANTIL DE MÉXICO "FEDERICO GÓMEZ", MÉXICO.*

PURPOSE: Risperidone is a new atypical antipsychotic drug proved to be effective in reducing disruptive behavior in children with pervasive development disorders, but there is a little information about the effects over seizures and interactions with antiepileptic drugs. The objective of this

study was to evaluate the efficacy and safety of risperidone in this group of patients.

METHODS: This is a single centre prospective, open-label study on 18 patients, ages 5-12y. All patients have epilepsy (either partial or generalized), disruptive behavior and are treated with AEDs. An individualized flexible titration of risperidone starting with 0.25 mg/day to a maximum of 1 mg/day; a gradual adjust dosage was made to obtain optimal efficacy and minimal side effects. The impact was evaluated with the global clinical improvement and peer scales.

RESULTS: All patients completed the study. Sixteen of 18 patients (89%) were responders according to the definition, and 9/18 patients showed also improvement of behavior/ cognition. Side effects were observed in 4 (22%), the most frequent was drooling and increase in appetite. Only one patient increased the number of seizures. The antiepileptic levels did not have any variations.

CONCLUSIONS: In this open clinical study, risperidone appears to be an effective and safe treatment for children with epilepsy and disruptive behavior. Double blind cross over studies are required to substantiate these findings

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P21
FREQUENCY OF EPILEPSY, AND PREDOMINANT SEIZURE TYPE IN 27 AUTISTIC CHILDREN

PADILLA-GÓMEZ A,* GUTIÉRREZ-MOCTEZUMA J*
** DEPARTMENT OF PEDIATRIC NEUROLOGY.*
NMC NOVEMBER 20, ISSSTE, MEXICO.

PURPOSE: Autism is a behavioral syndrome defined as restriction or impairment of reciprocal social interaction and communication in combination with restriction of the repertoire of behavior and of imagination. Epilepsy has been described as an associated symptom in children with autistic spectrum disorder. Reports of the frequency of epilepsy in autism range from 5%-38%, one peak occurs before age 5 years and the other (more than a third of autistic children) in adolescence after 10 years. All seizures type can be associated with autism. Both, the prevalence of epilepsy and the types of seizure seem to vary with the populations studied.

METHODS: We studied 27 autistic patients, 18 males and 9 females, age varied from 2 to 15 years old. We reapplied the Rutter's criteria for autism to confirm that they had pure autistic disorder, we recorded the predominant seizure at time of autistic disorder in each patient.

RESULTS: Thirteen (48.14%) patients had epilepsy; 8 (29.6%) had Lennox Gastaut Syndrome (LGS: 7 symptomatic, and 1 criptogenic) and 3 (42.8%) of the symptomatic group had tuberous sclerosis (TS). Nine patients (69.2%) with epilepsy (including LGS group) had tonic-clonic seizures; 2 patients (15.3%) had secondary generalized partial seizures; one (7.6%) atonic seizures, and other (7.6%) generalized tonic seizure.

CONCLUSIONS: The high frequency of epilepsy in autistic children lead to consider epilepsy as a cardinal symptom of autism more than just an associated symptom. It has come arise the LGS and TS as paradigms in the secondary autism that makes the question whether the autism is primary and develops to epilepsy or the LGS and TS leads to autism.

P22
FOCAL EPILEPSY IN CHILDHOOD WITHOUT EEG ABNORMALITIES

CANUET L,* RUIZ MIYARES F,** SUAREZ BERGADO R***
** "SATURNINO LORA" PROVINCIAL HOSPITAL,*
SANTIAGO DE CUBA CITY, CUBA.
*** THE SOUTH CHILDREN'S HOSPITAL, SANTIAGO DE CUBA CITY, CUBA.*
**** "JORGE RUIZ RAMIREZ" POLICLINIC,*
HEALTH AREA OF PLAYA, HAVANA CITY, CUBA.

PURPOSE: to determine the factors that provoke normal EEG findings in epileptic children suffering partial seizures

METHODS: We studied 56 children who attended to the consultation of pediatric neurology at a hospital and two health areas from Santiago de Cuba and Havana City during the period of one year, that were suffering recurrent focal involuntary movements, diagnosed as epilepsy; their motor seizures were classified according to the International Classification of Epilepsy into three groups: partial elementary, partial complex and partial with secondary generalization. In all children included were an EEG performed and it was repeated within 3 months if normal findings. A neurologic examination and radiological test were also performed. All the patients received anticonvulsant drugs with a further response evaluation.

RESULTS: One hundred percent of the patients with partial complex seizures had focal spikes on EEG; 93.5 percent of those with secondary generalization seizures had the same EEG findings, but only 41 percent of children with partial elementary seizures had focal epileptic discharge, so remaining patients of this group had two EEG with no abnormalities. Patients with elementary motor partial seizures with EEG normal constituted a homogeneous group characterized by focal clonic contraversive head and eyes turning associated with or without arm posturing, normal neurologic examination, no previous history, normal radiologycal findings, resembling idiopathic partial epilepsy but with a significantly higher rate of recurrence

than the other two groups. Most of the patients with complex and secondary generalization of seizures were seizure free within three months by receiving carbamazepine 20 mg-kg-day or valproic acid, meanwhile those children with normal EEG had a less response, being necessary the use of higher doses of carbamazepine associated or not with clobazam in some cases.

CONCLUSIONS: Epileptic children with motor elementary partial seizures and normal EEG could be more difficult to manage because of more recurrent seizures even with the specific treatment

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P23
EPILEPSY IN OLD MEXICANS IN THE NEW MILLENNIUM: 88 CASES

SUÁSTEGUI RA,[*] GUTIERREZ J,[†] RAMOS R,[‡] BOUCHAN S,[§] NAVARRETE H,[‖] RUIZ JL,[¶] PLASCENCIA N,[†] JAURI S,[**] LEON C,[††] CASTILLO V[†]

[*] HOSPITAL INFANTIL DE MÉXICO "FEDERICO GÓMEZ", MÉXICO.
[†] CENTRO MÉDICO "20 DE NOVIEMBRE", ISSSTE, MÉXICO.
[‡] HOSPITAL GENERAL DE MÉXICO SSA, MÉXICO.
[§] HOSPITAL GENERAL DEL IMSS DE TAMPICO, MÉXICO.
[‖] HOSPITAL EXCEL TIJUANA B.C, MÉXICO.
[¶] HOSPITAL CIVIL DE GUADALAJARA, MÉXICO.
[**] HOSPITAL "RUBÉN DARÍO" ISSSTE, MÉXICO.
[††] HOSPITAL GENERAL DE ZAPOPAN, GUADALAJARA, MÉXICO.

PURPOSE: The causes of epilepsy in people 60 years or older people are different from the other ages. Identifying them allow us to establish preventive measures and orient to an early and reliable diagnose. Studies in old people exclusively with epilepsy do not exist in Mexico.

METHODS: We analyzed 88 patients with epilepsy between 60 and 90 years that initiated their seizures during of 10 neurological centers of the country; all patients were reviewed by a neurologist and performed a brain CT scan and an electroencephalogram.

RESULTS: Forty-six men (52%) and 42 women were studied; age average 70.6 years, SD ± 7.3. The type of seizures found were Generalized Tonic-Clonic (56%), Motor Partial (18%) and Partial Secondarily Generalized (14%); 8% showed 2 types of seizures, the majority was taking monotherapy (83%), the most frequently prescribed drug was phenytoin (47%) followed by carbamazepine (24%). The most frequent cause was ischemic stroke (42%), followed by 26% cryptogenic, cortico-subcortical atrophy (14%), cysticercosis (10%) and brain tumors (5%). The neurological exploration was abnormal in 38%. Electroencephalogram was abnormal in 72% (generalized in 41%).

CONCLUSIONS: Significant differences between this series that involve patient of equal or similar age and other exist. One significant difference is aetiology: in our series neoplasms were observed in less than 5% while others observed it in up to 25%; another important difference is that in ours 10% of the patients had cysticercosis and it was not reported so high in other series.

P24
USE OF FUNCTIONAL MAGNETIC RESONANCE IMAGING (FMRI) TO DETERMINE HEMISPHERIC DOMINANCE FOR LANGUAGE IN REFRACTORY TEMPORAL LOBE EPILEPSY

GAVITO HJ,* ALONSO-VANEGAS MA,* PALACIOS A,* LÓPEZ M,* MARTÍNEZ AR,* MORENO T,* SÁNCHEZ A,* PACHECO M,* FAVILA R*

** NATIONAL INSTITUTE OF NEUROLOGY AND NEUROSURGERY, MEXICO CITY, MEXICO.*

PURPOSE: Determination of cortical distribution for language is of vital importance in surgical planning of procedures for refractory temporal lobe epilepsy. The need for presurgical identification of these eloquent areas to avoid surgical damage is high in view of the increased incidence of infrequent patterns of cortical language localization in these patients. The gold standard to determine language dominance is the Wada test, which has obvious limitations and risks due to its invasive nature. Traditional tests based on hand laterality and dichotic listening are valid alternatives, but offer limited information. This study was aimed at using fMRI to determine hemispheric dominance for language, and comparing results with those obtained by traditional tests (Edinburgh Inventory and Dichotic Listening tests).

METHODS: We studied 20 surgical candidates with refractory temporal lobe epilepsy and 18 control subjects. Hemispheric dominance for language was determined alternatively by means of fMRI studies using a validated paradigm of semantic verbal fluency, and the Edinburgh inventory and dichotic listening tests.

RESULTS: In 19 right handed patients, fMRI showed left hemispheric dominance for language in 14 and bilateral representation in 2. The only left handed patient showed left hemispheric dominance. The control group showed hemispheric dominance for language as determined by fMRI and traditional tests in accordance to data described in literature.

CONCLUSIONS: fMRI proved to be a safe and effective test to determine hemispheric dominance for language with results comparable to those obtained by traditional tests. It offers the added advantage of defining the structural borders of the eloquent areas involved in this cortical function.

P25
AGE OF ONSET, COGNITION AND BRAIN PLASTICITY IN TEMPORAL LOBE EPILEPSY

SITSKOORN M,* EBISCH S,* VAN VEELEN C,* VAN RIJEN P*
** DEPARTMENT OF NEUROSCIENCE,*
UNIVERSITY MEDICAL CENTER UTRECHT, THE NETHERLANDS.

PURPOSE: To investigate the influence of the age of onset of temporal lobe epilepsy on general intellectual functioning and specific hippocampus dependent learning.
METHODS: We investigated intellectual functioning (WAIS IQ) and verbal associative memory (a task for hippocampus dependent learning) in 29 patients with temporal lobe epilepsy and 20 healthy controls. Patients were tested prior to an amygdala-hippocampectomy. The patients were subdivided in a group with an early age of onset (< 5 years, N = 7) and a late onset group (> 5 years, N = 22).
RESULTS: Kruskal Wallis test showed a significant difference between the three groups (chi-square = 8.453, $p < 0.015$) on verbal associative memory. Post-hoc comparisons, Bonferroni corrected, revealed an impaired recall in the late onset group ($Z = -2.43$, $p < 0.015$) relatively to the control group. The early onset group did not differ significantly from the control group. Also no significant difference was found between the early and the late onset group. With respect to general intellectual functioning the early onset group (N = 6) performed significantly worse than the late onset group (N = 21) on both verbal IQ ($Z = -2.191$, $p < 0.05$) and performal IQ ($Z = -2.105$, $p < 0.05$
CONCLUSIONS: Our data suggest that an early age of onset of temporal lobe epilepsy interferes with general intellectual development but not with specific hippocampus dependent learning. The data are discussed in terms of brain plasticity principles.

P26
RELAPSE RATE AND RECURRENCE RISK FACTORS IN PEDIATRIC EPILEPTIC PATIENTS AFTER ANTIEPILEPTIC DRUG WITHDRAWAL

CARRIZOSA J,** VÉLEZ C,*
BLAZICEVICH L,* LONDOÑO L,* CORNEJO W*
** UNIVERSIDAD DE ANTIOQUIA; DEPARTAMENTO DE PEDIATRÍA Y PUERICULTURA; SERVICIO DE NEUROLOGÍA INFANTIL; MEDELLÍN, COLOMBIA.*
*** HOSPITAL UNIVERSITARIO SAN VICENTE DE PAÚL; MEDELLÍN, COLOMBIA.*

PURPOSE: To establish the relapse rate and possible recurrence risk factors in pediatric epileptic patients during antiepileptic drug withdrawal after two or more years of treatment at the Hospital Universitario San Vicente de Paul (HUSVP)- Medellín, between 1997 to 2003.
METHODS: A retrospective cohort study was designed. Seventy-two clinical charts of pediatric epileptic patients, who assisted to the HUSVP with an antiepileptic treatment during a minimum of two years without relapse, and whose treatment was afterwards discontinued were analyzed for seizure recurrence and possible recurrence risk factors. A minimum follow up of six months was considered.
RESULTS: The recurrence rate was 29.1% (21 patients). The main possible relapse risk factors were: 1. Focal seizures (66.6%), 2.Cryptogenic etiology (52.3%), 3. Cognitive impairment (57.1%), 4. History of status epilepticus (80.9%) and 5. Multidrug treatment (80.9%). The majority of patients relapsed during the first six months of drug withdrawal (66.6%). Other possible risk factors like symptomatic etiology, cerebral palsy or abnormal EEG tracings were not relevant in this study.
CONCLUSIONS: The relapse rate is similar as in other studies, as are some risk factors for recurrence. Antiepileptic drug withdrawal should be encouraged in pediatric epileptic patients, but the decision making should be individualized considering the different relapse risk factors.

P27
CLINICAL AND ELECTROENCEPHALOGRAPHIC OUTCOME IN LENNOX-GASTAUT SYNDROME: A FOLLOW-UP STUDY

CARRANZA-DEL RÍO J,*
SOLÓRZANO-GÓMEZ E,* GUTIÉRREZ-MOCTEZUMA J*
** CENTRO MÉDICO NACIONAL "20 DE NOVIEMBRE", ISSSTE. MEXICO CITY. MEXICO.*

PURPOSE: To determine the clinical and electroencephalographical outcome in LGS patients in relation with the cortical maturational process during growth.
METHODS: We investigated a cohort of 7 patients with LGS with at least 5 years of follow-up, reviewing the demographical data, age of onset, history of West syndrome, type and frequency of seizures, electroencephalographic features and neurodevelopmental status during the encephalopathy evolution.
RESULTS: Median age of LGS onset was 96 months. Three patients had a cryptogenic etiology, 3 were symptomatic. Four patients had West syndrome prior to LGS onset. During

follow-up, 3 patients developed a focal EEG, with a clinical correlation in 2 of them. All of our patients demonstrated a significant reduction in seizure frequency at 3 and 5 years of disease onset (p = 0.016). We observed intellectual deterioration in 2 patients. Both patients with focal epilepsy at final evaluation showed mild or no neurological deterioration from baseline.

CONCLUSIONS: The cerebral maturational process related to age may play an important role in clinical and electroencephalographical changes in patients with LGS.

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SYSTEMATIC REVIEW OF INCIDENCE AND RISK FACTORS IN SUDDEN UNEXPECTED DEATH IN EPILEPSY (SUDEP)

HERNANDEZ RONQUILLO L,* TELLEZ-ZENTENO JF,** WIEBE S**
** LONDON HEALTH SCIENCES CENTER, LONDON, ONTARIO, CANADA.*
*** NATIONAL INSTITUTE OF MEDICAL SCIENCES AND NUTRITION SALVADOR ZUBIRÁN, MEXICO CITY.*

PURPOSE: To systematically review the evidence for the incidence and risk factors of SUDEP.

METHODS: Data Sources. An expert in library resources and electronic data bases searched electronic sources such as Medline, Index Medicus, and Cochrane database. We also searched bibliographies or pertinent review and original articles, book chapters and expert consultation. Study selection: Two reviewers independently applied the following inclusion criteria: articles with > 5 patients with SUDEP without age limit, case-controls or cohort and population based studies. We excluded duplicate publications. The methodological quality of individual studies was assessed following established principles for epidemiological research. Data extraction: Two investigators independently extracted data, with disagreements resolved through discussion.

RESULTS: The definition of SUDEP varied among studies. Of 399 initial articles, 120 potentially eligible studies were reviewed in full text, and 41 met the inclusion criteria. Nineteen studies provided data to evaluate incidence of SUDEP, 11 studies assessed risk factors, and 11 studies were case series reports without controls. The controls in many studies were deaths not attributed to SUDEP. There was substantial variability in study populations. The annual incidence of SUDEP ranged from 1:200 to 1:3,000, with a median of 1:500. Incidence was higher in epilepsy population's studies (1:200 to 1:1,000) than in those from the general population (1:30 to 1:3,000). Risk factors associated with SUDEP were male gender, frequent seizures, tonic clonic seizures, idiopathic generalized epilepsy, use of > 3 antiepileptic drugs (AEDs), frequent AED changes, subtherapeutic AED levels, childhood onset epilepsy, concurrent use of neuroleptics or anxiolytics, and low IQ.

CONCLUSIONS: Not all epilepsy patients have the same risk of SUDEP. Although common themes emerge in incidence and risk factors for SUDEP, there is substantial variability. This can be explained by differences in methodology and study populations. For example, SUDEP was more frequent in epilepsy clinics or surgery programs than in coroners' reports, which could be explained because patients with more intractable and more severe epilepsy may have a higher risk of SUDEP. Many studies failed to satisfy minimum methodological criteria. In order to have a better understanding of SUDEP, and to identify patients at risk, it is necessary to create a consensus for case definition, definition of controls, and research methodology.

P29

SYNCOPE IN ADOLESCENTS: REPORT OF 7 CASES AND REVIEW OF LITERATURE

MARTÍNEZ-LLERENA E,* GUTIÉRREZ-MOCTEZUMA J,* VENTA-SOBERO JA,* ARENAS ORNELAS G,* CEREZO-SÁNCHEZ S*
** DEPARTMENT OF PEDIATRIC NEUROLOGY, NMC 20 DE NOVIEMBRE, MEXICO.*

PURPOSE: Syncope is an abrupt and transitory loss of the conscience and of the postural tone, sharp and transitory, with spontaneous recovery, due to the reduction of the cerebral perfusion and the consequent hypoxia. Where the main differential diagnosis is the epilepsy, specially atonic fits, and certain forms of temporal epilepsy with vegetative components. From the neurological point of view, syncope is classified as a non epileptic paroxysm. In many occasions these symptoms end up confusing the clinician and even patients can be managed for years with antiepileptic drugs, being of supreme importance an appropriate diagnosis and the consequent management as well as the prognosis in which these two entities differ. Our objective is to point out how to differentiate it from epilepsy, and how an useless treatment can be avoided.

METHODS: We studied 7 patients, 5 males and 2 females who began their symptoms in the scholar and adolescent age, with abrupt loss of the consciousness related with emotions, postural changes and at the beginning of exercise; four of them had been previously managed with antiepileptic drugs, one of them for 5 years. EEGs, CT scans, echocardiograms, electrocardiogram and Tilt test were done in all patients.

RESULTS: EEGs, CT scans and echocardiograms were normal. In one patient his electrocardiogram showed an

arrythmia and segment QT was prolonged. Tilt test was positive in all of them. Patients treated with antiepileptic drugs did not show any change. When patients were treated with betablockers and advised to avoid precipitant factors, syncope disappeared.

CONCLUSIONS: Syncope is a non epileptic episode which is controlled with beta blockers. Clinicians should consider this possibility in adolescents with loss of consciousness.

P30

FOCAL TRANSMANTLE CORTICAL DYSPLASIA IS A DIFFERENT TYPE OF FOCAL CORTICAL DYSPLASIAS

KAUFFMAN MA,* CONSALVO D,* SILVA W,* GIAGANTE B,* ODDO S,* SALGADO P,* SAIDON P,* CENTURION E,* D'ALESSIO L,* SOLIS P,* KOCHEN S*

** CENTRO DE EPILEPSIA, DIVISIÓN NEUROLOGÍA, HOSPITAL "JM. RAMOS MEJÍA", BUENOS AIRES, ARGENTINA.*

PURPOSE: MRI is the method of choice to detect and characterize developmental malformations of the cerebral cortex. One of these particular entities is focal cortical dysplasia (FCD). Its diagnostic characteristic, based on the MRI findings, is loss of differentiation between gray and white matter, without oedema or mass effect. The aim of this study was to identify particular features in a group of patients with the diagnosis of FCD.

METHODS: We selected those patients with a diagnosis of FCD based on MRI findings from our Epilepsy Centres. They were divided into two groups; A) Focal Transmantle Cortical Dysplasia (FTCD): with focal lesion extending from the superficial cortex to the ventricular wall and; B) non-FTCD (NFTCD): with focal lesion not extending to the ventricular wall. We analyzed average age (AA), sex, age of onset of epilepsy (AOE), developmental delay (DD), history of pregnancy or perilabour trauma (PT), annual seizure frequency (ASF), family history (FH) and epileptogenic zone (EZ).

RESULTS: Group A: (n = 10; 4 men); AA: 38 ± 14 years; AOE: 12.1 ± 8.9 years; DD: 1; PT: 1; ASF: 238.6 ± 279,9; FH: 2; EZ Temporal in 4. Group B: (n = 13; 9 men); AA: 32.3 ± 15.1 years; AOE: 16.6 ± 17.4 years; DD: 0; PT: 7; ASF: 81.7 ± 119.2; FH: 4; EZ Temporal in 6. PT was significantly more frequent in NFTCD group (p = 0.038 Fisher exact test).

CONCLUSIONS: FTCD seems to be a different type of FCD involving less acquired factors in its genesis and affecting less frequently the temporal lobe than NFTCD.

P31

SLEEP DISORDERS IN SURGICALLY TREATED REFRACTORY TEMPORAL LOBE EPILEPSY PATIENTS

BRUST-MASCHER E,* CASTILLO-MONTOYA CR,* RUIZ BM,** ALONSO-VANEGAS MA**

** MÉDICA SUR, MEXICO CITY, MEXICO. ** INSTITUTO NACIONAL DE NEUROLOGÍA Y NEUROCIRUGÍA, MEXICO.*

PURPOSE: Relationships between sleep and epilepsy are complex. Sleep increases epileptiform activity in most focal epilepsies, increases certain seizure types as well as generalization rates of partial seizures. However, sleep deprivation is a well known trigger for seizures and rapid eye movement (REM) sleep seems to suppress seizures. This study was aimed at identifying changes in sleep architecture in refractory temporal lobe epilepsy patients before and after surgical treatment.

METHODS: Forty refractory temporal lobe epilepsy patients were evaluated according to standard presurgical protocol. Patients were subjected to prolonged nocturnal EEG monitoring preoperatively and three months after surgical intervention. The study group was integrated by 20 patients with right temporal lobe epilepsy (TLE) and 20 patients with left TLE. Data obtained was statistically analyzed using the Student t test for correlated groups. Significance was set at $p < 0.05$.

RESULTS: After temporal lobectomy we observed a significant increase in slow wave ($p < 0.05$) and REM sleep ($p < 0.01$) as well as decrease in the number of awakenings, increase in sleep efficiency indexes, decrease in sleep latency, latency to REM sleep and a significant decrease in interictal activity. There were no significant changes in indexes of sleep apnea or periodic movements of the extremities before and after treatment.

CONCLUSIONS: Temporal lobectomy has a beneficial impact on sleep architecture in temporal epileptic patients. Polysomnography is helpful to rule out sleep disorders as a cause of poor control in epileptic patients. Relationships between sleep and epilepsy and epilepsy and sleep disorders must be further investigated.

P32
EPILEPSY IN BAND HETEROTOPIA. ICTAL EEG PATTERNS

SHKUROVICH P,* LACHHWANI D,* DEL BOSQUE C,* WYLLIE E*
** THE CLEVELAND CLINIC FOUNDATION, CLEVELAND, OH, USA.*

PURPOSE: Gray matter heterotopia is a migrational anomaly of variable severity that occurs between 2-5 months of gestation. It is the most common migrational anomaly. Heterotopia may be divided into nodular and band types, the nodular type being much more common than band heterotopia. Patients with band heterotopia present with mental retardation, behavioral problems and epilepsy usually refractory to medical therapy. The associated epileptic syndromes and interictal EEG findings have been described, but ictal EEG patterns are lacking.

METHODS: We describe the MRI (and PET scan in one patient) as well as interictal and ictal electroencephalographic findings in three patients with band heterotopia and intractable seizures that underwent continuous Video-EEG monitoring as part of their clinical evaluation.

RESULTS: Two patients showed multiregional as well as generalized interictal epileptiform discharges, and one showed intermittent slowing with no clear epileptiform discharges. Ictal recording showed a generalized EEG seizure pattern in two of the patients. The third patient showed regional EEG seizure patterns arising from both cerebral hemispheres.

CONCLUSIONS: Our patients highlight the multifocal or diffuse nature of epileptogenesis with underlying band heterotopia which is a likely consequence of the widespread presence of heterotopic neurons. Resective epilepsy surgery is therefore unlikely to yield desired seizure control. Pharmacotherapy, ketogenic diet and VNS may have to be mainstay for epilepsy management in these patients.

P33
IN VITRO ELECTROPHYSIOLOGICAL STUDY OF DUAL PATHOLOGY: PORENCEPHALY ASSOCIATED TO REFRACTORY EPILEPSY AND HIPPOCAMPAL SCLEROSIS

ANTONIO LL,* SILVA AC,* FARIA LC,* SOUSA PS,* YACUBIAN EMT,* CARRETE H,* CENTENO RS,* CAVALHEIRO EA,* PRIEL MR*
** UNIVERSIDADE FEDERAL DE SÃO PAULO - ESCOLA PAULISTA DE MEDICINA - UNIFESP/EPM, BRASIL.*

PURPOSE: This particular form of dual pathology coexists in patients with porencephaly who develop epilepsy with seizures beginning in early life. Dual pathology in temporal lobe epilepsy is an important factor in the clinical prognosis. The presence of a large destructive extra temporal porencephalic lesion suggests that seizures may be associated with hippocampal sclerosis since their association has been sporadically observed. The aim of this work was to verify the neuronal excitability of neocortical and hippocampal slices obtained during corticohippocampectomy surgery for the control of seizures in 2 of these patients.

METHODS: Neuronal excitability was studied using the protocols of extracellular high potassium (K^+) concentration, the GABAa receptor antagonist (Bicuculline) application and the exclusion of Mg^{2+} from the artificial cerebral spinal fluid.

RESULTS: The extracellular high potassium ($K^{+)}$ concentration did not demonstrate significant alterations in neocortex and dentate gyrus amplitude field potentials. However, increased number of population spikes and spontaneous activity was recorded when slices from both structures were perfused with Mg^{2+} free fluid or when the GABAergic antagonist bicuculline was added to the bath liquid. Carbamazepine (CBZ) and topiramate (TPM) had discrete effects on spontaneous and evoked discharges.

CONCLUSIONS: This non-responsiveness to high K^+ protocol may be related to changes in neuronal and astrocytic K^+ channels conductants of the epileptic tissue. Since well known antiepileptic drugs as TPM and CBZ had minimum effects on spontaneous and evoked discharges, our data suggest that other mechanisms, instead Na^+ channels, contribute to maintain the epileptic activity in these cases.

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P34
MALFORMATIONS OF CORTICAL DEVELOPMENT: CLINICAL, RADIOLOGICAL AND ELECTROPHYSIOLOGICAL FEATURES IN PATIENTS WITH PHARMACORESISTANT EPILEPSY

JULIO C,* KUESTER G,** MESA T, GODOY J,** SANTIN J,** CAMPOS M*******
** NEUROLOGY DEPARTMENT, CATHOLIC UNIVERSITY OF CHILE, CHILE. ** NEUROLOGY DEPARTMENT AND EPILEPSY PROGRAM, CATHOLIC UNIVERSITY OF CHILE, CHILE. *** PEDIATRICS DEPARTMENT AND EPILEPSY PROGRAM, CATHOLIC UNIVERSITY OF CHILE, CHILE. **** NEUROSURGERY DEPARTMENT AND EPILEPSY PROGRAM, CATHOLIC UNIVERSITY OF CHILE, CHILE.*

PURPOSE: To characterize the clinical, radiological and electrophysiological features in patients with pharmacoresistant epilepsy secondary to malformations of cortical development (MCD). To evaluate the

applicability of the updated classification system for MCD, proposed by Barkovich et al (2001).

METHODS: All consecutive patients with refractory epilepsy studied with prolonged video-EEG monitoring, performed in our Epilepsy Program between January 1998 and December 2003 were retrospectively reviewed. Patients with probable (abnormal MRI) and definitive (histological confirmation) MCD were selected. Clinical, radiological and EEG data were analyzed.

RESULTS: Thirty-five patients were included in the study (18.1%), 60% male; mean age 15.2 years; mean age of epilepsy onset 7.5 years. The most frequent epilepsy syndrome was neocortical symptomatic focal epilepsy. Associated clinical manifestations included mental retardation, learning difficulties and language problems. Interictal epileptiform activity was pleomorphyc but a bit more frequently bifocal (29.4%). When ictal EEG abnormalities were present, they were more frequently focal (48%). In this series MCD due to abnormal proliferation were predominant (57.1%).

CONCLUSIONS: MCD are a frequent finding in pharmacoresistant epilepsy. They are often associated to other neurological anomalies. In this series, interictal EEG abnormalities were not predominantly confined to a single focus but ictal EEG was more frequently focal. MCD classification proposed by Barkovich et al was easy to use, although in some cases was not possible to obtain histopathological or genetic studies for confirming the diagnosis or defining more specific types of MCD.

P35
PRESURGICAL PSYCHIATRIC ASSESSMENT IN PATIENTS WITH REFRACTORY EPILEPSY

D'ALESSIO L,** ODDO S,* GIAGANTE B,* SOLÍS P,* SILVA W,* CONSALVO D,* SAIDÓN P,* ZIEHER L,** KOCHEN S ***

** RAMOS MEJÍA HOSPITAL, BUENOS AIRES, ARGENTINA.*
*** CÁTEDRA DE FARMACOLOGÍA, UBA, MEDICINA, ARGENTINA.*
**** INSTITUTO DE BIOLOGÍA CELULAR E DE ROBERTIS, ARGENTINA.*

PURPOSE: The aim of this study is to determine the current and past history of psychiatric disorders in 75 patients with refractory epilepsy included in the epilepsy surgical program.

METHODS: The past and current psychiatric disorders were determined using the Structural Interview, SCID I and II of DSM IV. Pharmacological history, suicide attempts, and psychiatric institutionalization were also analyzed.

RESULTS: Three groups of patients were analyzed: 65 patients with temporal epilepsy, 5 with frontal epilepsy, and 5 with other no frontal no temporal epilepsy. In temporal group, 55% had disorders in Axis I, and 29% had criteria for Axis II disorders. In frontal group 100% had Axis I disorders, and 20% Axis II. In the third group, 80% had Axis I disorders and 40% Axis II. The most common Axis I disorders were Affective, Anxiety, Impulsive and Psychotic Disorders. Suicide Attempts and psychiatric institutionalization were frequent in Temporal (18%), and Frontal group (60%). Fourteen patients of this report underwent surgery, and all of them were evaluated after surgery during 1 year. 5 p. (36%) required psychopharmacological therapy because of *de novo* psychiatric disorders but 6 p. (43%) with presurgical psychiatric disorders, were relief of psychiatric symptoms.

CONCLUSIONS: Psychiatric disorders are frequent in patients with refractory epilepsy and severe forms of psychiatric disorders required psychiatric treatment before decided surgery. While some patients may get better of psychiatric symptoms after surgery others required psychiatric therapy.

P36
PHENYTOIN DOES NOT PROTECT RATS WITH HIGH BRAIN PGP-170 EXPRESSION FROM SEIZURES

GIRARDI E,* LAZAROWSKI A**

** INSTITUTO DE BIOLOGÍA CELULAR Y NEUROCIENCIA PROF. DR. E. DE ROBERTIS, FAC. MEDICINA. UBA. PARAGUAY 2155, BUENOS AIRES. ARGENTINA. ** DEPARTAMENTO DE BIOQUÍMICA CLÍNICA. FACULTAD DE FARMACIA Y BIOQUÍMICA. UBA. BUENOS AIRES. ARGENTINA.*

PURPOSE: Previous work in our laboratory have demonstrated a selective increase in Pgp-170 expression in the rat brain capillary endothelial cells, astrocytes and neurons during repetitive 3-mercaptopropionic acid (MP) induced seizures. The purpose of this work was to study the anticonvulsant drug phenytoin effect after repetitive MP induced seizures.

METHODS: Lots of Wistar rats were divided in 4 groups. 1) A single dose of MP (45 mg/kg) was daily injected during 7 days. 2) MP was daily administered during 7 days and the eighth day phenytoin (50 mg/kg) was injected 30 minutes before MP injection. 3) An unique dose of phenytoin and 30 minutes later MP, only once were injected 4) Control with saline solution administration. Pgp-170 immunohistochemistry was analyzed.

RESULTS: Each daily MP doses resulted in the onset of seizure episodes that started 5-8 minutes after MP administration and they were characterized by excitation with sudden running fits and convulsions that lasted 3-5 minutes. Phenytoin injection before a single MP dose protected from seizures, but phenytoin administered after MP injected during 7 days did not avoid the convulsive seizures. The onset of seizure started 18-22 minutes after

MP injection and lasted about 10 minutes. Increased Pgp-170 expression was observed by immunohistochemistry in 1) and 2) groups.

CONCLUSIONS: After 7 days of MP treatment Pgp-170 was expressed in different brain regions. In this experimental epilepsy model of the MP- induced repetitive epileptic crisis, phenytoin does not protect from convulsive crisis, and this model may be considered as a Refractory Epilepsy model.

P37
SURVEY OF EPILEPSY IN MERIDA AND PROGRAMS OF MENTAL HEALTH. MOVABLES CLINICS?

RONDÓN J,* BETANCOURT X, CONTRERAS A,*** PAREDES G*****
** HOSPITAL UNIVERSITARIO DE LOS ANDES, VENEZUELA.*
*** UNIVERSIDAD DE LOS ANDES, VENEZUELA.*
**** CORPORACIÓN DE SALUD ESTADO MÉRIDA, VENEZUELA.*

PURPOSE: Epilepsy in third world countries has a high prevalence (Shorvon SD, Farmer PJ. Epilepsy 1988, 29 (Suppl.1): 36-54). Part of this population is not beneficed by health infrastructure. In our environment, the programs of mental health (PMH) have taken care of it. Design the program of integral attention to the patient with epilepsy, (1999), to give adequate and timely attention to the population (urban and rural) of Merida with epilepsy, (Rondón et al. Act Neurol Colomb 1998; Suppl. 48) does not confine its completed application, due to deficiency of neurological resources for this population.

METHODS: Sieve meted has been applied to the diagnostic population with epilepsy (PSM), between March and December 2003, making expert neurological evaluation by neurologists of epilepsy clinic of the Hospital-HULA, in the rural environment.

RESULTS: Two hundred-forty patients were evaluated (PSM), corroborating the diagnosis of epilepsy in 198, corresponding 82.33% of validity. The highest frequency of epilepsy was between 0-44 years old, with a peak of 15-24 years old; seizures were classified in: epileptic generalized (53.54%), focal with secondary generalization (30.81%).

CONCLUSIONS: An elevated number of epilepsy has been clearly verified (82.33%), as well as a sub registry of the entity, standing out the high proportion of generalized seizures (genetic subtract?). The results were showed to the authorities of health, and led to the assignation of one neurologist to PSM, which resemble us to movables clinics, (Africa) (Watts AE. BMJ 1989; 298: 805-807) and let us give a real integral attention to the patient with epilepsy in Merida state.

P38
ANTIEPILEPTIC DRUGS AND HEMATOLOGIC TOXICITY: A COHORT STUDY

LASSO J,* ARAN M,* BARRIENTOS M,* ASMAD C,* FERNANDEZ V,* GONZALEZ M,* JALDIN V,* PASSIG C,* RIOS L,* DE MARINIS A*
** CHILEAN LEAGUE AGAINST EPILEPSY, CHILE.*

PURPOSE: Virtually all common antiepileptic drugs (AED) are associated with hematologic toxicity (HT). However, data on the frequency of serious HT in Latin American population is lacking. We decided to evaluate the prevalence of serious HT on patients attending the Chilean League Against Epilepsy clinic at Santiago, Chile.

METHODS: We conducted a cohort study to investigate the frequency of serious HT in patients 10-74 years old, being treated with AED between July 1st, 2001, and August 30, 2003. Main outcome measures were validated diagnoses of neutropenia, agranulocytosis, anemia, thrombocytopenia, bicytopenia, or pancytopenia. These criteria were based on results of another cohort study (Pharmacotherapy 1998; 18(6): 1277-1283).

RESULTS: A total of 632 patients were included. Among them there were 4 cases of serious HT (0.6%) related to AED treatment. Neutropenia was present in one patient (0.15%) on valproic acid. Thrombocytopenia was observed in one patient (0.15%) on oxcarbazepine. This patient had also neutropenia. Anemia was present in two patients (0.3%), one on valproic acid and the other on carbamazepine and valproic acid.

CONCLUSIONS: Serious HT is rare in patients under treatment with AED in our population. Our results show a slight increase in HT frequency compared with the literature. This is most probably due to a sampling effect.

P39
PROPHYLAXIS OF CLUSTER SEIZURES WITH MIDAZOLAM (MDZ). DOES IT MODIFY ITS EVOLUTION?

PAREDES GA,* RONDON J**
** INSTITUTO AUTÓNOMO HOSPITAL UNIVERSITARIO DE LOS ANDES, MÉRIDA, VENEZUELA.*
*** INSTITUTO AUTÓNOMO HOSPITAL UNIVERSITARIO DE LOS ANDES, MÉRIDA, VENEZUELA.*

PURPOSE: Cluster seizures correspond to all those patients with epilepsy who present a recurrent seizures pattern higher or equal than a 50% of three or more seizures in 24 h. Its presentation could be irregular or contrary keeps a cyclic pattern (epileptic catamenials seizures, cluster

seizures of cyclic pattern) which can be end up in an epileptic state as a chronic consequence or goes toward the chronic progression and inevitable refract with its marked consequences to the patient and his/her family. In the catamenial epilepsy, the pattern of crisis frequency is predictable and cyclic (75%), probably due to the hormonal changes in female patients during the menstrual cycle, noticing that seizures appears 2 or 3 days before it, and during the first and second day of bleeding.

METHODS: A prospective clinic experimental investigation with a control group was done with 10 female patients who presented cluster epilepsy with a cyclic pattern. Five of them received prophylactic intermittent therapy with midazolam, and five patients were treated with midazolam during 8 months.

RESULTS: There was a decrease of frequency of cluster seizures, higher that 50% of those who received a prophylactic treatment with MDZ, in contrast with the patients of attack, where there was no modification in the frequency of their seizures in cluster.

CONCLUSIONS: The prophylactic intermittent therapy with midazolam modifies the cluster seizures evolution.

P40

CORRELATION BETWEEN HEMIPLEGIC OR HEMIPARETIC CEREBRAL PALSY AND LATER DEVELOPMENT OF PARTIAL EPILEPSY

CARIGNANI MAC,* MATASSA JCM*
** NATIONAL ROSARIO UNIVERSITY, NEUROLOGY DIVISION, ARGENTINA.*

PURPOSE: The PC like an static, residual pathology generally due to hipoxo-ischemics events, more commonly involve the basal branches of the cerebral circulation (anterolateral or fluted branches) or of the terminal veins previous and after the internal cerebral veins and the choroids plexus, with subsequent infarct of the subependimary germinal matrix; is one of the pathologies formerly studied in Pediatrics Neurology and defined according to location, affected vessels, lesional sequence during it development, etiology, and more recently it is linked to dysplasias of the tie cortical mantle due to genic factors and/or upheavals of the neuronal migration. The purpose is to take care of the hemiparetic and hemiplegic form, and its risks of development of partial epilepsy, its evolution and factors that can predict refractoriness and consequent indication of surgery.

METHODS: The study was prospective and included 17 patients between 8 months and 14 years of age with static unilateral neurological deficit, between 1 day and 14 days after his/her first seizure. The group divided randomly; the majority were not dealt with DAE and the subsequent risk about recurrence was greater than in the group treated immediately after first seizure, being the cumulative risk according to the delay in the beginning of the treatment: 60% had recurrence of seizures in 36 months. EEG was performed in all the patients, in order to select only those with interictal spikes, for preventive treatment.

RESULTS: The treated population had statistically significant differences as far as the recurrence risk, settling down like parameters 1 and 2 months free of crisis: 85% of the patients who received immediate treatment were seizure free one year and 67% repeated seizures 2 years later. Of the group with delayed treatment (percentage which seizures were increased based on the long lasting time from first one to the beginning of therapy) 46% were seizure free, 33% the first 2 years. Only 25% percent of the first group of patients had almost complete remission of the attacks, number that climbed to 56% in the patients treated initially. The rest had no good response to drugs instead of increased dosage or change in medication, continuing with partial seizures becoming in candidates for surgery.

CONCLUSIONS: The anticonvulsant therapy in the hemiparetic or hemiplegic PC patients is postulated when interictal spikes were present, before the seizure appearance. Lamotrigine seems to be the best suited drug for the purpose, due to a possible neuroprotective effect.

P41

DROGAS ANTIEPILÉPTICAS Y MALFORMACIONES CONGÉNITAS, PINAR DEL RÍO, CUBA, 2002-2003

JUAN ALVARO GF*
** INSTITUTO DE NEUROLOGÍA Y NEUROCIRUGÍA, LA HABANA, CUBA.*

OBJETIVO: Conocer la magnitud y frecuencia de malformaciones congénitas entre una muestra de mujeres epilépticas embarazadas.

MÉTODOS: Se realizó un estudio observacional prospectivo de 74 mujeres con diagnóstico de epilepsia y embarazo atendidas en la Consulta Externa de Epilepsia del Hospital Universitario Abel Santamaría y el Servicio de Diagnóstico Prenatal del Departamento Provincial de Pinar del Río durante los años 2002 y 2003.

RESULTADOS: Durante los dos años estudiados, el 0.34% de las gestantes atendidas padecían de epilepsia (74/21,735); de las 235 interrupciones de embarazo por malformaciones congénitas solamente 2.12% correspondieron a embarazadas tratadas con drogas antiepilépticas siendo la carbamazepina la más utilizada, con 13.33% de

los casos. El 37.5% de las malformaciones congénitas en hijos de epilépticas se diagnosticaron en mujeres que habían abandonado el tratamiento por decisión propia. Las malformaciones más frecuentes fueron las digestivas seguidas de los defectos de la pared anterior abdominal. Los niveles de alfafetoproteína sérica fueron elevados en el 6.75% de las epilépticas, resultado superior al hallado en la población normal. El polihidramnios fue el hallazgo más frecuente en el ultrasonido diagnóstico prenatal.

CONCLUSIONES: Durante los dos años estudiados, el 0.34% de las gestantes atendidas padecían de epilepsia (74/21,735), de las 235 interrupciones de embarazo por malformaciones congénitas solamente 2.12% correspondieron a embarazadas tratadas con drogas antiepilépticas siendo la carbamazepina la más utilizada, con 13.33% de los casos. El 37.5% de las malformaciones congénitas en niños de mujeres epilépticas se diagnosticaron en quienes habían abandonado el tratamiento por decisión propia. Las malformaciones más frecuentes fueron las digestivas seguidas de los defectos de la pared anterior abdominal. Los niveles de alfafetoproteína sérica estuvieron elevados en 6.75% de las epilépticas, resultado superior al hallado en la población normal. El polihidramnios fue el hallazgo más frecuente en el ultrasonido diagnóstico prenatal.

P42
EFFECT ON VERBAL MEMORY DUE TO DEFICIENCY OF FOLIC ACID IN PLASMA BY CARBAMAZEPINE AND PHENYTOIN USE

HERNANDEZ R,* FERNANDEZ MA,* MIRANDA G,* SUASTEGUI RA**
** INSTITUTO NACIONAL DE NEUROLOGÍA Y NEUROCIRUGÍA "MANUEL VELASCO SUÁREZ", MÉXICO.*
*** HOSPITAL INFANTIL DE MÉXICO "FEDERICO GÓMEZ", MÉXICO.*

PURPOSE: Epileptic patients who take phenytoin and carbamazepine have a variety of collateral effect including the fall of the folate plasmatic level. The lack of folic acid plasma concentration has been associated with damage on cognitive function.

METHODS: We chose 18 patients with epilepsy treated with phenytoin, carbamazepine or both drugs and formed two groups. The group A was treated with folic acid up to 5 mg/day and the group B received placebo during six months, obtaining nine patients in each group and matching in age, sex, schooling, evolution time of epilepsy, frequency of the seizures and antiepileptic drugs plasma levels. We made registries at the beginning (basal) and the end of the study.

RESULTS: The basal folic acid plasma levels in both groups were under normal. The neuropsychological assessment at the beginning (Mini-Barcelona test) showed deficit in the verbal memory skills in both groups (< 50 percentile). After 6 months of therapy with folic acid (group A), the level of plasma folic acid was higher of the basal value. The verbal memory test improved above the percentile 50 ($p < 0.05$) with respect to the basal value. The number of seizures and plasma levels of antiepileptic drugs had not modifications. The group treated with placebo did not improve.

CONCLUSIONS: Therapy with folic acid is safe, with no side effects and improvement in cognitive function, specifically in verbal memory, the patients with epilepsy treated with phenytoin and carbamazepine.

P43
PAROXYSTIC ACTIVITY AND BEHAVIOR FEATURES IN CHILDREN WITH LEARNING DISORDERS WITHOUT SEIZURES

PORRAS-KATTZ E,* HARMONY-BAILLET T,* SANTIAGO-RODRÍGUEZ E,* RICARDO-GARCELL J,* AVECILLA-RAMÍREZ GN,* SÁNCHEZ-MORENO L*
** INSTITUTO DE NEUROBIOLOGÍA, UNAM, QUERÉTARO, MÉXICO.*

PURPOSE: To describe the paroxystic and behavioral features in children with learning disorders (LD) without seizures, and to evaluate the AED therapy and evaluation of the treatment.

METHODS: This is a prospective, experimental, controlled open trial. Clinical, behavioral and electroencephalographic features were evaluated in 17 children with LD. A group of them, with paroxystic discharges in the EEG and without seizures were treated with CBZ of VPA during 6 months, depending on the type of paroxysm and previous parent's agreement. They had clinical and blood samples during the follow up to keep the liver function and the serum levels in optimal conditions (at the beginning, the 3rd and the 6th month). They were reevaluated.

RESULTS: Sixty-seven children with LD were evaluated and 17 (25%) exhibited paroxysms in the EEG without seizures. The mean age was 8 years and 11 months and IQ was 89. Male sex predominated (1.4:1). School grade ranged between kindergarten and high school, 53% retained a grade. The EEG had focal paroxysms in 41% and generalized paroxysm in 59%. The combinated LD (reading, written expression and mathematics troubles) predominated. Six children received CBZ or VAP (20 mg/kg/day) during 6 months. Then they were reevaluated and all of them showed clinical, behavioral and electroencephalographic tendency to improve, but only one of them had normal EEG.

CONCLUSIONS: The results support the idea that electroencephalographic and behavior positive changes are

observed in children with LD without seizures when they receive AED, but best supported conclusions must be obtained with a wider sample and longer exposition to AED.

P44
CLINICAL APPLICATIONS OF POLYSOMNOGRAPHY (PSG) IN EPILEPSY

STOKES H,* STOKES A*
** SAN CARLOS UNIVERSITY, SCHOOL OF MEDICINE, GUATEMALA*

PURPOSE: To show the clinical applications and benefits that polysomnography can provide to the diagnoses and management of patients with epilepsy in which nocturnal seizures could be undetected, and helps to differentiate parasomnias and sleep related paroxysmal events that are not epilepsy.

METHODS: Thirty-five consecutive patients with epilepsy suspected of having nocturnal seizures were evaluated with polysomnography.

The parameters analyzed were: Electrical cerebral activity EEG, Electrooculogram, Oximetry, Air Flow, Chest Movements, Abdominal movements, Chin EMG, EKG, Limb movements and Snoring, The records lasted an average of 8 hours during the night sleep study. Sleep stages were scored from I to V, and seizure discharges scored manually and automated.

The types of seizure discharges were scored according to the sleep stages and the location as well as the background activity and normal awake and sleeping. In patients with simple partial and generalized seizures most of the discharges were found in phase II and phase I of sleep.

RESULTS: Comorbidity between sleep obstructive apnea and epilepsy was not noticed in the studied patients. During the tests we disclosed cases of central sleep apnea presented in children with syncopal spells. Common clinical findings were bitten tongues in the morning as a sole clinical finding with nocturnal epileptic discharges; patients with confusional states on awakening and parasomnias and confusion states related to narcolepsy that could be confused with epilepsy once analyzing the polysomnography were found to be intrinsic sleep disorders.

CONCLUSIONS: PSG is an all night study that is very useful for studying epileptic phenomena that occurs mainly during sleep. People spends one third of his/her life sleeping. According to this, one third of seizures could occur during the sleeping period, without considering how epileptogenetic is sleep itself.

In addition, during sleep there are some normal paroxysmal phenomena such as sleep spindles, vertex waves and K complexes; in susceptible patients with either thallamic or cortical dysfunctions these normal phenomena could spark a paroxysmal discharge and explain why many seizures occur predominantly during sleep. There are also some epileptic syndromes that occur mainly during sleep that could also be detected with PSG. Correcting a sleep disorder associated with epilepsy could improve epilepsy management.

Since we combine PSG with videomonitoring this is also an additional advantage of this method for studying patients with epilepsy and other episodic diseases that could resemble epilepsy.

P45
USE OF SALIVA ANTIEPILEPTIC DRUGS TIME-CURVES LEVELS IN THE TREATMENT OF SEVERE EPILEPTIC CHILDREN

RUGGIA R,* FAGIOLINO P,* OLANO I,* VAZQUEZ M,* REY A,* DIAZ R,* CASTRO M*
** NEUROPAEDIATRICS DEPARTMENT AND PHARMACOLOGY AND BIOPHARMACY SERVICE (CLINICAL HOSPITAL), UNIVERSITY PROJECT (CSIC), URUGUAY.*

PURPOSE: The aim of our study is to correlate saliva levels of antiepileptic drugs with therapeutic or toxic effects in epileptic patients. Although saliva levels seem more meaningful than plasma levels of total drug (free plus protein bound fraction) as it represents mainly the free fraction, there has been controversy in the use of this fluid in the therapeutic drug monitoring (TDM). As it is not an invasive technique, many samples may be taken throughout the day, improving the possibilities of correlation with the clinical events (therapeutic or adverse effects).

METHODS: Mixed saliva samples were taken throughout the day using citric acid to stimulate salivation. The drugs tested were Phenytoin, Valproic acid, Carbamazepine and Phenobarbital. Saliva samples were determined by fluorescence polarization immunoassay (FPIA, TDx Abbott Laboratories). The different saliva levels versus time curves were analyzed and we were able to study the kinetics of these drugs: storable kinetics, circadian variations, increased drug elimination or limited absorption and drug interactions. The concentration of the drug in saliva may reflect its free concentration in plasma that reaches the action site and for this reason it may correlate better than the plasma total drug concentration.

RESULTS: Twenty-eight severe epileptic children were studied with this methodology. Common decision making in therapeutics are exposed. Record of each patient in reference to these problems is analyzed, and the contribution of the saliva levels determination is discussed.

Conclusions are highly positive. Analyzing the concentration and times curves, saliva was more useful than plasma when the binding of the drugs with plasmatic proteins were in discussion, mainly in treatments with two or more drugs, being the saliva profile of the curve modified, but not the steady state value, as can it happen with plasma levels (important in therapy decisions). Simultaneous record of clinical events and drug concentrations along the day allow better drug adjustments, in order to avoid seizures and untoward effects.

CONCLUSIONS: Saliva time curves provide a cheap, simple and useful tool in the treatment of epileptic patients considered of difficult control. Besides it opens an interesting line in pharmacokinetic research.

P46
CLINICAL, ETIOLOGICAL AND OUTCOME FEATURES IN PATIENTS WITH BRAIN CALCIFICATIONS WITH PERILESIONAL EDEMA

BU J*,** DURÓN RM*,** MEDINA MT*,** AGUILAR R,* GIRÓN E,* DELGADO-ESCUETA A**

** NATIONAL AUTONOMOUS UNIVERSITY OF HONDURAS, HONDURAS. ** COMPREHENSIVE EPILEPSY PROGRAM, DAVID GEFFEN SCHOOL OF MEDICINE AT UNIVERSITY OF CALIFORNIA IN LOS ANGELES AND GLAVA EPILEPSY CENTER OF EXCELLENCE, LOS ANGELES, CA, USA.*

PURPOSE: To determine the clinical, electroencephalographic, neuroimaging and outcome features of BC with perilesional edema in 23 patients from Honduras.

METHODS: Patients were identified in three neuroimaging departments from 1999 to 2003. Clinical data was obtained from the referring physicians or by personal evaluation by authors. All patients had brain CT scan, 4 also had MRI and 4 had electroencephalograms (EEGs). Clinical follow-up with either CT scan or MRI was available in 8 cases (34%).

RESULTS: Most patients were female (68.2%), average age was 28.8 years, range 7-68 years. Nineteen patients (72%) had calcifications only, but lesions compatible with several stages of neurocysticercosis were found in 4 cases (28%). Main reasons prompting referral were seizures (64%), a previous diagnosis of NCC that required imaging follow-up (50%), other neurological complications 50% (n = 11), and headaches 18% (n = 2). The four EEGs available were abnormal correlating with the localization of lesions, showing focal slow waves in 4, and focal spikes or sharp waves in 2. The 8 patients who had follow-up showed resolution of edema after one moth of steroid treatment. Recurrences of edema were documented in 4/23 patients (17.4%), the main manifestations being seizures and headache that occurred 8 months to one year after the first episode. One patient had a brain biopsy showing astrocytic gliosis.

CONCLUSIONS: This data show that BC with perilesional edema can present clinically by epileptic seizures and headaches that resolve with steroids but recur months or years later. Both seizures and EEG abnormalities correlate with the localization of lesions. Mechanisms for this phenomenon are unknown, but immunological reactions to neurocysticercosis can be suspected in on third of cases.

FUNDING: Instituto de Neurociencias, Tegucigalpa, Honduras.

P47
NATIONAL EPILEPSY STUDY IN HONDURAS: A DOOR-TO-DOOR SURVEY

MOLINA L,* MEDINA MT,* DURÓN RM,
**** HESSE H,* SU H,* ZELAYA A,* RAMIREZ F,***
***** MEDICAL DOCTORS IN SOCIAL-SERVICE 1999-2002******

** NATIONAL AUTONOMOUS UNIVERSITY OF HONDURAS, TEGUCIGALPA, HONDURAS.*
*** SECRETARY OF HEALTH, HONDURAS.*
**** SCHOOL OF MEDICAL SCIENCES, UNAH, TEGUCIGALPA, HONDURAS.*

PURPOSE: To determine the prevalence and incidence of epileptic seizures in Honduras through a national door-to-door survey.

METHODS: Seventy medical doctors in social service were trained to perform the survey in 50 communities from the 18 counties of Honduras. Final diagnoses were based on the criteria of the International League Against Epilepsy and were validated by one epileptologist and five neurologists. All patients gave written consent for the study.

RESULTS: A total of 135,126 individuals were ascertained (52% female and 48% male); 4/1,000 inhabitants (n = 1,411) had history of epileptic seizures and 617 individuals had active epilepsy. Prevalences were: all epilepsies 5.4/1,000, active epilepsy 4.6/1,000, inactive epilepsy 0.9/1,000, febrile seizures 3.6/1,000 and single seizures 1.44/1,000. Prevalence rate was 2.8 for women and 2.6/1,000 for men, higher between 20-39 years and lower in the coasts. There were variable prevalences thru communities (up to 27/1,000). Incidence rates ranged from 46 to 255 cases per 100,000 residents. Clinically, 56% of seizures were partial with or without secondary generalization, 39% were generalized and 5% were non-classifiable. There was history of midwife-attended labor (32%), seizures in relatives (28.6%), febrile seizures (12.5%), perinatal brain trauma (12.2%), and head trauma (10.2%). Most patients reported problems accessing diagnostic tests and treatments.

CONCLUSIONS: This is the first national population-based study reported in Central America. Prevalence of epilepsy

in Honduras showed both foci of high and low prevalences, even though the mean prevalence was not high compared to that reported in industrialized countries.
Funding: Secretary of Health, Neurology Training Program-National Autonomous University of Honduras.

P48
PREGNANCY AND EPILEPSY IN LATIN AMERICA: THE EXPERIENCE OF THE CHILEAN LEAGUE AGAINST EPILEPSY (LICHE)

DE MARINIS A,* FERNÁNDEZ V,* CHICHARRO A,* GONZÁLEZ M,* LASSO J,* PASSIG C,* RÍOS L,* JALDÍN V,* ASMAD C*
** LIGA CHILENA CONTRA LA EPILEPSIA, SANTIAGO, CHILE.*

PURPOSE: To prospectively evaluate pregnancy planning, clinical profile and pregnancy outcome in consecutive cases of pregnant women with epilepsy attending LICHE´s epilepsy clinic.
METHODS: In consecutive pregnant epilepsy patients from years 2001 to 2003 the following variables were evaluated: age, gestation, AED treatment, pregnancy planning, folic acid prophylaxis, seizure control during pregnancy, newborn outcome and stillbirths.
RESULTS: Sixty-three consecutive patients were evaluated. a) 6.5% (23/63) of pregnant women were 15 to 20 years old. b) 61.9% (39/63) were primiparous. c) Epileptic syndrome: 61.9% (39/63) = generalized, 36.5% (23/63) = focal, 1.6% (1/63) = undetermined., d) AED treatment: monotherapy = 63.5% (40/63), politherapy = 36.5% (23/63). e) AED distribution: Carbamazepine = 030% (12/63), Phenobarbital = 27.5% (11/63), Valproic acid = 25% (10/63), Phenytoin =7,5% (3/63). f) Folic acid prophylaxis = 57.1%. g) 41.3% (26 /63) presented seizures during pregnancy, most of them tonic clonic generalized (TCG). Delivery took place in 84.1% (53/63) of the patients during the observation period. 96.2% (51/53) were newborns and 3.8% (2/53) were stillbirths. 19.6% (10/51) of newborns presented malformations.
CONCLUSIONS: Our patients showed significant risk factors for newborn malformations and stillbirths such as polytherapy, treatment with valproic acid or carbamazepine and TCG seizures during pregnancy. Other risk factors were a high rate of unplanned pregnancies, insufficient folic acid prophylaxis and auto suspension of AED treatment when pregnancy is diagnosed.

P49
PERINATAL ASPECTS IN OFFSPRING OF WOMEN WITH EPILEPSY

PRETO PM,* COSTA ALC,* LOPES-CENDES I,* GUERREIRO CAM*
** STATE UNIVERSITY OF CAMPINAS - UNICAMP. BRAZIL.*

PURPOSE: To evaluate perinatal aspects (head circumference, weight, height and Apgar scores) in offspring of women with epilepsy (WWE).
METHODS: We followed prospectively 50 pregnant women with epilepsy. Mean age was 25 years (range 16-45). A total of 48 livebirth of 50 WWE were compared with 100 livebirth of non epileptic women (control group), born at the same period in CAISM-UNICAMP.
RESULTS: Among control group we observed 57 male and 43 female live-born children, with weight values (3,101.79 ± 445.76 g), height (49.30 ± 2.36 cm), head circumference (33.84 ± 1.61 cm) and Apgar scores at 1 min. (1-9, median 8) and 5 min. (8-10, median 9). Among 48 live-born of WWE, we observed 22 male and 26 female, with weight (3,173.57 ± 398.12 g), height (50.22 ± 2.39 cm), head circumference (33.66 ± 2.16 cm) and Apgar scores at 1 min. (2-10, median 8) and 5 min. (8-10, median 9). No statistical difference was found at t test ($p > 0.005$).
CONCLUSIONS: No difference was observed into livebirth of women with epilepsy and non epileptic control group.

Sunday 4th July 2004
15:00 – 16:00

P50
SEIZURE FREQUENCY DURING PREGNANCY AND PUERPERIUM

COSTA ALC,* LI ML,* LOPES-CENDES I,* GUERREIRO CAM*
** STATE UNIVERSITY OF CAMPINAS - UNICAMP, BRAZIL.*

PURPOSE: i) T o evaluate the changes in seizure frequency during pre-gestational, pregnancy and puerperium periods, and ii) To identify factors related to increase in seizure frequency.
METHODS: We followed 50 pregnant women with epilepsy prospectively. Mean age was 25 years (range 16-45), and mean duration of epilepsy was 11 years (range from 7 months to 37 years). Nine had symptomatic, 35 had probably symptomatic, and six had idiopathic epilepsies. All patients were evaluated every 60 days. Forty-seven maintained the same pre-gestational anti-epileptic drug (AED). Three had no AED therapy. Drug dosages were

increased to control tonic-clonic seizures in seven patients. Forty-one patients were on monotherapy and six on two AEDs. The subjects were classified according to seizure frequency into six groups based on modified report of Milan study (Canger et al., 1982).

RESULTS: Seizure frequency in 23 patients (46%) remained unchanged, in 14 (28%) worsened and in 13 (26%) improved. Comparison of seizure frequency among prepregnancy, gestational and puerperium periods showed no difference (Friedman, p = 0.073). We found no significant correlation in seizure frequency during pregnancy and risk factors such as type of seizure and epilepsy, aetiology, age, duration of epilepsy, prepregnancy seizure frequency, maternal weight gain, type of AED and its serum levels and electroencephalogram abnormalities. None of patients had status epilepticus.

CONCLUSIONS: Gestational and puerperium periods did not influence seizure control.

P51

EMX2 AND SCHIZENCEPHALY: MUTATION SCREENING IN A GROUP OF 33 PATIENTS

MONTENEGRO MA,* RODRIGUES MCS,** TORRES FR,* PIOVESANA ASG,* GUERREIRO MM,* CENDES F,* LLERENA JC,** LOPES-CENDES I*
** UNIVERSIDADE ESTADUAL DE CAMPINAS, CAMPINAS, BRASIL. ** INSTITUTO OSWALDO CRUZ, BRASIL, RIO DE JANEIRO, BRASIL.*

PURPOSE: Schizencephaly is a congenital defect characterized by clefts of the cerebral mantle. The description of germline mutations in the homeobox gene EMX2 raised the hypothesis that genetic factors could play a relevant role in the pathogenesis of this brain malformation. The objective of this study is to search for mutations in the EMX2 gene in patients with schizencephaly.

METHODS: We searched for mutations in the three coding exons of the EMX2 gene in all patients and 50 unrelated normal subjects. PCR samples were analyzed by the single-strand conformation polymorphism (SSCP) method. The nucleotide sequence of fragments showing an altered mobility in the SSCP was determined using the Big Dye Terminator Sequencing kit for megaBACE1000.

RESULTS: A total of 33 patients were analyzed. SSCP analysis identified band shifts in exon-2 in four patients. Automatic sequencing has identified a C -> A substitution that does not change the wild type amino acid arginine in position 156 of the protein. In addition, the same sequencing change was found in 4 individuals of the control group.

CONCLUSIONS: Although the C -> A substitution has been previously reported as disease related in schizencephaly patients, our results clearly show that this mutation is not involved in the etiology of this disorder in our group of patients, since it was present in 8% of our control group.

P52

A NEW LIS1 MISSENSE MUTATION IN A PATIENT WITH THE LISSENCEPHALY/SUBCORTICAL BAND HETEROTOPIA SPECTRUM

MARQUES DE FARIA AP,* TORRES FR,* MONTENEGRO MA,* GUERREIRO MM,* CENDES F,* LOPES-CENDES I*
** UNIVERSIDADE ESTADUAL DE CAMPINAS, CAMPINAS, BRASIL.*

PURPOSE: Mutations in LIS1 and DCX genes are responsible for the neuronal migration disorder known as lissencephaly/subcortical band heterotopia spectrum (LIS/SBH). To date, only five missense mutations were reported in LIS1. The objective of this study is to report a new missense mutation in LIS1.

METHODS: All patients and 50 control subjects were genotyped by PCR for LIS1 and DCX genes and analyzed by the single-strand conformation polymorphism (SSCP) method. The nucleotide sequence of all fragments showing an altered mobility in the SSCP experiment was determined using the Big Dye Terminator Sequencing kit for megaBACE1000.

RESULTS: A total of 15 patients were analyzed, 5 of them have SBH and 10 have LIS. SSCP analysis revealed one patient with altered band shift in exon 8 of the LIS1 gene. Sequencing showed an A -> C transversion which predicts a changes of a histidine for a proline in position 277 of the protein. MRI of this patient showed agyria in the parietal and occipital lobes and pachygyria in temporal and frontal lobes.

CONCLUSIONS: The malformation pattern of this patient is more severe in the posterior regions, a typical characteristic of individuals with LIS1 mutations. Otherwise this patient seems to have a LIS grade more severe than expected for individuals with missense mutations in LIS1. The new missense mutation we describe is localized in the 5th WD domain of the lis1 protein, which is conserved in different species, and is probably involved in interactions with cytoskeletal proteins.

P53
GENOME-WIDE SEARCH IN FAMILIAL MESIAL TEMPORAL LOBE EPILEPSY

MAURER-MORELLI CV,* SANTOS NF,* SECOLIN R,* MARCHESINI RB,* KOBAYASHI E,** CENDES F,** LOPES-CENDES I*
** DEPARTAMENTO DE GENÉTICA MÉDICA, FCM-UNICAMP, CAMPINAS-SP, BRASIL.*
*** DEPARTAMENTO DE NEUROLOGÍA, FCM-UNICAMP, CAMPINAS-SP, BRASIL.*

PURPOSE: Recently, we described a large group of families segregating familial mesial temporal lobe epilepsy (FMTLE) with evidence of a strong genetic predisposition for the development of hippocampal atrophy.

METHODS: Initially we chose to study two large kindreds with FMTLE, which was informative for linkage analysis (F-10 and F-26). We genotyped 57 individuals, including 32 patients. A total of 297 polymorphic dinucleotide repeat markers were selected for the genome search. Two-point lod scores (Z) were calculated for each family separately using the LINKAGE package.

RESULTS: Simulation analysis for the two kindreds (F-10 and F-26) indicates a Zmax of 8.9, (4.5 and 4.4 for each family separately). To date, we have genotyped 189 markers. The two Brazilian families segregating FMTLE had significant negative lod score for 130 markers, ranging from -2.00 to -10.87 at different recombination fractions. However, 59 markers were non-informative with lod scores ranging from –1.98 to 1.91 at different recombination fractions.

CONCLUSIONS: By linkage studies we can confirm or exclude genetic linkage between selected markers and disease loci. The markers genotyped in the present study covered about 63% of the genome, and no evidence of positive linkage was found. Although the two families selected are very informative for linkage, we had 31% of non-informative results with the highly polymorphic markers tested. This result emphasizes the high risk of a genome-wide search even in the presence of a good family material.

Supported by FAPESP.

P54
GENETIC STUDIES IN AUTOSOMAL DOMINANT LATERAL TEMPORAL LOBE EPILEPSY

SECOLIN R,* SANTOS NF,* KOBAYASHI E,** TORRES FR,* SARDINHA LAC,** CENDES F,** LOPES-CENDES I**
** DEPARTMENT OF MEDICAL GENETICS, FCM, UNICAMP, CAMPINAS, BRAZIL.*
*** DEPARTMENT OF NEUROLOGY, FCM, UNICAMP, CAMPINAS, BRAZIL.*

PURPOSE: Mutations in the leucine-rich glioma-inactivated 1 gene (LGI 1) on chromosome 10q have been identified in autosomal dominant lateral temporal lobe epilepsy (ADLTLE).

METHODS: We studied 79 individuals in 2 unrelated families segregating ADLTLE (S and MG kindreds). All individuals recruited for the study were interviewed and examined by a neurologist. In addition, 45 family members had high resolution MRI scans. Family members were genotyped for 12 polymorphic dinucleotide repeat markers: D10S1644, D10S1687, D10S1765, D10S1753, D10S583, D10S185, D10S574, D10S1680, D10S577, D10S192, D10S566 and D10S187, flanking the LGI1 gene. Two-point and multipoint lod scores (Z) were calculated for each family separately, using the LINKAGE© package. In addition, we screened for mutations in the entire coding region of the LGI1 gene as well as its exon-intron junctions.

RESULTS: Two-point and multipoint lod scores for the S kindred were above 3.00 for seven markers (Zmax = 6.35 at q = 0.00 for D10S185). By contrast, lod scores in the MG kindred were significantly negative (Z < -2.00) for all markers. Mutation analysis of the LGI1 gene showed a IVS7-2A > G splicing site mutation in all affected individuals of the S kindred, as well as in 5 asymptomatic family members, all carriers of the affected haplotype on ch10q. By contrast, no mutations were found in the MG kindred. Lateral temporal lobe malformation was identified in 10 individuals of the S kindred; whereas, MRI scans of patients in the MG kindred were normal.

CONCLUSIONS: Our results clearly demonstrate the presence of genetic heterogeneity in ADLTLE, which may correlate with imaging findings.

P55
THE ROLE OF CHROMOSOME 6P IN JUVENILE MYOCLONIC EPILEPSY

PASCOAL VDB,* RIBEIRO POA,* BETTING LE,** SANTOS NF,** SECOLIN R,* MORY SB,** GUERREIRO C,** GUERREIRO M,** CENDES F,** LOPES-CENDES I*
** DEPARTMENTS OF MEDICAL GENETICS, CAMPINAS, BRAZIL. ** DEPARTMENTS OF NEUROLOGY, CAMPINAS, BRAZIL.*

PURPOSE: Over the years, linkage and association studies were performed in many juvenile myoclonic epilepsy (JME) families leading to conflicting results. One hypothesis to explain these results is the presence of genetic heterogeneity, which may be related to differences in ethnic origin of the families studied. We investigate linkage and/or association between the gene(s) predisposing to JME and the candidate loci on chromosome (ch) 6p21 and 6p12 in Brazilian patients.

METHODS: We performed linkage analysis in 6 unrelated families, ascertained thought probands with JME. For the association studies we analyzed 44 unrelated patients with JME and 54 normal controls. We genotyped eight microsatellite markers flanking both candidate regions. Two-point and multipoint lod-scores were calculated using the software LINKAGE. Significance of association was ascertained by chi-square or Fisher exact test, when appropriated. In addition, we calculated odds ratio with 95% confidence interval.

RESULTS: Lod-scores were negative for all markers genotyped and multipoint lod- scores significantly excluded linkage in both candidate regions. However, there was a significant association between the disease locus and 2 microsatellite markers, D6S1610 and D6S426, mapped in a contiguous region between ch 6p21 and 6p12.

CONCLUSIONS: Linkage results excluded the presence of a major locus predisposing to JME on ch 6p21 and ch 6p12. However, association studies indicate the presence of locus involved in JME on ch 6p. These results confirm the hypothesis of genetic heterogeneity in JME and point to the presence of a complex mode of inheritance in this epilepsy syndrome.

P56
A NEW FLN1 MUTATION IN A FAMILY SEGREGATING BILATERAL PERIVENTRICULAR NODULAR HETEROTOPIA (BPNH)

TORRES FR,* MONTENEGRO MA,* GUERREIRO MM,* CENDES F,* LOPES-CENDES I*
** UNIVERSIDADE ESTADUAL DE CAMPINAS, CAMPINAS, BRASIL.*

PURPOSE: BPNH is an X-linked dominant malformation in which nodules of gray matter located along the lateral ventricles fail to migrate to the cortex. Recently, a gene for BPNH has been identified as filamin 1 (FLN1). The objective of this work is to describe a new mutation in the FLN1 gene in a family segregating BPNH.

METHODS: FLN1 gene was analyzed by the single-strand conformation polymorphism (SSCP) method. PCR fragments that showed an altered mobility shift were cloned using the TOPO TA Cloning Kit (Invitrogen). Sequencing of the cloned fragments was performed by standard manual techniques.

RESULTS: We identified two patients with typical BPNH, mother and her daughter, born of non-consanguineous parents with an antecedent of five spontaneous abortions. The SSCP analysis identified a band shift in exon 6 of the FLN1 gene in the two female patients. Sequencing revealed a 1159G -> C mutation in position 329 of the protein.

CONCLUSIONS: We have identified a new point mutation in the FLN1 in a family segregating BPNH. Missense mutations in the FLN1 are a rare event, usually associated with severe phenotypes, including multiple malformations and severe mental retardation. By contrast, splicing site and non-sense mutations are more frequent and associated with BPNH. The nucleotide substitution found in our patients is predicted to change a glutamate to an aspartate in position 329 of the protein or alternatively, it could destroy an intron 6 donor-splicing site. Additional functional studies will be required to determine the exact pathogenic effect of this mutation.

P57
EFFECT OF THE MAGNETIC STIMULATION TRANSCRANEAL IN REFRACTORY EPILEPSY

FERNANDEZ MC,* RAMOS-PEEK J,** SUASTEGUI RA***
** HOSPITAL MÉDICA SUR, MÉXICO.*
*** INSTITUTO NACIONAL DE NEUROLOGÍA Y NEUROCIRUGÍA "MANUEL VELASCO SUÁREZ", MÉXICO.*
**** HOSPITAL INFANTIL DE MÉXICO "FEDERICO GÓMEZ", MÉXICO.*

PURPOSE: To evaluate the effect of slow-frequency repetitive transcranial magnetic stimulation (SF-rTMS) in patients with epilepsy refractory to medical treatment as an alternative therapy.

METHODS: A 9-cm circular coil was positioned over the focal discharge area as categorized on the EEG. One hundred stimuli delivered at 0.5 Hz at 15% below motor threshold were given biweekly during four consecutive weeks. The EEG on the initial SF-rTMS session was recorded for 30 min before and after the first 100 stimuli. The number of seizures occurring in the first month after the stimulation was recorded and was compared with the seizure number in the month before stimulation using a seizure diary.

RESULTS: Stimulation was associated with > 50% reduction in frequency of seizures in 6 of 9 patients. There were no significant changes in the EEG. No seizures occurred during stimulation and two patients had transient headache post stimulation.

CONCLUSIONS: Despite of the small number of patients studied, the reduction in seizures suggests the possible role of SF-rTMS in the treatment of refractory epilepsy.

P58
BLOCKADE OF M-TYPE K+ CURRENT PRODUCES EPILEPTIFORM ACTIVITY IN NEONATAL BUT NOT IN ADULT HIPPOCAMPUS IN VITRO: RELEVANCE FOR THE STUDY OF BENIGN NEONATAL CONVULSIONS

ALAVEZ-PÉREZ N,* PEÑA F*
** CINVESTAV, IPN, MÉXICO D.F. MÉXICO*

PURPOSE: Benign familial neonatal convulsions (BNFC), an inheritable epilepsy that expresses just in neonatal period but not in adults, is caused by hypofunctional mutations in genes codifying the M-type K+ current. Several attempts to develop a model for this disease have been made: homozygous deletion of M-current in mice leads to death after birth and heterozygous animals develop normally without epileptic manifestations. On the other hand it has been reported that blockade of M-current *in vitro*, with the specific blocker linopiridine, increases synaptic activity and neuronal excitability. Here we tested if blockade of M-current induces epileptiform activity *in vitro* and whether there is a developmental difference of this effect.

METHODS: We used horizontal hippocampal-enthorinal cortex slices obtained from neonatal (P5-P12) and adult (200-250 g) rats. Extra cellular population recordings of CA1 region were performed. Linopiridine was added to the bath and population activity was recorded for 3h. We used the well known convulsant 4-aminopyridine (4-AP) as control of our experimental conditions.

RESULTS: Bath perfusion of linopiridine produced epileptiform activity just when slices where obtained from neonatal rats. Epileptiform activity consisted of interictal-like and ictal-like activity. In slices obtained form adults, linopiridine induced erratic interictal-like activity. Instead 4-AP was able to produce epileptiform activity in slices obtained either from neonatal or adult rats.

CONCLUSIONS: Here we demonstrated that blockade of M-current produces epileptiform activity in vitro with a similar developmental expression as it is observed for BNFC. This could represent a model of BNFC, which allows the study of epileptogenesis and the developmental change associated with this disease.

P59
NEONATAL TREATMENT WITH MONOSODIUM GLUTAMATE POTENTIATES THE BICUCULLINE METHIODIDE-INDUCED SEIZURES

URENA-GUERRERO ME,*
LOPEZ-PEREZ SJ,* MONASTERIO-RAMIREZ N,*
MORALES-VILLAGRAN A,* BEAS-ZARATE C*
** UNIVERSIDAD DE GUADALAJARA (CUCBA), GUADALAJARA, JALISCO, MÉXICO.*

PURPOSE AND BACKGROUND: Monosodium glutamate (MSG) administrated to neonatal rats induces excitotoxic neuronal death in several brain regions. In cerebral cortex, striatum and hippocampus MSG treatment diminishes GABA-positive cellular density and modifies GAD activity and GABA release. GABA appears the most important neurotransmitter for convulsive threshold maintenance. Therefore, MSG treatment effects on convulsive threshold were evaluated in bicuculline methiodide (BMI)-induced seizures.

METHODS: Newborn male rats received subcutaneously MSG (4 mg/g of body weight) over first week of age at postnatal days (PD) 1, 3, 5 and 7. At PD 60-70, one guide cannula in right lateral ventricle (RLV), and four bilateral

monopolar electrodes were stereotaxically implanted (2 in motor cerebral cortex, and 2 in dorsal hippocampus). BMI 0.25, 0.5, 1, 1.5 or 2 nmol were infused into RLV, and behavioral and electroencephalographic (EEG) changes recorded until one hour after BMI infusion.

RESULTS: In intact rats, BMI 0.25 and 0.5 nmol only induced one small (± 20s) EEG burst at 7 or 5 min after beginning of BMI administration, and some facial automatisms and tonic hindlimb extensions. In MSG-treated rats, the first EEG burst (± 40s) appeared at 4 or 2min for 0.25 and 0.5 nmol, respectively, followed by ictal and interictal discharges along the recording time. Behaviorally, MSG-treated rats showed facial automatisms, tonic hindlimb extensions, forelimb clonus, head nodding and tremors. For BMI 1, 1.5 and 2 nmol the MSG treatment reduced latency for the first EEG burst, and increased ictal activity duration and behavioral signs.

CONCLUSIONS: Data suggest that neuronal loss produced by MSG treatment during neonatal stage could lead to convulsive stages in adulthood.

P60

LONG-TERM POTENTIATION STUDY OF THE HIPPOCAMPAL FORMATION OF PROECHIMYS GUYANNENSIS*: AN ANIMAL SPECIE RESISTANT TO EXPERIMENTAL MODELS OF EPILEPSY*

SILVA AC,* FARIA LC,* ANTONIO LL,* PRIEL MR,* CAVALHEIRO EA*
** UNIVERSIDADE FEDERAL DE SÃO PAULO - ESCOLA PAULISTA - UNIFESP/EPM, BRASIL.*

PURPOSE: *Proechimys guyannensis* (PG) is a rodent specie found in the rainforest from Central and South America. PG received some attention as natural host of infectious agents, however, its brain organization has been poorly investigated. Recent studies conducted in our laboratory indicate that these animals do not develop spontaneous seizures in the pilocarpine or kainate models of epilepsy suggesting the possibility of endogenous antiepileptogenic mechanisms. The aim of the present work was to investigate the hippocampal plasticity under normal conditions of adult male PG using *in vitro* preparation and to compare the results with those obtained from Wistar rats.

METHODS: Transverse hippocampal slices (400 mM) were prepared from 10 animals of both groups. Field excitatory postsynaptic potentials (fEPSPs) were obtained from apical dendritic layer of CA1 area (stratum radiatum) by electrical stimulation of CA1 afferent fibers (Schaffer's collateral pathway). To induce LTP, tetanic stimuli were applied through the bipolar electrode and consisted in 2 trains of high-frequency stimulation (HFS) at 100 Hz separated by 25-s interval. After HFS, fEPSPs responses at single test stimuli (0.05 Hz) were followed over time further than 1h.

RESULTS: The application of long-term potentiation (LTP) protocol showed that this phenomenon is significantly less expressive in the post-tetanic potentiation as well as during late phases in PG hippocampus when compared to that observed in Wistar animals.

CONCLUSIONS: The present findings indicate that the organization of the hippocampal circuitry in PG is functionally diverse from that regularly observed in laboratory animals what could underlie the resistance and protection against epileptogenesis.

P61

THE LACK OF KININ RECEPTORS MODULATES THE DEVELOPMENT OF TEMPORAL LOBE EPILEPSY MODEL

SILVA JUNIOR JA,* ARGAÑARAZ GA,** PEROSA SR,** LENCIONI EC,** BADER M,** CAVALHEIRO EA,**** PESQUERO JB,*** NAFFAH-MAZZACORATTI MG*****
** PATHOLOGY/UNIFESP, SÃO PAULO, BRAZIL. ** NEUROSCIENCES/ UNIFESP, SÃO PAULO, BRAZIL. *** BIOPHYSICS/UNIFESP, SÃO PAULO, BRAZIL. **** NEUROLOGY/UNIFESP, SÃO PAULO, BRAZIL. ***** MAX-DELBRUECK ZENTRUM FUER MOLEKULARE MEDIZIN, BERLIN; DEUTSCHLAND.*

PURPOSE: Due to tissue sclerosis found in epilepsy of limbic origin, which is characterized by shrunken gliotic hippocampus, extensive cell death, and increased amount of cytokines and others inflammatory response-related molecules, we investigate the role of kinin-inflammation mediator receptors in the physiopathology of temporal lobe epilepsy.

METHODS: The present work was delineated to study the development of the epilepsy model induced by pilocarpine in B1 and B2 knockout mice (B1KO and B2KO, respectively) and their control lines. Behavior parameters, cell death and mossy fiber sprouting were analyzed.

RESULTS: B1KO mice showed increased latency for the first seizure, associated to a decreased frequency of spontaneous seizures, when compared with their wild control mice. In addition, B1KO mice showed less cell death in all hippocampal formation associated to a minor grade of mossy fiber sprouting, when compared with control mice. Furthermore, B2KO mice presented minor duration of the silent period and an increased frequency of spontaneous seizures, when compared with control mice. B2KO and wild mice showed similar pattern of cell death in the hippocampus, which was very intense when compared with saline-treated animals. The mossy fiber sprouting was also increased in B2KO mice, when compared to control mice and saline-treated animals.

CONCLUSIONS: Taken together these data suggest a deleterious effect for B1 receptor and a protective effect for B2 receptor during the development of the temporal lobe epilepsy.

P62

CHANGES IN NITRIC OXIDE SYNTHASE (NOS) IN THE BRAIN OF IMMATURE RAT FOLLOWING CONSECUTIVE STATUS EPILEPTICUS (SE) INDUCED BY PILOCARPINE

DONA F,* ORTENSI FMF,* LEITE JP, BRITTO LRG,** PEREIRA MFS,* CAVALHEIRO EA,* FERNANDES MJS****
** UNIVERSIDADE FEDERAL DE SÃO PAULO - UNIFESP, DEPTO. NEUROLOGIA E NEUROCIRURGIA, SÃO PAULO, BRASIL.*
*** UNIVERSIDADE ESTADUAL DE SÃO PAULO (USP), DEPTO. FISIOLOGIA/BIOFÍSICA, SÃO PAULO, BRASIL.*
**** USP-RIBEIRÃO PRETO, DEPTO. NEUROLOGIA, SÃO PAULO, BRASIL.*

PURPOSE: The nitric oxide (NO) has been implicated in normal and pathological process of the neuronal communication. The synthesis of NO is catalyzed by different isoforms of NOS that convert L-Arg to L-citrulline. Researchers have considered that the anti or proconvulsant actions of NO is seizure model-dependent. Our purpose was to elucidate the activity and expression of NOS isoenzymes in the hippocampus of immature rats following multiple pilocarpine-induced status epilepticus (SE).

METHODS: Rats at postnatal days 7-9 were injected with pilocarpine to induce one or three episodes of SE (G1SE and G3SE respectively). Control group (GCon) received saline instead pilocarpine. In all groups, neuronal (nNOS) and inducible NOS (iNOS) activities were determined in crude homogenates of hippocampus extracted 12h after injection, by measuring the formation of [H3]-L-citrulline from [H3]-L-Arginine. The distribution and morphology of the neurons expressing nNOS were visualized by immunohistochemistry.

RESULTS: No significant differences in nNOS and iNOS activities were found between G1SE and GCon. However, the hippocampus of G3SE exhibited a significant increase in nNOS (525%, $p < 0.0001$) and iNOS (233%, $p < 0.001$) when compared to GCon. The qualitative analysis of nNOS-immunoreactivity revealed that strong immunolabeled neurons were more numerous in brain from G3SE compared to G1SE and GCon. These neurons were detected in the cortex, striatum, hypothalamus and thalamus. In the hippocampus of G3SE nNOS-immunoreactive cells was moderated.

CONCLUSIONS: These results permit us to speculate that NO could be one of the mechanisms involved on epileptogenesis developed in immature rat brain following multiple SE induced by pilocarpine.

P63

HEART RATE DYNAMICS DURING INTERICTAL INTERVALS IN AN EPILEPSY MODEL INDUCED BY PILOCARPINE

COLUGNATI DB,* GOMES PAP,* ARIDA RM, CAVALHEIRO EA,** SCORZA FA******
** UNIVERSIDADE DE MOGI DAS CRUZES, MOGI DAS CRUZES, BRASIL.*
*** UNIVERSIDADE FEDERAL DE SÃO PAULO, BRASIL.*
**** UNIVERSIDADE FEDERAL DE SÃO PAULO, BRASIL & UNIVERSIDADE DE MOGI DAS CRUZES, MOGI DAS CRUZES, BRASIL.*

PURPOSE: Sudden unexpected death in epilepsy (SUDEP) is an important phenomenon in individuals with epilepsy, accounting for up to 17% of mortality in this patient group. Among the causes for SUDEP, cardiac dysfunction has been an area of interest. In addition, temporal lobe epilepsy (TLE) may be associated with alterations of autonomic function, such as hyperventilation, apnoea, changes in blood pressure and heart rate (HR), including bradycardia and transient heart rest. Based on this, the aim of our study was to evaluate the HR dynamics during interictal intervals in chronic epileptic rats induced by pilocarpine.

METHODS: Adult, male Wistar rats (n = 05) were given s.c. methylscopolamine followed 30 minutes later by pilocarpine hydrochloride to induce status epilepticus (SE). Seizure activity was monitored behaviorally and terminated with diazepam after 6 h of convulsive SE. Control rats (n = 05) received saline instead of pilocarpine. Sixty days after SE, the heart rate dynamics was measured by a new approach developed in our laboratory, which is able to simulate the animal cage and allow free movement to the rat as well.

RESULTS: Using a pilocarpine-induced rat model of human TLE, we found a significant difference in the mean heart rate between rats with epilepsy (341 bpm ± 6.52) and controls one (307 bpm ± 6.75).

CONCLUSIONS: Our preliminary results suggest a possible imbalance between parasympathetic and sympathetic activity, which could explain the SUDEP. Supported by: FAEP, CAPES, FAPESP and PRONEX.

P64
HIPPOCAMPAL INTRACELLULAR CALCIUM CONCENTRATION IS INCREASED IN PILOCARPINE MODEL OF TEMPORAL LOBE EPILEPSY

FERNANDES MJS,* VIANNA EPM,* CAVALHEIRO EA,* FERREIRA AT**
** UNIVERSIDADE FEDERAL DE SÃO PAULO - UNIFESP, DEPTO. NEUROLOGIA E NEUROCIRURGIA, SÃO PAULO, BRASIL. ** UNIFESP, DEPTO DE BIOFÍSICA, SÃO PAULO, BRASIL.*

PURPOSE: The purpose of this work was to measure the basal intracellular calcium concentration in spontaneous recurrent seizure-experienced rat hippocampus following pilocarpine treatment, by means of a fluorimetric method using fura-2 probe.

METHODS: Adult male Wistar rats (n = 5) were injected with atropine methylbromide (1 mg/kg, sc) and 30 min later with pilocarpine (380 mg/kg, ip) or saline (control group). Rats exhibited status epilepticus (SE) followed by a seizure-free period for approximately 14 days. Rats were observed for spontaneous recurrent seizures (SRS) and after observing at least three SRS animal were considered epileptic. Chronic rats were sacrificed 60 days after pilo injection, their brains sliced in a vibratome with cold artificial cerebrospinal fluid (ACSF). The hippocampus slices were incubated in the ACSF with 2 μg/mL of calcium probe fura-2, AM and pluronic F-127 detergent, for 1 hour in an ice bath. The slices were washed with ACSF, adhered to coverslips and measured in fluorimeter. The excitation light waves were alternated between 340 and 380 nm at room temperature. The emission light 505 nm was measured with a photomultiplier. Intracellular calcium concentration was measured in accordance to previously described method (J of Biol Chem 1985; 260(6): 3440-3450).

RESULTS: Chronic rats presented strong increase in basal calcium in the hippocampus (512 nM, $p < 0.001$) compared to control group (163 nM).

CONCLUSIONS: The sustained high level of intracellular calcium in epileptic animals may represent one of the mechanisms involved with long-lasting hyperexcitability of hippocampal neurons or network, as previously demonstrated by Sanabria et al. (J Physiol 2001; 532: 205-16). This work was supported by FAPESP, CNPq and FADA-Unifesp.

P65
INFLUENCE OF EPILEPSY ON LIFE EXPECTANCY OF RATS WITH CHRONIC SEIZURES

BONONE FM,* PRIEL MR,** CAVALHEIRO EA*
** UNIVERSIDADE FEDERAL DE SÃO PAULO/ESCOLA PAULISTA DE MEDICINA, SÃO PAULO, BRASIL. ** UNIVERSIDADE SÃO CAMILO, SÃO PAULO, BRASIL.*

PURPOSE: The purpose of this study was to observe the effect of epilepsy on the rat life expectancy.

METHODS: Status epilepticus was induced by the administration of pilocarpine hydrochloride. Scopolamine methylnitrate was injected 30 minutes before pilocarpine. After 5th hour of SE, animals received an injection of diazepam. After the SE period, surviving rats were monitored during 24 h up to death or per 16 months. The animals of both the groups that died during this period were analyzed in the Laboratory of Pathology to investigate the possible alterations that could be responsible for their death.

RESULTS: Seizure frequency presented some variation between the 1st and the 10th months of observation (3-6/week) and remained almost stable (4-5/week) in the remaining period. The main behavioral characteristics of the spontaneous seizures did not change in the long run. The life expectancy in experimental animals was shorter (11.8 ± 5.4 months) than that observed in the control group (15.5 ± 3.5 months). No sudden death or death during a seizure was observed in our experimental group. The pathological analysis showed that both experimental and control animals died as consequence of pneumonia

CONCLUSIONS: The experimental group presented shorter life expectancy when compared to controls. This finding was not related to silent period nor the frequency of the seizures. Since the possible cause of death was similar for both groups, we could hypothesize that epilepsy-related physiologic changes might anticipate organic conditions that propitiate the precocious death of these animals.

P66
SUBACUTE ELECTRICAL STIMULATION WITH ANTIEPILEPTIC EFFECTS MODIFIES HIPPOCAMPAL MU AND DELTA RECEPTOR LEVELS IN PATIENTS WITH INTRACTABLE TEMPORAL LOBE SEIZURES

MANOLA C,* VELASCO M,,** VELASCO F,** VELASCO AL,** LETICIA N,* MAGDALENA B, OROZCO S,**** ROCHA L****

** FARMACOBIOLOGÍA, CINVESTAV-IPN, MÉXICO.*
*** HOSPITAL GENERAL DE MÉXICO, MÉXICO.*
**** NEUROCIENCIAS, INSTITUTO NACIONAL DE PSIQUIATRÍA "RAMÓN DE LA FUENTE", MÉXICO.*
***** HOSPITAL DE ESPECIALIDADES DEL CENTRO MÉDICO NACIONAL "SIGLO XXI", MÉXICO.*

PURPOSE: Patients with temporal lobe epilepsy (TLE) present increased delta and mu opioid receptors in temporal cortex. This finding leads to suggest that opioid receptors are involved in the termination of seizures. On the other hand, subacute electrical stimulation of parahippocampus (SAESP) of patients with intractable TLE induces antiepileptic effects. We suggest that SAESP in patients with TLE increases the delta and mu opioid receptors.

METHODS: *In vitro* quantitative autoradiography experiments were carried out to label mu ([3H]-DAMGO, 2 nM) and delta ([3H]-DPDPE, 10 nM) receptors in Ammon's horn (AC) from hippocampus and in parahippocampal cortex (PC) obtained transurgically from patients with TLE that received previously SAESP (130 Hz, 450 ms pulse duration, 200-400 mA) continuously for 16-20 days (SAESP group, n = 6).

RESULTS: This group of patients presented decreased frequency of seizure and interictal spikes. Values were compared with those obtained from patients with TLE without SAESP (TLE group, n=6). The analysis of results revealed that, when compared with TLE group, mu and delta receptors levels from SAESP group were increased in AC (mu, 111%; delta 483%). These changes did not correlate with the cell count in AC. No significant changes were detected in PC.

CONCLUSIONS: Our results led to suggest that an activation of mu and delta receptors could be associated with the antiepiletic effects of the SAESP in patients with TLE.

P67
5-HT1A AGONISTS MODIFY 5-HIAA AND TRYPTOPHAN CEREBRAL LEVELS IN RATS TREATED WITH KAINIC ACID

LÓPEZ-MERAZ ML,* NERI-BAZÁN L,* RIOS C, GONZÁLEZ-TRUJANO ME,** ROCHA L****

** FARMACOBIOLOGÍA, CINVESTAV-IPN, MÉXICO D.F, MÉXICO. ** INSTITUTO NACIONAL DE PSIQUIATRÍA RAMÓN DE LA FUENTE; MÉXICO D.F, MÉXICO. *** INSTITUTO NACIONAL DE NEUROLOGÍA Y NEUROCIRUGÍA; MÉXICO D.F, MÉXICO.*

PURPOSE: The purpose was to evaluate the changes induced by the 5-HT1A agonists 8-0H-DPAT and indorenate in the cerebral serotonin, 5-hydroxi indol-acetic acid (HIAA) and tryptophan levels from rats treated with kainic acid (KA).

METHODS: Male Wistar rats (250-300 g) were divided in groups that received KA (10 mg/kg, i.p.) and were pretreated with saline (KA+SALINE), indorenate (10 mg/kg, i.p.) (KA+INDO), 8-0H-DPAT (1 mg/kg, s.c.) (KA+8-0H-DPAT) or diazepam (10 mg/kg, i.p.,) (KA+DZP). Another group only received saline (SALINE). Forty-eight hours after the KA administration frontal cortex (CX), hippocampus (HIP), striatum (S), amygdala (AMG) and brainstem (BS) were obtained. The tissue was homogenized and centrifuged. The supernatants were analyzed by HPLC.

RESULTS: Serotonin levels were not modified by the treatments in the brain areas evaluated. The tissue levels of HIAA were increased in HIP (269%), S (347%) and AMG (758%) of animals from AK+SALINE group in comparison with SALINE group. The AK+INDO group presented an HIAA augmented concentration in S (204%), whereas in the AK+8-OH-DPAT group HIAA levels were increased in S (232%) and AMG (421%) and in CX (235%) from AK+DZP group. Tryptophan concentration was augmented in S from AK+SALINE (142%) and AK+8-OH-DPAT (107%) groups. On the other hand, the HIAA/5-HT rate increased in AMG from AK+8-OH-DPAT group (2,231%) as well as in the CX and AMG from rats of the AK+DZP group (823% and 1,175%, respectively).

CONCLUSIONS: Indorenate and 8-0H-DPAT avoided or decreased the modifications induced by KA in some brain regions, which could be associated with their inhibitory effect on the KA- induced status epilepticus in rats.

P68
EFFECTS OF MELATONIN ON THE TEMPORAL LOBE EPILEPSY: STUDY THROUGH THE EXPERIMENTAL MODEL INDUCED BY PILOCARPINE

LIMA E,* SOARES JM, GARRIDO YCS,* VALENTE SG,* NAFFAH-MAZZACORATTI MG,** BARACAT EC,*** CAVALHEIRO EA,* AMADO D****
** UNIFESP - NEUROLOGÍA EXPERIMENTAL, BRASIL.*
*** UNIFESP - BIOQUÍMICA, BRASIL.*
**** UNIFESP - GINECOLOGÍA, BRASIL.*

PURPOSE: The aim of this research was to study the effects of pinealectomy in the development of the pilocarpine model of epilepsy in adult male rats.

METHODS: Wistar male adult rats were submitted to pinealectomy and 7 days later they were injected with pilocarpine HCl (350 mg/kg, ip). Another group treated similarly received additional injections of melatonin (2.5 mg/kg), 30 min before pilocarpine, during and 30 min, 1 hr and 2 hr after pilocarpine administration. Following the treatment animals were continuously video-recorded for 60 days (some animals were sacrificed 48 h following pilocarpine for the study of apoptotic cells). After the observation period animals were killed and brain sections were Nissl and neo-Timm stained.

RESULTS: Pilocarpine-induced status epilepticus main characteristics (latency, duration, mortality) were similar for pinealectomized, pinealectomized + melatonin or sham-operated groups of animals. On the other hand, only pinealectomized rats presented a shorter latency for the first spontaneous seizure (i.e., shorter silent "seizure-free" period) when compared with the other groups. This group of animals also presented a higher number of spontaneous seizures during the chronic period of the pilocarpine model. The morphological study of the brains of pinealectomized rats treated with pilocarpine showed increased number of apoptotic cells (48 after pilocarpine-induced SE), increased neuronal loss in the hippocampal formation with marked supragranullar mossy fibers sprouting when compared to the other groups.

CONCLUSIONS: Our data show that pinealectomy facilitates the epileptogenic process that follows the pilocarpine-induced status epilepticus and that this facilitation can be reverted by the simultaneous administration of melatonin.

P69
IN VIVO STUDY OF TRANSGENE EXPRESSION OF PGFA2-GAD67 INTO RAT HIPPOCAMPUS

ZAVALA C,* ROCHA L,* SEGOVIA J,** VERGARA P**
** FARMACOBIOLOGÍA, CINVESTAV-IPN, MÉXICO, D.F, MÉXICO. ** FISIOLOGÍA, BIOFÍSICA Y NEUROCIENCIAS, CINVESTAV-IPN, MÉXICO, D.F, MÉXICO.*

PURPOSE: Decreased GABAergic inhibition has been suggested to induce hyperexcitability. The present study evaluated the potential for preventing seizure generalization by increasing local GABAergic inhibitory activity by applying a new technique: to express the GABA-synthesizing enzyme GAD67 in the host's own astrocytes. Using a transgene in which the activity of GAD67 is under the control of a glial fibrillary acidic protein (GFAP) promoter, it confers astrocyte-specific expression.

METHODS: The rats were transfected with 1, 2 and 4 µg of gfa2-GAD67 (GAD) or pgfa2-Lac-Z (LZ) into hippocampus. Sham control rats (CSh) were not transfected. Three days following microinjection of the transgene, the rats received a single administration of pentylenetetrazol (PTZ, 70 mg/kg i.p.). The latency and duration of seizures were evaluated. The hippocampal tissue samples were obtained 24 hours after of administration of PTZ and expression of transgene was detected by RT-PCR.

RESULTS: In the GAD group the latency to the first clonic seizure decreased in 76% compared to CSh. Nevertheless, an increase of duration of postictal period was observed in the GAD groups. The duration of myoclonic seizures significantly decreased in the GAD group (2 µg) (4.8 ± 0.6 sec) compared to CSh (16.14 ± 5.2 sec). The duration of tonic seizures was decreased in the GAD group (1 µg) compared to CSh (28.67 ± 16.29 sec and 52.67 ± 18.8 sec, no significant). Increased expression of GAD67 was found in animals transfected with pGfa2-GAD67 transgene.

CONCLUSIONS: The present results suggest that transfection with pGfa2-GAD67 have inhibitory effects on the PTZ-induced seizures.

P70
VERATRIDINE-INDUCED REDUCED EXCITATORY AMINO ACID TRANSPORTER ACTIVITY AND OXIDATIVE STRESS

ORTIZ JG,* BERRIOS-CARTAGENA N,* GONZALEZ S*
** DEPT. PHARMACOLOGY & TOXICOLOGY, UNIV. OF PUERTO RICO SCH. MED. SAN JUAN, PUERTO RICO.*

PURPOSE: High-affinity, sodium-dependent, glutamate transporters (EAAT 1-5) terminate synaptic transmission and prevent extracellular glutamate (Glu) from reaching excitotoxic levels. In addition to excessive Glu receptor activation, elevated [Glu] levels hinder the cystine-glutamate exchange thus, disrupting glutathione homeostasis. Veratridine is a convulsant that inhibits EAAT activity. We examine the effects of perturbing the cystine-glutamate exchange on veratridine-induced EAAT inhibition.

METHODS: Rat hippocampal slices are incubated for 1 hour with different agents and then [3H]Glu 50 µM is added for 10 min. The slices are then washed, solubilized and counted.

RESULTS: Chlorpheg, a cystine-glutamate exchange inhibitor, prevents the inhibitory effects of veratridine on EAAT activity. On the other hand, riluzole, (used for amyolateral sclerosis) directly increases EAAT activity (120% of control) and also prevents veratridine-induced EAAT inhibition.

CONCLUSIONS: EAAT activity modulation either directly (as with riluzole) or indirectly (via cystine-glutamate exchange and glutathione) dynamics may be important for reducing Veratridine-induced epileptiform activity.

P71
POPULATION PHARMACOKINETICS OF CARBAMAZEPINE IN MEXICAN EPILEPTIC PATIENTS

ROMANO S,* MEDINA EL,* SALAS AL,* PÉREZ JT,* VARGAS JM,* RODRÍGUEZ I**
** UNIVERSIDAD AUTÓNOMA DE SAN LUIS POTOSÍ. SAN LUIS POTOSÍ, S.L.P. MÉXICO.*
*** HOSPITAL CENTRAL "IGNACIO MORONES PRIETO". SAN LUIS POTOSÍ, S.L.P. MÉXICO.*

PURPOSE: To develop a population model for describing variability in pharmacokinetic of Carbamazepine (CBZ) in a Mexican population of adult patients with epilepsy and to quantify the effect of demographic and comedication factors on the clearance (CL) of CBZ.

METHODS: A retrospective study with data from adult epileptic patients chronically taking CBZ (Tegretol®) as mono or polytherapy was done. A mixed-effect model with sparse data collected during routine clinical care in the period January 2000-March 2002 was implemented with the software NONMEM. The study included steady state serum concentration of patients receiving CBZ. The following covariates were tested for their influence on CL: weight, age, dose/day, sex, surface area, height, and concomitant therapy (Primidone, Valproic acid or Phenytoin).

RESULTS: One hundred sixty-one serum samples from 104 patients (30 ± 10.7 years, 62.3 ± 12.5 kg) receiving CBZ were analyzed. A one-compartment model with first-order absorption and elimination was used. Due to blood sample was carried out at only one time-point, only the parameter CL was estimated while the absorption rate constant and the volume of distribution were fixed to values described in the literature. The final regression model for CBZ clearance was: CL = (0.614 Surface Area + 0.0016 Dose/day) (1 + 0.278 Phenytoin) (1 + 0.326 Primidone).

CONCLUSIONS: The effect of dose/day on the CL confirmed the dose-dependent nature of CBZ pharmacokinetics. Comedication with phenytoin and primidone appears to be importantly influencing the pharmacokinetic of CBZ should be considered in the dose adjustment of CBZ of this population of epileptic patients.

P72
CHARACTERIZATION OF MUSCARINIC RECEPTORS BINDING IN RAT BRAIN AFTER PENICILLIN-G INTRACEREBRAL ADMINISTRATION

CARMONA L,* MARTÍNEZ A,** CONTRERAS B,** ROCHA L*
** CINVESTAV-IPN, FARMACOBIOLOGÍA, DISTRITO FEDERAL, MÉXICO.*
*** INSTITUTO NACIONAL DE PSIQUIATRÍA, NEUROCIENCIAS, DISTRITO FEDERAL, MÉXICO.*

PURPOSE: The penicillin-G has been used to produce epileptic foci and interictal activity. Muscarinic -receptor binding changes were evaluated after the repetitive administration of penicillin into amygdala nucleus.

METHODS: Adult male Wistar rats were used. Rats (n = 7) received daily intracerebral administration of penicillin-G (50 UI, 1 µL) into the basolateral amigdalae nucleus through a canula attached to a bipolar electrode. The control group (n = 7) was manipulated as experimental group, except they received saline solution (1 µL). The electrographic recordings of the ipsilateral (ipsi) and contralateral (contra) amigdalae were obtained 5 min before and 15 min after injection. The animals were sacrificed 24 h after last administration and the brains were processed for *in vitro* autoradiography. Muscarinic-receptor binding was evaluated in epileptic focus and surrounding area.

RESULTS: The epileptic focus (basolateral amigdalae nucleus) was confirmed through an electrographic recording. We found that spikes were usually associated with behavioural changes (wink, chewing and myoclonus). Autoradiography experiments revealed a significant decrease ($p < 0.05$) of muscarinic receptor binding in epileptic focus (41%) in central amigdalae (CA) ipsi (28%); in medial amigdalae (MA) ipsi (22%), in piriform cortex ipsi (42%) and a significant increase in dentate gyrus contra (18%). A no significant decrease in sensorimotor cortex ipsi (13%), in CA contra (13%), MA contra (6%) and in thalamus ipsi (9%) and contra (11%).

CONCLUSIONS: The administration of penicillin into amygdala induces changes in muscarinic receptors similarly to those observed in the human epileptic focus. The results are different to the effects in peripheral structures of human epileptic focus.

P73
UNUSUAL TRANSMANTLE FOCAL-CORTICAL DYSPLASIA (TD) AND REFRACTORY EPILEPSY (RE)

CZORNYJ L,* LUBIENIECKI F,* CAMARERO S,* POMATA H,* BARTULUCHI M,* TARATUTO AL,** LAZAROWSKI A***
** HOSPITAL DE PEDIATRÍA "PROF. JUAN P. GARRAHAN" - BUENOS AIRES-ARGENTINA.*
*** INSTITUTO DE INVESTIGACIONES NEUROLÓGICAS FLENI - BUENOS AIRES- ARGENTINA.*
**** DEPARTAMENTO DE BIOQUÍMICA CLÍNICA-FACULTAD DE FARMACIA Y BIOQUÍMICA-UNIVERSIDAD DE BUENOS AIRES-ARGENTINA.*

PURPOSE: Several malformations of cerebral cortical development including the TD, have been described associated with RE. The mechanisms of drug resistance in epilepsy are being intensively explored. The P-glycoprotein and multidrug resistance-associated protein-1 (MRP-1) are up-regulated in human epileptogenic pathologies. However, the breast cancer resistance protein (BCRP) has not been related with RE at date. We describe a 13 years old boy with RE and abnormal MRI images (T1, FLAIR and T2) compatible with cortical TD brain lesions, and unusual pathological findings with expression of BCRP in brain specimen.

METHODS: Clinical follow-up, images and pathologic studies were developed by routinely methods. Surgical treatment included complete lesion resection. Immunohistochemistry and electronic microscope (EM) analysis were performed. Monoclonal antibodies for P-glycoprotein and BCRP were used.

RESULTS: In brain specimens, the frontal cortex was normal, however deeper brain areas related with images findings, showed features of TD with abnormal ballooned neurons with high accumulation of PAS+, sudanophilic and autoflourescent lipopigment (LP). EM study showed classic lipofucsin and some rectilinear and fingerprint inclusions. BCRP was expressed in several ballooned cells and P-glycoprotein was negative. MRP-1 was not studied. During two years of clinical follow-up after the surgical treatment, the patient remains asymptomatic.

CONCLUSIONS: It is not know if there are any relationship between BCRP and LP and if AEDs are substrates of BCRP. However, the expression of BCRP in these ballooned neurons with LP accumulation from the epileptogenic brain area, suggest that BCRP could be associated to refractory epileptic phenotype.

P74
THE CORRELATION OF VIGABATRIN TREATMENT AND BRAIN CONCENTRATIONS OF GABA AND GAD IN MICE

SWIADER MJ,* WIELOSZ M,* CZUCZWAR SJ**
** DEPARTMENT OF PHARMACOLOGY, MEDICAL UNIVERSITY, LUBLIN, POLAND.*
*** DEPARTMENT OF PATHOPHYSIOLOGY, MEDICAL UNIVERSITY, LUBLIN, POLAND.*

PURPOSE: Vigabatrin (VGB) is a novel antiepileptic drug, which increases GABA level by an irreversible inhibition of GABA-aminotransferase. The aim of this study was to evaluate the effects of 1-day, 3-day or 7-day treatment with vigabatrin on the brain concentrations of GABA and GAD (glutamate acid decarboxylase) in mice. Moreover, the influence of VGB in various doses on pentetrazole (PTZ)-induced seizures was also tested.

METHODS: Chemical seizures were induced by a subcutaneous injection of PTZ, at least three different doses and defined as a clonus of the whole body with an accompanying loss of righting reflex, lasting for over 3 s. Determination of endogenous GABA concentration and GAD activity were estimated in whole brain homogenates.

RESULTS: VGB given acutely at the doses of 125 and 250 mg/kg did not affect CD50 values of PTZ (50% convulsive doses). VGB, at higher doses, significantly increased CD50 values against PTZ-induced convulsions in mice. Subchronical administration has shown that VGB at the dose of 250 mg/kg elevated the threshold, having no impact on this parameter at lower doses. Furthermore, 7-day treatment with VGB, starting from 125 mg/kg, raised the threshold for PTZ. It is noteworthy that the anticonvulsant activity of VGB entirely correlated with an increase of GABA and reduction of GAD activity.

CONCLUSIONS: The obtained results indicate that the chronic treatment with VGB could reduce its effective anticonvulsant dose in mice.

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P75
ANTICONVULSANT ACTIVITY OF SPARTEIN IN EXPERIMENTAL MODELS OF EPILEPTIFORM SEIZURES

HERNÁNDEZ TA,* GARCÍA LP,** RUIZ LM,** MARQUEZ CO,* VILLAFÁN BJR,* GARZÓN DP*
** UNIVERSIDAD DE GUADALAJARA. CENTRO UNIVERSITARIO DE CIENCIAS DE LA SALUD. DEPARTAMENTO DE FISIOLOGÍA. INSTITUTO DE ENFERMEDADES CRÓNICO-DEGENERATIVAS. GUADALAJARA, JALISCO, MÉXICO. ** UNIVERSIDAD DE GUADALAJARA. CENTRO UNIVERSITARIO DE CIENCIAS BIOLÓGICAS Y AGROPECUARIAS. DEPARTAMENTO DE BOTÁNICA Y ZOOLOGÍA. GUADALAJARA, JALISCO, MÉXICO.*

PURPOSE: New antiepileptic drugs are necessary to control the whole epileptic population as well as that under polipharmacotherapy (25-30%) because they display difficulties to become seizure free. Spartein has been used as antiarrhythmic drug and, might display antiepileptic activity upon the basis that it might share the voltage gated sodium channel inhibition common mechanism of the antiepileptic and antiarrhythmic drug phenytoin.

METHODS: Spartein sulfate was tested to inhibit seizures induced either after petroleum ether (EP) inhalation (15 mL/7 min) or following a subcutaneously injected pentamethylenetetrazole (PTZ sc) at doses of 70 mg/kg (CD90) in 250 ± 50 g weighing male and female Swiss-Wistar rats after drug protection either with carbamazepine (CBZ) or spartein sulphate (ES) at oral daily doses of 30 mg/kg or 40 mg/kg every 12 h during seven days, respectively.

RESULTS: CBZ were able to inhibit 85% and 40% of EP and PTZ sc induced seizures whereas SE was able to inhibit them in 55% and 100% accordingly. Differences were not significant neither in response to the used methods nor to the sex of rats. Significant differences were observed in the duration of latency, reflex, uprighting and recovery ($p < 0.05$).

CONCLUSIONS: Partly protected animals with CBZ and ES displayed a prolonged latency as well as a shorter reflex, uprighting and recovery duration. Preclinical studies with ES indicate the possibility of using it in clinical studies to inhibit non convulsive seizures.

P76
P-GLYCOPROTEIN EXPRESSION IN SEVERAL LIMBIC BRAIN REGIONS IN THE AMYGDALA-KINDLED RATS WITH DIFFERENT RESPONSE TO PHENYTOIN

JIMÉNEZ-RUBIO G,* OROZCO-SUÁREZ S,** GONZÁLEZ-TRUJANO ME,* ROCHA L***
** INSTITUTO NACIONAL DE PSIQUIATRÍA "RAMÓN DE LA FUENTE", MÉXICO, D.F., MÉXICO. ** UNIDAD DE INV. MÉDICA EN ENFERMEDADES NEUROLÓGICAS, H. DE ESPECIALIDADES, CMN "SIGLO-XXI", IMSS. MÉXICO, D.F., MÉXICO. *** CENTRO DE INVESTIGACIÓN Y ESTUDIOS AVANZADOS, SEDE SUR, FARMACOBIOLOGÍA, INSTITUTO POLITÉCNICO NACIONAL. MÉXICO, D.F, MÉXICO.*

PURPOSE: Several studies have shown that multidrug transporter P-glycoprotein (PGP-1) is over expressed in endothelial cells (EC) from brain blood vessels in patients with refractory temporal lobe epilepsy (TLE), suggesting the role of PGP-1 in pharmacoresistance to antiepileptic drugs (AEDs). In this study we used the amygdala-kindled rats, a refractory model to AEDs, to evaluate the PGP-1 expression in limbic brain regions involved in TLE.

METHODS: Male Wistar rats (250-350 g) were kindled by basolateral amygdala stimulation. After kindling acquisition, four independent acute phenytoin (75 mg/kg i.p.) trials were done. Response to phenytoin was determined using a threshold after-discharge; the response was sensitive (KSEN), variable (KVAR) or resistant kindled rats (KRES). PGP-1 expression was analyzed 24 h after the last electrical stimulation by immunohistochemistry. Somatosensorial cortex, Hippocampal formation, and basolateral amygdala were examined by confocal and fluorescence microscopy.

RESULTS: The results showed the highest expression of the PGP-1 in the cortex and amygdala and the lowest expression in the hippocampus in all experimental groups. About colocalization, kindled rats PGP-1 staining was observed in EC, astrocytes in CA1 and cortex, and neurons in amygdala. In KSEN rats PGP-1 staining was observed in EC and astrocytes, whereas the KVAR rats showed an increase PGP-1 expression in EC, glia and neurons both in all testing areas. The KRES group showed an increase in the expression of the PGP-1 in EC and astrocytes of cerebral cortex and CA1 in hippocampus, and neurons and glia in amygdala area.

CONCLUSIONS: PGP-1 is expressed mainly in KSENS, KVAR and KRES groups in the endothelial and glial cells of the blood brain barrier, these results suggest that the PGP-1 probably works like a second barrier for drugs that cross the central nervous system.

P77
VINPOCETINE INHIBITS THE EPILEPTIC CORTICAL ACTIVITY, THE AUDITORY BRAINSTEM RESPONSE (ABR) ABNORMALITIES AND THE HEARING LOSS IN TWO EXPERIMENTAL ANIMAL MODELS OF EPILEPSY

SITGES M,* NEKRASSOV V*
** INSTITUTO DE INVESTIGACIONES BIOMÉDICAS, MÉXICO D.F. MÉXICO.*

PURPOSE: To explore the capability of the sodium channel blocker and memory enhancer, vinpocetine, to overcome the epileptic cortical activity, the abnormalities in the later waves of the auditory brainstem responses (ABRs) and the hearing loss induced by pentylenetetrazole (PTZ) and 4-aminopyridine (4-AP) at convulsing doses in the guinea pig *in vivo*.

METHODS: EEG and ABR recordings before and at specific times within two hours after the injection of PTZ (100 mg/kg) or 4-AP (2 mg/kg) were taken in animals pre-injected with vehicle or with vinpocetine (2 mg/kg) before PTZ or 4-AP. The amplitude and latency of the ABR waves induced by a monoaural stimulus of high intensity (100 dB) at 4 and 8 kHz pure tone frequencies and the ABR threshold were determined in the animals exposed to the different experimental conditions.

RESULTS: Vinpocetine inhibited the EEG changes, the alterations in amplitude and latency of the later ABR waves and the increase in the ABR threshold induced by the convulsing agents for the ictal and post-ictal periods.

CONCLUSIONS: Vinpocetine is likely to be a promising alternative for the treatment of epilepsy, as it prevents the retro-cochlear alterations and the hearing decline that accompany the epileptic cortical activity.

P78
CHILDHOOD ABSENCE EPILEPSY EVOLVING TO JME AS A DISTINCT EPILEPSY SYNDROME: MORE ELECTROCLINICAL AND GENETIC EVIDENCE FROM 45 FAMILIES

MEDINA MT,[*,†,‡] DURÓN RM,[*,†,‡] ALONSO ME,[‡,§] DRAVET C,[‡,‖] LEÓN L,[‡,¶] LOPEZ-RUIZ M,[‡,**] RAMOS-RAMIREZ R,[‡,**] PASCUAL CASTROVIEJO I,[‡,††] WEISSBECKER K,[‡,‡‡] WESTLING B,[‡] PEREZ-GOSIENGFIAO KT,[†,‡] KHAN S,[‡,§§] PINEDA G,[‡] MORITA R,[‡,‖‖] RASMUSSEN A,[‡,§] RAMOS PEEK J,[‡,§] CORDOVA S,[‡] MARTÍNEZ-JUAREZ I,[†,‡,§] RUBIO-DONNADIEU F,[‡,§] OCHOA A,[‡,§] JARA-PRADO A,[‡,§] BAILEY JN,[‡,¶¶] TANAKA M,[†] BAI D,[†] MACHADO-SALAS J,[†,‡] DELGADO-ESCUETA AV[†,‡]
[*] NATIONAL AUTONOMOUS UNIVERSITY OF HONDURAS, TEGUCIGALPA, HONDURAS. [†] CALIFORNIA COMPREHENSIVE EPILEPSY PROGRAM, DAVID GEFFEN SCHOOL OF MEDICINE, UNIVERSITY OF CALIFORNIA, LOS ANGELES, USA. [‡] GENESS INTERNATIONAL CONSORTIUM. [§] NATIONAL INSTITUTE OF NEUROLOGY AND NEUROSURGERY, MEXICO CITY, MEXICO. [‖] HOSPITAL HENRI GASTAUT, MARSEILLE, FRANCE. [¶] ANGEL LEAÑOS HOSPITAL, GUADALAJARA, MEXICO. [**] NEUROLOGY AND NEUROSURGERY UNIT, MEXICO, GENERAL HOSPITAL, MEXICO CITY, MEXICO. [††] PEDIATRIC NEUROLOGY DEPT., UNIVERSITY HOSPITAL LA PAZ, MADRID, SPAIN. [‡‡] TULANE UNIVERSITY MEDICAL CENTER, NEW ORLEANS, LOUISIANA, USA. [§§] NEUROSCIENCES DEPT., RIYADH ARMED FORCES HOSPITAL, SAUDI ARABIA. [‖‖] LABORATORY FOR NEUROGENETICS, RIKEN BRAIN SCIENCE INSTITUTE, SAITAMA, JAPAN. [¶¶] NEUROPSYCHIATRY INSTITUTE, DAVID GEFFEN SCHOOL OF MEDICINE, UNIVERSITY OF CALIFORNIA, LOS ANGELES, USA.

PURPOSE: To determine the electroclinical phenotype and genetic characteristics of childhood absence (CAE) evolving to juvenile myoclonic epilepsy (JME) in a cohort of 45 families.

METHODS: We studied 45 families from 1978 to 2004 in epilepsy clinics from Los Angeles (28 families), Mexico (10 families), Honduras (3 families), Saudi Arabia (3 families), and Spain (1 family). Out of these, 82% were multiplex/multigenerational and 28% were simplex. Electroclinical data was independently verified by at least two epileptologists. Diagnoses were based on the International League Against Epilepsy classifications of seizures and syndromes. Analysis of familial aggregation of seizures and epilepsy was done to compare relative risks with general population and with a JME cohort of 92 families. Outcome was analyzed in 38 patients (84%) who had follow-up into adulthood. One large family (100 members) from Mexico was selected to start genome screening using both gel based radiation microstellites and fluorescent microstellite markers.

RESULTS: Most probands were female (29 F: 16 M or 1.8F: 1M ratio). Age at onset was 7 years for CAE, 14 years for JME and 12 years for tonic-clonic seizures. Apart from seizures, probands were neurologically normal. EEG abnormalities were found in 95% probands: 78% had 2-5 Hz single spike and slow wave complexes associated with absences; 54% ictal/interictal 4-6 Hz polyspike wave complexes (often associated with myoclonias) and 22%

had interictal bursts of diffuse fast low amplitude 15-25 Hz rhythms in wakeful state. Affected relatives had mostly absences and similar EEG findings. Maternal transmission occurred in 62% and paternal transmission in 38% of cases. Only 8.6% of probands (3/35) taking antiepileptic treatment reported no seizures in adulthood. Pyknoleptic absences continued to be the chief complaint in two-thirds of probands. Valproate monotherapy significantly reduced grand mal tonic-clonic seizures in 80% and polytherapy was needed in 11.4% of cases. There was an increased risk for absence seizures in other family members. In contrast, relatives from families with classic JME showed increased risk for myoclonic seizures and less risk of absences seizures.

CONCLUSIONS: The phenotype of CAE evolving to JME in the 45 families showed that: 1) it starts with absences with 3 Hz single spike and slow wave in childhood, 2) absences are the most common seizure type in affected members, 3) absences are the most common persisting seizure type in probands, 4) like typical CAE, the affected persons are most often female and transmission is predominantly maternal; 5) despite treatment with valproate monotherapy or polytherapy, absences persist lifelong; 6) lod scores were negative/exclusionary between the large Mexican family and JME loci in 6p12-11, 2q22, 15q14, 6p21.3 and 5q; lod scores were also exclusionary for the benign adult familial myoclonic epilepsy loci in 8q23, and partial epilepsy with variable foci in 22q11.

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P79
JUVENILE MYOCLONIC EPILEPSY (JME): ELECTROENCEPHALOGRAPHIC ANALYSIS OF A SERIES OF CASES

VASQUEZ ALFARO R*
** HOSPITAL GENERAL DE MÉXICO, MÉXICO.*

PURPOSE: Juvenile myoclonic epilepsy is a not very frequent syndrome that is characterized by the presence of absences, myoclonic and tonic-clonic seizure. Absences usually begin at 8 years of age with the; at 12, myoclonic seizures are added and before 18, tonic clonic seizures present 2 of the mentioned components and the characteristic electroencephalographic feature with polyspike, spike wave and slow wave of 2.5 to 3.5 Hz and duration of 1 to 10 seconds, are required for diagnosis. Recently it has been discussed on the existence of intermittent theta activity.

METHODS: The objective of this work is to present a review of electroencephalographic and clinic features of patients with JME.

RESULTS: In this retrospective study of the last three years, 64 clinical files and electroencephalograms were reviewed. There were 31 men and 33 women, 12-36 years old, with an average age of beginning of 14 years; 78% of the patients present absences, myoclonic and tonic-clonic seizures. Neurological examination was normal in all patients and one patient had the syndrome of LEOPARD associated. Electroencephalograms showed normal background activity in 82% of patients. The remaining 18% showed focal tetha activity in frontal regions in 60%, 28% in temporal region and 12% multifocal. The predominant paroxystic activity was polyspike followed spike- slow wave of 3.5 Hz, with 1.5 – 2 second up to 10 seconds of duration. 40% of the patients presented paroxystic activity unrelated to fotoestimulation. Patients were treated with Valproate with clinical control of seizures in 90% of the cases; the rest required the addition of another drug like the clonazepam or lamotrigine or topiramate.

CONCLUSIONS: Patients with JME present characteristic electroencephalographic features that allows to make the right diagnosis since the first study; the proportion of photosensitive patients is bigger in our hospital comparing with that reported in the literature; in previous times, patients with focal activity were excluded of the diagnosis; currently, it is considered as a variant of the juvenile myoclonic epilepsy. 90% of the patients respond appropriately to Valproate at a dose from 15 to 30 mg/kg per day.

P80
ELECTROENCEPHALOGRAPHIC ALTERATIONS IN CHILDREN WITH ATTENTION DEFICIT HYPERACTIVITY DISORDER

HIGUERA F,* PELLA V,** GARCIA G***
** CHILD AND ADOLESCENT PSYCHIATRIC, HOSPITAL ÁNGELES DEL PEDREGAL, MEXICO CITY, MEXICO. ** HEAD EPILEPSY CLINIC, HOSPITAL ÁNGELES DEL PEDREGAL, MEXICO CITY, MÉXICO. *** EPILEPSY CLINIC, HOSPITAL ANGELES DEL PEDREGAL, MEXICO CITY, MEXICO.*

PURPOSE: Attention deficit hyperactivity disorders (ADHD) is a syndrome that affects between 3-5% of the population of school-aged children and may be accompanied by learning, language, behavioural or motor disorders.

OBJECTIVE: We analyze the alterations of video EEG recordings in patients with ADHD, with no seizures history and who satisfied the criteria for ADHD according to the DSM-IV. They haven't received a good treatment, and were referred to the Epilepsy Clinic of Hospital Angeles del Pedregal, Mexico City, from January 2000 to December 2003.

METHODS: We studied 43 patients, 30 male and 13 female, 6 to 12 years old (average 9 years).

RESULTS: The recordings in the waking state showed significant anomalies, during the hyperventilation (acute spike and wave discharges), acute spike and wave paroxysmal activity in the left frontal region and acute spike and wave in left temporal region. The Video EEG Polysomnography study revealed specific alterations in 25 patients. There was continuous spike wave during sleep (CSWS) 4, paroxysmal discharges (acute spike and wave) in the fronto-temporal region with secondary generalization 9, frequent generalized paroxysmal discharges of spike and slow wave during all phases of sleep 9, and spike and slow wave in bilateral frontal region 3.
CONCLUSIONS: The patients with ADHD, without response to the treatment have neurophysiological disorders observed in some patients during the sleep. It is necessary to consider the study of the video EEG /PSG in some cases of ADHD.

81
EPILEPSY IN THE ELDERLY

RIOL LOZANO JM,* GARCIA MEDINA AJ,* RODRIGUEZ GARCIA JN,* SOTO LAVASTIDA A,* ANILLO AGUERREVERE R,* GARCIA FIDALGO JA**
** ABEL SANTAMARÍA UNIVERSITY HOSPITAL, PINAR DEL RIO, CUBA. ** NEUROLOGICAL INSTITUTE, HAVANA CITY, CUBA.*

PURPOSE: Epilepsy affects 1-2% of the general population. An increase of epilepsy in adult patients (elderly) older than 60 years has been reported. The objective of the present study was to know the clinical - etiologic behaviour of epilepsy in elderly patients in the municipality of Consolacion del Sur, Pinar del Rio province.
METHODS: Consolacion population is composed, according to the 2003- census , of 87,419 inhabitants, 14,30% older than 60 years. A prospective and descriptive study of cases with epilepsy in the elderly was done from January, 2001 to January, 2004. A form was designed to register demographic and paraclinic data. The final data were recorded upon a data base to make the statistical analysis.
RESULTS: Two hundred and twelve epileptic patients were found, which represent 1.7% of the total elderly population, age range 6l-102 years old, and age average 75.6 years, with predominantly male sex and white race. Epilepsy was more frequent in the 70-80 years old group. Complex partial seizure was predominant (52.3%). 34.3% of epilepsy causes were unknown. The principal causes of symptomatic epilepsy were: stroke (42.5%), degenerative disorders (14.7%), and brain tumors (4.3%).
CONCLUSIONS: Epilepsy in the elderly represents an increasing health problem. Age and cerebrovascular disorders are the main risk factors of seizures in the elderly.

P82
EPILEPSY IN THE ELDERLY IN THE HOSPITAL ESPAÑOL OF MEXICO

ALBERT G,* YAÑEZ JC,* LEON F*
** HOSPITAL ESPAÑOL DE MÉXICO, MÉXICO*

PURPOSE: The purpose of this study was to see if the causes described in the literature were the same as the ones we had, and the second purpose was to describe the type of seizures, because of an apparent high incidence of atonic fits. So we determine to study the frequency, type, treatment and associated factors in patients over 65 years of age.
METHODS: A retrospective population study was made in external patients during two years in the Neurology service, obtaining age, gender, type of seizure, age of beginning, underlying diseases and treatment.
RESULTS: Of 634 patients, 87 (13.7%) had epilepsy, 45 (51.7%) were over 65 years of age, 19 women 26 men, the mean age was 73.3 with a range from 66 to 93 years. Twenty-four patients had generalize seizures, 5 simple partial, 8 partial complex and 8 partial secondary generalized. The first cause was vascular events in 19 patients (42.2%).
CONCLUSIONS: Our casuistic analysis was similar to the reported in the world literature; atonic seizures were the most expensive ones in the process of its study because of the need of differential diagnosis, concluding the same incidence as the literature.

P83
EPILEPSY AND ELDERLY ADULTS IN MEXICO. PROFILE OF USERS

LOPEZ-GUTIERREZ F,* RUBIO-DONNADIEU F,** RIOS-CASTAÑEDA C***
** MASTER IN HEALTH SERVICES RESEARCH, PRIORITY PROGRAM OF EPILEPSY, NATIONAL INSTITUTE OF NEUROLOGY AND NEUROSURGERY MVS, SECRETARIAT OF HEALTH, MEXICO CITY, MEXICO.*
*** DIRECTOR, PRIORITY PROGRAM OF EPILEPSY, LABORATORY OF NEUROCHEMISTRY, NATIONAL INSTITUTE OF NEUROLOGY AND NEUROSURGERY MVS, SECRETARIAT OF HEALTH, MEXICO CITY, MEXICO.*
**** CHIEF OF LABORATORY OF NEUROCHEMISTRY, NATIONAL INSTITUTE OF NEUROLOGY AND NEUROSURGERY MVS, SECRETARIAT OF HEALTH, MEXICO CITY, MEXICO.*

PURPOSE: Epilepsy in Mexico is a problem of Public Health; the prevalence is 15/1,000 in the general population and in the older adults prevalence is not known with certainty. The aging of our population of 40-65 years, is an increasing problem as this group uses

health services four times more than the rest of the population.

METHODS: A cross-sectional study, sampling 5,000 users of telephone line of information of the Priority Program of Epilepsy. Eighty-seven were non relative and/or patients, the remaining 4,913 participated with their opinions (1,648 patients and 3,219 relatives); successfully obtained variables were: age, gender, region of residence in the Mexican Republic, reasons for calling, requests of medical attention, doubts on the treatment and information on epilepsy.

RESULTS: 632/4,913 users were 40-65 years old and they constituted the 12.86% of the total sample. The rest was distributed by age, as follows: 0-9 (720), 10-19 (1,011), 20-29 (1,595) and 30-39 (1,042), with the respective following percentages 14.65, 20.57, 32.46 and 21.20. The users came from the Federal District, State of Mexico, Veracruz, Guanajuato, Jalisco and Puebla. The most frequent requests were: where to go to receive medical attention, to ask for general information on epilepsy and why they have seizures if still with treatment.

CONCLUSIONS: This survey used the opinions of the elderly patients with epilepsy in perspective of their better quality of life.

P84
INSTITUTIONAL EXPERIENCE IN ONE HUNDRED SURGICALLY TREATED TEMPORAL LOBE EPILEPSY PATIENTS WITH A FOLLOW-UP OF OVER 2 YEARS

CASTILLO MCR,* ALONSO-VANEGAS MA,** BRUST-MASCHER E,* RUIZ M,** SUÁSTEGUI R, RUANO L,** LÓPEZ M,** DÍAZ-VICTORIA AR,* MARTÍNEZ AR,** RAMOS PJ,** RUBIO-DONNADIEU F*****

** FUNDACIÓN MÉDICA SUR, MEXICO CITY, MEXICO.*
*** NATIONAL INSTITUTE OF NEUROLOGY AND NEUROSURGERY, MEXICO CITY, MEXICO.*
**** HOSPITAL INFANTIL DE MÉXICO, MEXICO CITY, MEXICO.*

PURPOSE: It is estimated that 1-2% of the Mexican population suffers from epilepsy, accounting for approximately 2,000,000 patients. Considering that 20% of these patients have intractable epilepsy, approximately 200,000-400,000 patients suffer partial epilepsy syndromes amenable to surgical treatment. Mesial temporal lobe epilepsy (MTLE) is the most refractory form of epilepsy (10% of patients become seizure free). Disabling seizures cause progressive, irreversible behavioral disturbances and only few patients become seizure free after failing two antiepileptic drug trials. MTLE has been recognized as a surgically remediable syndrome.

METHODS: Since the epilepsy surgery program at the National Institute of Neurology and Neurosurgery was established in 1999, we have used the Montreal Neurological Institute International Protocol to evaluate intractable temporal epilepsy patients. This protocol includes: review of previous studies and medical history, electroencephalography including video-EEG and polisomnography, neuroimaging (computed tomography, magnetic resonance imaging, fMRI, MR spectroscopy), neuropsychological and psychiatric evaluation, as well as amytal test and ictal/interictal SPECT in special cases. In the operating room, electrocorticography and acute depth electrode implantation are carried out systematically to tailor the surgical resection.

RESULTS: Among 100 patients with a follow up > 2 years, 84% are seizure free, 10% improved and 6% not improved, 0% mortality and 2% morbidity.

CONCLUSIONS: Our results, comparable to internationally published series, show that surgical success is dependant on adequate candidate selection, complete surgical resection of epileptogenic areas and/or interruption of abnormal electrical activity propagation. Temporal lobe surgery is a feasible, safe and effective approach to Intractable MTLE, and should be thoroughly integrated within comprehensive epilepsy centers.

P85
LANGUAGE LATERALIZATION BY FMRI AND WADA TEST IN 4 PATIENTS WITH EPILEPSY

CONDE R,* TREJO D,** PELLA V, OCEGUEDA K,**** SÁNCHEZ J********

** NEURORADIOLOGY, DEPARTMENT OF MRI, HOSPITAL ÁNGELES DEL PEDREGAL, MEXICO CITY, MEXICO.*
*** PSYCHOBIOLOGY DEPARTMENT OF MRI, DEPARTMENT OF MRI, HOSPITAL ÁNGELES DEL PEDREGAL, MEXICO CITY, MEXICO.*
**** NEUROLOGY, HEAD EPILEPSY CLINIC, DEPARTMENT OF MRI, HOSPITAL ÁNGELES DEL PEDREGAL, MEXICO CITY, MEXICO.*
***** DEPARTMENT OF MRI, DEPARTMENT OF MRI, HOSPITAL ÁNGELES DEL PEDREGAL, MEXICO CITY, MEXICO.*
****** RADIOLOGY, DEPARTMENT OF MRI, HOSPITAL ÁNGELES DEL PEDREGAL, MEXICO CITY, MEXICO.*

PURPOSE: To compare the determination of language dominance using fMRI and Wada test in 4 patients.

METHODS: Comparing the determination of language dominance using fMRI with results of the Wada test and Listening Dicotic Test (LDT) in 3 patients with temporal lobe epilepsy and 1 patient with frontal right epilepsy. All the patients went under epilepsy surgery. All fMRI imaging procedures were performed on a GE 1.5 T High Speed, with head cuadrature coil, T2 weighted gradient echo planar images and T1 weighted images for anatomic reference. The paradigm used was silent words generation in Spanish. We used blocks design and the postprocesing was performed in SPM99.

RESULTS: We found 91% of concordance between both tests and 90% with LDT (4/4 patient, but different activation in

each one). The overall rate of false categorization by fMRI was 9%. Language fMRI might reduced the necessity of the Wada test for language lateralization, in presurgical patients.
CONCLUSIONS: In candidates for epilepsy surgery, particularly in those with temporal lobe seizures, presurgical evaluation of language lateralization is essential. In this work, we review the tools used for pre and postsurgical evaluation and their contribution to the understanding of language function, focusing on the Wada test and functional magnetic resonance imaging (fMRI). We also explore perspectives on future studies that may elucidate the role of the fMRI in epilepsy surgery.

P86
INTERHEMISPHERIC COHERENT ACTIVITY AFTER CALLOSOTOMY: CASE STUDIES

ONDARZA R,* RAMOS-LOYO J,** DEL RIO-PORTILLA Y, MARTINEZ-GUTIERREZ V,*** GUEVARA MA,** CORSI-CABRERA M******
** INSTITUTO NACIONAL DE NEUROLOGÍA Y NEUROCIRUGÍA MVS, MÉXICO.*
*** INSTITUTO DE NEUROCIENCIAS, UNIVERSIDAD DE GUADALAJARA, MÉXICO.*
**** LABORATORIO DE SUEÑO, FACULTAD DE PSICOLOGÍA, UNAM, MÉXICO.*

PURPOSE: Coherence of electrical activity between brain regions is involved in processing of information and in propagation of epileptic activity. Subcortical influences from the thalamo-cortical network as well as intra-cortical connections, especially the corpus callosum (CC) have been proposed as mechanisms mediating cortical coherent activity.
METHODS: Partial or total resection of CC is a surgical procedure used for the treatment of multifocal polypharmacological refractory epilepsy. This surgical procedure provides the opportunity to investigate the role of CC on interhemispheric coherent activity and clinical outcome. Electrical activity during sleep and wakefulness from 5 patients (3 with anterior and 2 with total callosotomy) was submitted to spectral and correlation analysis before and after surgery.
RESULTS: Inter-hemispheric correlation between homologous regions decreased after callosotomy depending on sectioned regions specially during slow wave sleep and less during rapid eye movement sleep and wakefulness. The decreased in inter-hemispheric correlation was related to clinical improvement.
CONCLUSIONS: The corpus callosum plays an important role for coherent activity during slow wave sleep.
This study was partially financed by DGAPA-UNAM IN-IN214702-3

Monday 5th July 2004
15:00 – 16:00

P87
PROSPECTIVE RATING SYSTEM IN EPILEPSY SURGERY, OUTCOME AND POSTOPERATIVE RESULTS CORRELATION

ORTIZ S,* VILLALOBOS-NIETO R,* TORRES-CORZO JG,** RODRIGUEZ R,** GUZMAN F,* LOPEZ-AVILEZ A*
** INSTITUTO POTOSINO DE NEUROCIENCIAS, SAN LUIS POTOSÍ, MÉXICO.*
*** UNIVERSIDAD DE SAN LUIS POTOSÍ, FACULTY OF MEDICINE, SAN LUIS POTOSÍ, MÉXICO.*

PURPOSE: Epilepsy surgery (ES) is a very effective and accepted resource for the management of intractable seizures. Predictors of surgical success are based on candidate selection. The selection process takes into account many variables that are at times difficult to conjugate particularly in a non homogeneous population with varied pathology.
OBJECTIVE: To rate patients in an epilepsy surgery population using a prospective scale to correlate the success of the procedure with the presurgical rating.
METHODS: Sample included 50 patients 6 months to 42 years of age that underwent ES. Scale criteria were; 1) Age of onset: Less than 10 years old, 1 point; older than 10, 0 points. 2) Age at evaluation: Less than 21, 0 points; older than 21, 1 point. 3) Lesion: Present, 0 points; absent, 1 point. 4) Cognition: Normal or functional, 0 points; dysfunctional, 1 point. 5) Neurogenetic or multilesional syndrome: Present, 3 points; absent, 0 points. Follow up of at least 1 year post surgically.
RESULTS: Patients with a rate of 0-3 had surgical outcome Engel 1 and 2 in more than 80% compared to less than 25% of cases with scores of 4 or higher. This rating procedure suggests good candidacy for surgery with a score of less than 3; a score greater than 4 is predictive of a less favorable outcome or a palliative procedure ($p < 0.0001$).
CONCLUSIONS: The proposed rating scale predicts a certain surgical outcome with good correlation after epilepsy surgery; it is valuable for communication purposes and includes variables of importance in epileptology.

P88
COGNITIVE ANALYSIS BEFORE AND AFTER SURGERY IN SPANISH-SPEAKING TEMPORAL LOBE EPILEPSY PATIENTS

ODDO S,* SOLIS P,* CONSALVO D,* GIAGANTE B,* SILVA W,* D'ALESSIO L,* CENTURION E,* SEOANE E,* SAIDON P,* KOCHEN S****

** EPILEPSY CENTER. NEUROLOGY DIVISION, RAMOS MEJÍA HOSPITAL, ARGENTINA.*
*** CELLULAR BIOLOGY AND NEUROSCIENCE INSTITUTE "PROF. DR. EDUARDO DE ROBERTIS" MEDICINE FACULTY, BUENOS AIRES UNIVERSITY, ARGENTINA.*
**** CONSEJO DE INVESTIGACIONES CIENTÍFICAS Y TÉCNICAS (CONICET), ARGENTINA.*
***** CONSEJO DE ESTUDIOS FARMACOLÓGICOS Y BOTÁNICOS (CEFYBO), ARGENTINA.*

PURPOSE: The aim of this study is to analyze neuropsychological evaluation results in temporal lobe refractory epilepsy patients, before and after anterior temporal lobectomy.

METHODS: We selected 28 patients (p.) with refractory temporal lobe epilepsy and surgical candidates. All the patients were evaluated with a Neuropsychological Protocol that includes the assessment of intelligence, attention, handedness, verbal memory, visual memory, language and executive function. A z-score were applied to raw values for each patient. These results were compared with normal population. According to this, patients were classified as "normal" when tests results presented values above z-2. After surgery, a chi-square test was applied in order to analyzed both samples.

RESULTS: From the total population evaluated, 75% (21 p.) have memory deficits. Patients were divided in 2 groups for their analysis: Patients with left anterior temporal lobectomy (LATL) (n = 11) and patients with right anterior temporal lobectomy (RATL) (n = 17). After surgery, on LATL group, 2 p. presented with a significant decline while 3 p. improved on verbal memory. Two p. presented a significant decline on visual memory and 6 p. remained without changes. On RATL group, after surgery, 2 p. improved significantly their visual memory deficits, 2 p. presented no significant changes on visual memory, 2 p. have a significant verbal memory deficit and 9 p. were normal. Language and executive function were also evaluated.

CONCLUSIONS: On the studied patients the neuropsychological profile was characterized by material-specific (verbal/visual) memory deficits. After surgery we found a variable outcome with a better prognosis on RATL group as was described by other authors.

P89
SYSTEMATIC REVIEW OF THE LONG TERM OUTCOME IN EPILEPSY SURGERY

TELLEZ-ZENTENO JF,* WIEBE S,** DHAR R**

** NATIONAL INSTITUTE OF MEDICAL SCIENCES AND NUTRITION SALVADOR ZUBIRÁN. MEXICO CITY. ** LONDON HEALTH SCIENCES CENTER, UK.*

PURPOSE: To provide evidence-based estimates of long-term results of epilepsy surgery.

METHODS: Data Source. An expert in library resources and electronic data bases searched electronic sources such as Medline, Index Medicus, and Cochrane database. We also searched bibliographies or pertinent review and original articles, book chapters and expert consultation. Study selection. Two reviewers independently applied the following inclusion criteria: studies published since 1991 with > 20 patients undergoing resective or non-resective epilepsy surgery; outcomes reported after a mean/median of 5 years. We considered all outcomes in children and adults. Seizure freedom as defined by authors was used. Data extraction. Two investigators independently extracted data, with disagreements resolved through discussion.

RESULTS: Of 914 available articles, 103 potentially eligible were reviewed in full text. After that we selected 48 articles. Seizure freedom as defined by authors was used. Forty-seven studies fulfilled eligibility criteria. Twenty-six (55%) studies were in adults, 5 studies in children (11%), 16 studies in adults and children (34%). Forty-five studies were in resective surgery (96%) and 2 studies (4%) in non-resective surgery. Twenty-six (58%) studies of resective surgery involved the temporal lobe, 4 the frontal lobe (9%), two were on hemispherectomy (4%), one the occipital lobe (2%), and 12 studies involved several localizations (27%). In the studies with non-resective surgery one was in patients with multiple subpial transection (MST) and one with callosotomy. The percentage of long-term seizure free patients was 30% in the study on callosotomy and 10% in the study with MST. In resective surgery the response was the following; in studies with only temporal surgery the percentage of patients free of seizures have a median of 62 (range 26-83), in frontal surgery the median was 38 (33-54), in the study with occipital surgery the percentage was 46. Finally in the studies with mixed localizations the median was 58 (10-75).

CONCLUSIONS: There are few controlled studies, and few look specifically at prognostic variables. There is substantial variation in outcome definition and methodology among studies. However, after adjusting for sources of heterogeneity studies yield similar results. The long-term seizure free rate was high and sustained in most studies

(40 and 60%). It was better in studies of temporal lobe epilepsy as compared to those of frontal, occipital and combined resections. As expected, long term outcomes were better with resective than with non-resective surgery. Well designed, long-term controlled studies assessing prognostic variables are needed.

P90

TRANSOPERATIVE ELECTRO-CORTICAL STIMULATION IN PATIENTS WITH EXTRATEMPORAL EPILEPSY

AUSTRIA-VELÁZQUEZ JJ,* ALONSO-VANEGAS MA,* GIL-ORTIZ C**
** INSTITUTO NACIONAL DE NEUROLOGÍA Y NEUROCIRUGÍA, MEXICO CITY, MEXICO.*
*** HOSPITAL "20 DE NOVIEMBRE", MEXICO CITY, MEXICO.*

PURPOSE: Since the pioneer work of W. Penfield, cortical stimulation has been considered the gold standard for functional localization, despite emergence of new functional techniques (PET, SPECT, fMRI). This study was aimed at demonstrating the surgical safety and benefits of transoperative electro-cortical stimulation (TCS) for functional localization and guidance of resective epileptic procedures, and validating the use of a digital stimulation system developed at our Institution.

METHODS: Thirty extratemporal epileptic patients were operated from July 2001 to November 2003, 25 patients under general anesthesia without muscular relaxation, and 5 patients under local anesthesia. During each procedure we used Electrocorticography and TCS to define the epileptogenic areas and functional zones. The central commissure served as reference for stimulation of the precentral and poscentral cortex. The motor cortex and contiguous zones were mapped applying mono and bipolar stimuli of 3.5-7 volts intensity using an analogical system and the digital prototype to compare results.

RESULTS: The technique allowed identification of functional zones in every patient as well as successful resection of epileptogenic zones without additional neurological deficits. In 6 patients, the motor area was located outside the Penfield homunculus. Responses obtained with the digital and analogical models were basically similar, furthermore, the digital prototype offered the surgeon visual control of stimulation.

CONCLUSIONS: Transoperative cortical stimulation remains an essential tool to localize functional areas during open surgical procedures, especially when resections must be individually tailored. The digital system proved to be effective and safe for cortical stimulation, allowing for monopolar and bipolar stimulation, and visual control of voltage.

P91

EPILEPSY SURGERY, ASSESSMENT, PATHOLOGY AND POSTOPERATIVE OUTCOME VARIABILITY IN MEXICO

VILLALOBOS R,* GUZMÁN F,* TORRES JG,* RODRIGUEZ R**
** INSTITUTO POTOSINO DE NEUROCIENCIAS, SAN LUIS POTOSÍ, SLP, MÉXICO. ** UNIVERSITY OF SAN LUIS POTOSÍ, FACULTY OF MEDICINE.*

PURPOSE: Epilepsy surgery (ES) has become a widely accepted alternative in the treatment of refractory seizures. Statistics on epilepsy surgery in our population are scarce and limited to few centers in major cities.

OBJECTIVE: To determine in a regional epilepsy surgery center the clinical indications and patient approach, as well pathological and postoperative results of cases that underwent the procedure.

METHODS: Forty patients aged between 6 months and 42 years of age were operated for intractable seizures. Criteria for surgery were: 1) Medically refractory seizures and, 2) Surgically treatable epilepsy. Follow up period included at least 16 months postoperative.

RESULTS: The median age at surgery was 15 years. Procedures were mainly cortical resections. 90% of cases were operated based on video-EEG, cerebral MRI and digital reconstruction. Thirty-seven patients were operated in a one stage procedure, only 3 patients required subdural implantation. Four patients showed dual pathology, less than half of the pediatric cases had a malformation of cortical development. The majority of the adult cases underwent temporal lobe surgery, dysplastic lesions comprised only 8% of them. More than 85% of cases were classified as Engel 1 and 2 outcomes. When broken down into age group, 69% of the pediatric and 91% of the adults had Engel 1 and 2.

CONCLUSIONS: 1) Preoperative assessment can be done with a reduction of costly tests; 2) The majority of the procedures were done in one stage fashion and 3) Cortical dysplasias are less common in our pediatric cases.

P92

EPILEPSY SURGERY. PRELIMINARY STUDY

BENDER JE,* GARCIA I,* MORALES L,* BAEZ M,* LORIGADO L,* GARCÍA ME*
** INTERNATIONAL CENTER OF NEUROLOGICAL RESTORATION, CIUDAD LA HABANA, CUBA.*

PURPOSE: Epilepsy surgery dates back to more than two millenniums and the first intervention was cranial trepanation. This pathology occurs in 0.1% of the population as its initial medical treatment only achieves

control of seizures in a 50 to 80%. The remaining 20% is considered medically untreatable and surgically remediable. Our purpose is to show the results of surgical intervention in epilepsy refractory.

METHODS: Eight patients with refractory temporal lobe epilepsy, of 23 candidates for surgical intervention were operated in the second semester of the last year. The surgical technique used was the adjusted temporal lobectomy. Transoperatory Electrocorticography before and after resection was performed. A follow-up of the cases took place at one, three, six months and a year after resection.

RESULTS: 88% operated patients are free of seizures and only one has suffered an occasional seizure. The complications were as follows: three patients with hemosiderotic meningitis, one with a transitory dysfunction of the III cranial nerve; one a diminishing of the verbal memory whereas another patient presented an inadequate secretion of the antidiuretic hormone syndrome.

CONCLUSIONS: Resective surgery of temporal lobe is the technique that we had selected for the treatment of refractory temporal epilepsy and the patients had a satisfactory evolution.

P93
VAGUS NERVE STIMULATION IN PATIENTS WITH MEDICALLY REFRACTORY EPILEPSY

ALONSO-VANEGAS MA,* AUSTRIA VJ,* SANTIAGO E*
** INSTITUTO NACIONAL DE NEUROLOGÍA Y NEUROCIRUGÍA, MEXICO CITY, MEXICO.*

PURPOSE: Following the first implantation of the Vagus Nerve Stimulator in 1989, Vagal Nerve Stimulation (VNS) has emerged as an accepted procedure for patients with intractable epilepsy who are not candidates for resective surgery. FDA approved VNS in 1997. In Mexico, the first stimulator was implanted at the "Fundación Médica Sur" on August 15, 2001. This study was aimed at assessing surgical risks and benefits of VNS in our population.

METHODS: During a 19 months period we performed 20 implants of the Neurocybernetic prosthesis (NCP) for VNS in 20 adult patients. Patients were subjected to standard presurgical evaluation (MRI, CT, fMRI, EEG, Video EEG, Polysomnography, Neuropsychological test, spectroscopy MRI). Procedures were done under general anesthesia and the NCP was connected to the left cervical vagus nerve. After fifteen days, the NCP was programmed to start stimulation, and patients were followed up regularly. Seizure characteristics and frequency, on-demand use of magnet, and impressions of patient and/or family on improvement and quality of life were recorded.

RESULTS: All operations were successful; common adverse effects included transitory cough and voice changes. Temporal paralysis of vocal cords occurred in 6.6% of patients. At 12 months follow-up, the mean reduction in seizure frequency was 50%, rising to 70% at 15 months. The mean reduction in seizure intensity was 64%. Improvements in mood, memory, and alertness were observed in most patients.

CONCLUSIONS: VNS is a safe, feasible, and potentially effective method to reduce seizure frequency and intensity, and hence improve quality of life in selected refractory epilepsy patients.

P94
CEREBRAL MAPPING BY BRAIN STIMULATION AND ELECTROCORTICOGRAPHY IN PATIENTS WITH REFRACTORY PARTIAL EPILEPSY

RUIZ M,* CASTILLO-MONTOYA CR,**
ALONSO-VANEGAS MA,* BRUST-MASCHER E**
** INSTITUTO NACIONAL DE NEUROLOGÍA Y NEUROCIRUGÍA, MEXICO CITY, MEXICO.*
*** HOSPITAL MÉDICA SUR, MEXICO CITY, MEXICO.*

PURPOSE: After the pioneer work of Hans Berger on the electroencephalogram (EEG), Foerster and Altenburger introduced the use of Electrocorticography (EcoG) in the operating room in 1935. The technique became a helpful tool in the surgical identification and precise localization of epileptogenic tissue to guide surgical resections. In the present study we aimed to use combined intraoperative EcoG and brain stimulation to precisely define the areas of mayor epileptogenicity in the cortical surface, amygdala and hippocampus, and carry out cerebral mapping of cortical eloquent areas: somatomotor area, areas of Broca and Wernicke.

METHODS: We studied 40 patients with partial epilepsy (frontal, temporal, parietal) properly diagnosed as refractory epilepsy, submitted to the standard international preoperative evaluation and subjected accordingly to a surgical procedure guided by intraoperative EcoG and cerebral mapping.

RESULTS: The technique allowed proper mapping of epileptogenic and slow activity, helping to define the epileptogenic zone to be resected as well as nearby eloquent areas. We were also able to gather data on the cortical localization of motor, sensitive and speech functions. The EcoG findings were correlated with the EEG and prolonged monitoring recordings.

CONCLUSIONS: ECoG is an indispensable tool during surgical procedures for epilepsy whenever the intervention must be individually tailored, considering that in many cases the exact localization and extent of the epileptogenic area can not be precisely defined preoperatively. Cortical brain stimulation is essential to map and determine the spatial relationship between epileptogenic and eloquent areas of the brain to avoid postsurgical neurological deficits.

P95
MAGNETIC RESONANCE HIPPOCAMPAL VOLUMETRY AND ELECTRICAL SOURCE ANALYSIS IN PATIENT WITH TEMPORAL LOBE EPILEPSY

SANTIAGO-RODRÍGUEZ E,* HARMONY T,* FERNÁNDEZ-BOUZAS A,* MARTÍNEZ M,** HERNÁNDEZ A, FERNÁNDEZ T****
** INSTITUTO DE NEUROBIOLOGÍA, UNAM, MÉXICO.*
*** FUNDACIÓN CLÍNICA MÉDICA SUR, MÉXICO.*
**** HOSPITAL GENERAL DE QUERÉTARO, MÉXICO.*

PURPOSE: Correlation between the hippocampal volume and the electric source analysis in patients with temporal lobe epilepsy.

METHODS: We studied 40 patients, 20 with temporal lobe epilepsy and 20 in control group of patients with generalized epilepsy. All patients had paroxysmal activity in electroencephalogram (EEG). Variable resolution electromagnetic tomography (VARETA) was used for obtaining the current sources of the paroxysmal activity. The Magnetic Resonance (MR) volumetry was obtained with manual segmentation and volume calculated both two authors. The Med-X software was used.

RESULTS: The mean right hippocampal volume was of 2,999.15 mm^2 and left 3,094.5 mm^2. The mean volume of atrophic hippocampus was of 2,792.05 ± 358.98 mm^2 and mean volume of normal hippocampus was of 3,301.6 ± 461.88 mm^2. The mean difference between sides was of 509 ± 270 mm^2. In the control group with generalized epilepsy the mean of small hippocampal volume was of 3,025 ± 313 mm^2 and the mean of large hippocampus was of 3,320 ± 322 mm^2. The mean of differences in volume was of 303.85 ± 220.27 mm^2. The comparison between the volume of temporal lobe and generalized epilepsy group had a $p = 0.0022$. We do not found correlation between the time of evolution and frequency of seizure with hippocampal atrophy. The Pearson correlation was 0.10 and 0.05 respectively.

CONCLUSIONS: Patients with temporal lobe epilepsy have a superior degree of hippocampal volume loss when are compared with patients with generalized epilepsy. The concordance between the hippocampal atrophy and electrical sources was of 75%.

P96
DIAGNOSTIC VALUE OF FUNCTIONAL MAGNETIC RESONANCE IMAGING IN LESIONAL REFRACTORY EPILEPSY

SALGADO P,* GAVITO HJ,* NAVA DE,* ALONSO-VANEGAS MA,* SÁNCHEZ CJ,* HERNÁNDEZ TA,* BARRIOS F,* RODRIGUEZ CJ*
** NATIONAL INSTITUTE OF NEUROLOGY AND NEUROSURGERY, MEXICO CITY, MEXICO.*

PURPOSE: Recent advances in neuroimaging, particularly magnetic resonance imaging, have revolutionized the diagnostic work-up and evaluation of epilepsy patients, especially patients with refractory epilepsy considered for surgical treatment. Functional magnetic resonance imaging (fMRI) allows visualization of structural and functional changes previously identified only through anatomo-pathological studies. This study was aimed at describing the application of different techniques of functional magnetic resonance imaging in the diagnostic work-up of surgical candidates with refractory epilepsy.

METHODS: The newly acquired 3.0 tesla MRI at the National Institute of Neurology and Neurosurgery was used to perform fMRI studies. We designed special algorithms, tasks and sequences as well as specific planes in 20 patients with intractable epilepsy, subjected to presurgical evaluation according to protocols recommended by the International League Against Epilepsy.

RESULTS: fMRI studies were carried out uneventfully and without added discomfort to the patient. The somato-motor and language areas were determined with the paradigms used in every patient and used to discern between functional tissue and epileptogenic lesions.

CONCLUSIONS: fMRI plays a fundamental role in the presurgical evaluation and surgical planning of epilepsy procedures, since it allows for non-invasive identification of eloquent areas, helping to reduce surgical risks. Along with other tools for identification of epileptogenic and eloquent areas, it will help improve the safety of epilepsy surgery and the benefits offered to refractory epilepsy patients. These results are currently being validated by comparison to intraoperatively obtained results with electrical stimulation as the gold standard for cortical localization.

P97
LOCALIZATION OF INTERICTAL EPILEPTIC SOURCE IN PATIENTS WITH BRAIN CORTICAL DYSGENESIS (CD) USING LOW RESOLUTION ELECTROMAGNETIC TOMOGRAPHY (LORETA)

ALVARDO NW,* RONDÓN J,* COUTIN P*
** UNIDAD DE NEUROLOGÍA, FUNDANEURO, HOSPITAL CENTRAL "MNT" MATURÍN, VENEZUELA.*

PURPOSE: CD are heterogeneous group of brain structural lesions, yield from neural process disturbance, associate to refractory epilepsy. On purpose of the controversies in cost and effective diagnostic test to epileptogenic source delimitation, we propose LORETA in concordance to magnetic resonance imaging (MRI) for localizing the interictal epileptic activity source (IEAS) associate to CD.
METHODS: We describe and compare LORETA with MRI in 12 patients and 2 controls, in this double binding and original study.
RESULTS: LORETA coincided 70% with epileptic syndrome and 100% with al least one CD by patient, in important agreement (Kappa = 0.625), so much better to electroencephalograms (EEG) (Kappa = 0.063). On brain topography LORETA coincided 67% with left frontal CD, but no 50% in other localizations. Occipital findings (60%) in LORETA no correspond to any lesions in MRI. Seven patients had more sprouting of IEAS that CD: 3 contralateral, 3 ipsilateral and 1 bilateral. LORETA to be coincided more than 60% with focal cortical dysplasia type II, lissencephaly, polymicrogyria, pachygyria and cortical dimple. LORETA no coincided more than 58% with cortical atrophy, heterotopias and focal cortical dysplasia type I. Also we find IEAS in Cingulo gira, predominantly more refractory epilepsy.
CONCLUSIONS: LORETA may be useful test to study IEAS in epileptic patients with CD, mainly in frontal lesions. LORETA may help to neuroimaging and genetic evaluation, and even epilepsy surgery in some patients, specially with "Kindling" sprouting. Then contributes to increase quality of life, and decrease cost to illness and mortality.

P98
APOPTOTIC AND BIOCHEMICAL PARAMETERS IN TEMPORAL LOBECTOMISED PATIENTS

LORIGADOS L,* MORALES L,* OROZCO S,** NERY L, GARCIA I,* ESTUPIÑAN B,* PAULA B,**** ROCHA LL******
** CENTRO INTERNACIONAL DE RESTAURACIÓN NEUROLÓGICA, C. DE LA HABANA, CUBA.*
*** CENTRO MÉDICO HOSPITAL "SIGLO XXI", MÉXICO, D.F., MÉXICO.*
**** CINVESTAV SEDE SUR, MÉXICO D.F., MÉXICO.*
***** HOSPITAL CARLOS J. FINLAY, C. DE LA HABANA, CUBA.*

PURPOSE: Temporal lobe epilepsy (TLE) is one of the most frequent types of human focal epilepsy. The main goal of the present work was to examine some biochemical markers in cerebrospinal fluid (CSF) and tissue from 8 lobectomized patients (TLE) and to determine the contribution of apoptotic mechanism to epileptic process in these patients.
METHODS: Patients and **METHODS:** levels of amino acids were measured by HPLC method in tissue and CSF. We studied the evolutive levels of amino acids in CSF; the samples were taken before and after (1 and 6 months) surgical treatment. The CSF control group (n = 10) was obtained from surgical patients who did not present neurological diseases and the tissue control group (n = 4) was obtained from non-neurological death patients. The immunohistochemical evaluation was carried up using the following cellular markers: enolase, Neun, GABA and GAD 67/65. The apoptosis study was realized for the occurrence of terminal deoxynucleotidyl transferase-mediated UTP nick end labeling (TUNEL) and Anexin-V markers. The final evaluation of cerebral tissue was done by confocal microscopy.
RESULTS: The results showed an increased levels of glutamate in cerebral tissue. There are significant decreases of glutamate level between pre-treatment and before (6 months) treatment. Numerous TUNEL-positive cells were observed whereas Anexin V-positive cells were not significant. We found a decrease of enolase, Neun, GABA and GAD 67/65 positive cells.
CONCLUSIONS: The results evidence there are death but not only by apoptotic phenomena but also by necrosis. The surgery process can restore the aminoacids levels.

P99

A STUDY OF THE DEATH CAUSES ON EPILEPTIC PATIENTS WHO DIED ON THE PSYCHIATRIC HOSPITAL OF HAVANA FROM OCTOBER OF 1970 TO DECEMBER FROM 2003

RODRIGUEZ-CRUZ JC,* BARRIOS-GRILLO E,* GONZALEZ-PAL S*
** HOSPITAL PSIQUIÁTRICO DE LA HABANA, CUBA.*

PURPOSE: To make an estimation of the death causes on the epileptic patients who suffer of psychiatric disorders and compare this with the principal causes of death on schizophrenic patients.

METHODS: It was done an analysis of the total among of 268 necropsies from the epileptic patients, deceased between October, 1970 an December, 2003, searching for the five principal death causes, the average age when they died, and also the individual characterizes of each group and the correspondence with a group of patients who suffer from schizophrenia.

RESULTS: The average age of death was 51.83 years, which is less than the average age of death in the general population. Of the total of 268 necropsies made on the epileptic patients, is interesting that 24 of them died of unexplained death and the average age of death was over the 43.33 years; 33 of them died from accidents during the course of a seizure with an age average of 47.61 years. The principal cause of death was the respiratory cause with 97 patients, followed by the cardiovascular cause with 94 patients. On the schizophrenic patients the first cause of death were the cardiovascular diseases a 33.58% and the second cause were the respiratory diseases with a 29.5%.

CONCLUSIONS: The life expectative on the epileptic patients is 20 years less that in the normal average population of the country. The principal causes of death were the respiratory illness, followed by the cardiovascular cause, in contras with the schizophrenic patients.

P100

THE USE OF THE WAIS TEST TO EVALUATE THE COGNITIVE DETERIORATION IN THE EPILEPSY. STUDY REALIZED DURING 2003 IN THE PSYCHIATRIC HOSPITAL OF HAVANA

QUINTANA MENDOZA JD,* GONZÁLEZ PAL S*
** PSYCHIATRICAL HOSPITAL FROM HAVANA, CUBA.*

PURPOSE: To know if there is a cognitive deterioration in a group of subjects who suffer epilepsy and verify the effectiveness of the Wechsler Intelligence Scale in the studied group.

METHODS: We used in this study the "Deterioration Index" proposed by Wechsler in his test. We did the test in an experimental group compound of ninety-seven (97) patients diagnosed of epilepsy and a control group of ninety-four (94) normal subjects. Both groups were compared applying Chi test.

RESULTS: The 82% of the epilepsy group present some grades of cognitive deteriorate. The 35% of the control group presents some grade of cognitive deterioration. Different between those groups was significant. $\chi^2 = 50.68$, $p < 0.001$.

CONCLUSIONS: We obtained evidence of possible cognitive deterioration in the group of patients with epilepsy.

P101

LONG TERM OUTCOME IN JUVENILE MYOCLONIC EPILEPSY AND SUBSYNDROMES

MARTINEZ-JUAREZ IE,* ALONSO ME,** MEDINA MT, DURON RM,* PEREZ-GOSIENGFIAO KT,* CORDOVA S,** OCHOA A,** LOPEZ-RUIZ M,**** RAMOS-RAMIREZ R,**** BAILEY JN,* DRAVET C,***** DELGADO-ESCUETA AV****
** COMPREHENSIVE EPILEPSY PROGRAM, UCLA SCHOOL OF MEDICINE AND VA GLAVA-WEST LOS ANGELES EPILEPSY CENTER OF EXCELLENCE, LOS ANGELES, USA. ** NATIONAL INSTITUTE OF NEUROLOGY AND NEUROSURGERY, MEXICO CITY, MEXICO. *** NATIONAL AUTONOMOUS UNIVERSITY OF HONDURAS, TEGUCIGALPA, HONDURAS. **** GENERAL HOSPITAL, MEXICO CITY, MEXICO. ***** CENTRE SAINT-PAUL- HÔPITAL HENRI GASTAUT, MARSEILLE, FRANCE.*

PURPOSE: Although recognized as a common form of epilepsy, the long-term prognosis and treatment of juvenile myoclonic epilepsy (JME) has not been studied. **PURPOSE:** To describe the 10-20 years clinical course of JME.

METHODS: JME patients were prospectively followed for a mean period of 11 years (range 1-47). Outcome was assessed dividing JME in four subsyndromes.

RESULTS: Patients were divided into: a) Classic JME (73%), b) Childhood absence epilepsy evolving to JME or CAE/ JME (16%), c) JME with adolescent onset pyknoleptic

absences and myoclonia or JME/PA (8%), d) JME with myoclonic astatic seizures or JME/MA (3%). Among 161 classic JME patients, 85% had grand mal seizures controlled with antiepileptic drugs, but myoclonic or tonic-clonic or absence seizures persisted in 27.5%. Considering CAE/JME, 74% (26/35) had tonic-clonic seizures controlled with antiepileptic drugs, absence persisted in 46%. Myoclonias were rarely persistent. In eighteen with JME/PA, 17 had tonic-clonic seizures controlled, but myoclonic and absence seizures persisted in 5. All JME patients with myoclonic astatic seizures were free of tonic-clonic seizures except for one with persistent myoclonic astatic seizures. Valproate monotherapy and polytherapy was the most frequent drug taken by patients with controlled seizures in all subsyndromes.

CONCLUSIONS: 1. JME subsyndromes affect patients until their third and fourth decade of life, proving JME is a life-long epilepsy syndrome. Relapses usually occur due to sleep deprivation, fatigue, alcohol or stress. 2. Myoclonic and tonic-clonic seizures persist in drug resistant classic JME. Absences most commonly persist in CAE/JME, supporting the concept of a subsyndrome different from classic JME.

P102

EPILEPTIC PATIENTS - CHANGES IN COGNITION AFTER SURGERY TREATMENT

GARCIA ME,* MORALES L,* GARCIA I,* BENDER J,* SALAZAR S,* SARDUY I*
** CENTER INTERNATIONAL OF NEUROLOGICAL RESTORATION, CITY OF HAVANA, CUBA.*

PURPOSE: The objective of the present paper is to show the neuropsychological evolution related with the general cognition in a sample of seven patients with temporal epileptic after twelve months from surgery.

METHODS: We did a prospective study and evaluated the patients presurgery and twelve months after with WAIS test.

RESULTS: The general conditions show a tendency to increase the performance (Full scale IQ) twelve months after surgery in both scales (verbal and performance) no matter the surgery side. One patient who continued with seizures showed performance decrease.

CONCLUSIONS: The evolutive assessment of cognitive functions is an important component of the neurospsychological evaluation, and allows us to assess the surgery effects in these patients.

P103

SEIZURE AND QUALITY OF LIFE OUTCOME AFTER CALLOSOTOMY FOR LENNOX-GASTAUT SYNDROME IN A BRAZILIAN CENTRE

GERMINIANI FMB,* CRIPPA AC,* DIAMANTOPOULOS M,* CORAL P,* MORO M,* DE ARAÚJO JC,* MÄDER MJ,* HÖPKER CD,* SCOLA RH,* SILVADO CES,* DE PAOLA L,* WERNECK LC*
** HOSPITAL DE CLÍNICAS - UFPR, BRASIL.*

PURPOSE: Lennox-Gastaut Syndrome (LG) is a severe form of epilepsy in which drop-attacks are the most hazardous type of seizure. Callosotomy has been advocated as a palliative treatment option in order to reduce the severity of such seizures. We studied the clinical outcome and quality of life of LG patients undergoing callosotomy.

METHODS: From September 1995 and May 2003, 23 patients with LG underwent callosotomy and of those 13 were further studied. All of them had multiple types of seizures that were refractory to medical treatment, with drop-attacks as the most severe type and were followed for at least 1 year after surgery. Demographic data, etiology, neuroimaging, VEEG, medical treatment, seizure type and family satisfaction after surgery were evaluated.

RESULTS: 86% were male, onset of seizures was in infancy in the majority of patients, all had cognitive impairment, 5 patients had an unknown etiology. All were dependent on their caregivers for daily activities, such as feeding, taking their medications and walking. Drop-attacks were the most severe and disabling seizures. Interictal EEG had typical LG features and ictal VEEG had diffuse electrodecremental and generalized run of rapid spikes or generalized slow spike-and-wave. Seizure frequency reduction was > 50% in 8 (61.5%), < 50% in 3 (23%) and without significant changes in 2 (15.3%). Quality of life in the opinion of caregivers was better in 11 (84.6%), and 10 (76.3%) patients had a fewer behavioural disorders.

CONCLUSIONS: In our series, callosotomy reduced seizure frequency in the majority of patients and led to a better behavioural outcome.

P104
A STUDY ABOUT A SPECIAL CONSULTATION MODEL (HEALTH CREATOR), IN DIFFERENT SPECIALIST CENTERS OF THE ATTENTION TO EPILEPTIC PATIENTS IN HAVANA CITY, DURING 2003

FABELO ROCHE R,** GONZÁLEZ PAL S*
** HOSPITAL PSIQUIÁTRICO DE LA HABANA, CUBA. ** FACULTAD DOCENTE "CALIXTO GARCÍA", CUBA.*

PURPOSE: There are psychological disorders which are responsible of seizure frequency increase. Limitations on the traditional clinical treatment are lead to a poor development on the self-esteem, self confidence, and a significant trend to depression and anxiety. The objective of this paper is to compare the effectiveness of clinical care plans and health creator plans on epileptic patients.
METHODS: Results are compared regarding to Psychological Welfare on patients with epilepsy submitted to different care plans (clinical and health creator ones) by means of tool application aimed to evaluate Psychological Welfare (CAVIAR). A group of 70 patients with epilepsy from secondary care services in Havana City is studied. Fifty percent of them are from an institution where an essentially clinical care attention is followed, and the remaining are from the Specialized Treatment Department (STD) of the Psychiatric Hospital of Havana. The information was based on the CAVIAR questionnaire containing two parts: 1) satisfaction scales, 2) affection scales. The Mann-Whitney U test for no-parametric independent simple samples was used allowing us to establish the reliability of the data obtained by Pearson test.
RESULTS: The estimated psychological welfare starting from satisfaction and affection levels in each studies group sample shows significant statistical differences ($p < 0.01$). The general average obtained by the "health creator" group was a mean of 43.5 while the clinical group was increased hardly to 22.5.
CONCLUSIONS: After one year of a systematic work, it was proved that the application of the health creator plan, fulfilled creator levels of these patients welfare.

P105
AN INTERVENTION FOR UNDERSTANDING THE CONCEPT OF STIGMA IN ADOLESCENTS WITH EPILEPSY

DORETTO F,* PEDROSO DE SOUZA EA*
** UNIVERSIDADE FEDERAL DE CAMPINAS, BRASIL.*

PURPOSE: To understand how adolescents with epilepsy experience stigma.
METHODS: The questionnaire used in this study was elaborated and statistically analyzed. Thirty-five 11-19 years old adolescents diagnosed of epilepsy over two years were evaluated and didn't have any psychiatric disorders or evident mental disease.
RESULTS: Low scores were identified in social aspects (45.19%), emotional (55.71%) and self esteem (56.94).
CONCLUSIONS: It is well known the relationship between stigma with social and emotional aspects and self esteem. In the social aspects are involved some questions about stigma, but we perceived that is necessary to apply programs of intervention to describe details about stigma feeling. Stigma appears to be a complex concept that is perhaps not easily measured by direct questions and instruments. Adolescents rarely talk to others about their epilepsy. We are proposing wokshops of adolescents, where they should feel more open to give some facts or information about stigma in adolescence.

P106
ANALYSIS MULTICAUSAL VARIABLES OF DEPRESSION ON EPILEPTIC PATIENTS. A STUDY CARRIED OUT AT A SPECIALIZED TREATMENT DEPARTMENT

VIDAL-PALMER LE,* GONZÁLEZ PAL S,* QUINTANA-MENDOZA JD,* FABELO-ROCHE RJ**
** HOSPITAL PSIQUIÁTRICO DE LA HABANA, CUBA. ** FACULTAD "CALIXTO GARCÍA", CUBA.*

PURPOSE: Some multiethiological variables that are present in epileptic patients were studied and how they may be cause of depression. The variable studied were depression family backgrounds, epilepsy family backgrounds, brain injury backgrounds, time of evolution of the seizures (> 15 years), high frequency of seizures (> 1 month), type of Epilepsy, more than one type of seizures, use of more than one type of antiepileptic drugs (AED) and the presence of cephalalgia
METHODS: A total of 100 epileptic patients who were attended between January 2002 and December 2003 were studied using the Beck inventory for depression. A group of

8 variables were developed and they were divided into two subgroups (the positive and the negative subgroups), and in each subgroup those suffering from depression and those without depression were separated. Chi square statistical method was used.

RESULTS: A 38% of patients referred high frequency of seizures (more than one in a month) and 50% of them had depression, while from the patients referring a frequency lower tan one in a month, only 22,68% suffered from depression (χ^2 = 1.684 E-3; D.F. = 1). 34% of epileptic patients also complained of cephalalgia; from this group, 47% suffered from depression, while 21.21% of the remaining (without suffering from cephalalgia) suffered from depression (χ^2 = 1.544 E -03; D.F. = 1).

CONCLUSIONS: Significant differences were found only in the patients with more than one seizure in a moth and in those suffering from cephalalgia associated to epilepsy. However, non significant differences were found.

P107
PATIENTS' EXPECTATIONS FOR EPILEPSY SURGERY - PRELIMINARY RESULTS

SALGADO PCB,* FERNANDES PT,* CENDES F*
** STATE UNIVERSITY OF CAMPINAS (UNICAMP), BRAZIL.*

PURPOSE: This study addresses the importance of working with patients' perceptions, beliefs and understandings about the preoperative investigation, surgery and postoperative follow-up, so it is possible to foresee the presence of any psychosocial difficulty and prevent them before their occurrence.

METHODS: Forty-five adult patients with refractory epilepsy were evaluated at the outpatient epilepsy clinic at the University Hospital of Campinas (UNICAMP). A structured questionnaire was applied for each patient individually. This instrument was elaborated by our group aiming to describe the range of expectations and understandings expressed by presurgical patients about the surgery process.

RESULTS: Thirty-three patients (73.3%) agreed that epilepsy affects their lives. The aspect that appeared to be the most affected by epilepsy was the emotional, followed by the social and physical aspects. On questions relating to what they believed to happen after surgery, most of them believed they would have a better job (75.5%), and would be less nervous and worried, feeling more independent and free (55.5%). Their expectations included: working and studying (60%), doing things that are not possible to be done with seizures (57.8%), driving (42.2%) and feelings of happiness and safety (40%).

CONCLUSIONS: There are many complex factors influencing the perception of surgical result, where pre-surgical expectations are part of this wild form of evaluating success and failure. For this, the study of pre-surgical expectations is an important base to the post-surgical results and should be part of the routine of all the surgical procedures.

P108
EVALUATION OF THE QUALITY OF LIFE IN EPILEPTIC PATIENTS THROUGH QOLIE-31 INVENTORY

JUAN ALVARO GF,* M LP*
** NEUROLOGICAL AND NEUROSURGERY INSTITUTE OF CUBA, CUBA.*

PURPOSE: To describe the results of the application of the QOLIE-31 Inventory and to determine the existence of possible relationships among demographic and clinical variables with the different tool areas.

METHODS: Sixty patients who attended the Epilepsy Service at the Neurological and Neurosurgery Institute were studied.

RESULTS: The mean showing the general index of the quality of life of patients was 67, 5, being the dominion "concern about crises" the one that got the lowest score. The existence of relations among several areas from the inventory and the variables age, sex, pathological antecedents, marital status, onset age, time of evaluation and frequency of crises was found. Among all the variables analyzed, the last one showed the greatest influence upon estimating the quality of life of patients.

CONCLUSIONS: The QOLIE-31 Inventory devised in 1991 to evaluate life quality in adult epileptic patients and designed by a multidisciplinary team integrated by different experts from several universities from the United States, has been validated in several languages and recently in Spanish.

P109
PERCEPTION OF EPILEPSY STIGMA IN THE COMMUNITY

FERNANDES PT,* SALGADO PCB,* DORETTO F,* NORONHA ALA,* LI LM*
** DEPARTMENT OF NEUROLOGY – STATE UNIVERSITY OF CAMPINAS (UNICAMP), BRAZIL.*

PURPOSE: To assess the perception of epilepsy stigma in the community of Campinas in two situations: from people with some familiarity with epilepsy and public in general.

METHODS: We interviewed people using a structured

questionnaire. The first situation was on the streets with 145 random people, and the second involved 85 people during a meeting of epilepsy. In this study, we focus on three questions that have the same construct: "What score would you rate for the prejudice that general population has towards: epilepsy, AIDS, and diabetes". The score ranges from 0 (no prejudice) to 10 (maximum prejudice) and was displayed in a format of a ruler.

RESULTS: On the streets, the subjects (75 women) had a mean age of 38 years old (13-80 years). The median (standard deviation) of prejudice score was seven (2.74) for epilepsy, nine (2.39) for AIDS and two (3.13) for diabetes. Non-parametric analysis showed difference within the groups (Friedman [2] = 151, $p < 0.001$, AIDS > epilepsy > diabetes). On the meeting of epilepsy, the subjects (50 women) had a mean age of 35 years old (12-66 years). The median (standard deviation) of prejudice score was seven (2.38) for epilepsy, nine (2.64) for AIDS and two (2.95) for diabetes. Non-parametric analysis showed difference within the groups (Friedman [2] = 54, $p < 0.001$, AIDS = epilepsy > diabetes).

CONCLUSIONS: The community showed that epilepsy is a stigmatizing condition, and the prejudice is high and close to AIDS. However, for people closed to epilepsy, the stigma is as high as AIDS suggesting that in great part the stigma of "social diseases" exists. Campaigns of destigmatization should include information on epilepsy to reduce the prejudice.

P110
ANXIETY AND QUALITY OF LIFE, IN AN EPILEPTIC PATIENT GROUP, FROM THE SPECIAL TREATMENT DEPARTMENTS, FROM 2001 TO 2003

GONZÁLEZ PAL S,* QUINTANA MENDOZA J,* FABELO ROCHE R,** GONZÁLEZ RODRÍGUEZ C,* RIVERO LA PUENTE L*

** PSYCHIATRICAL HOSPITAL FROM HAVANA, CUBA. ** FACULTAD DOCENTE "CALIXTO GARCÍA", CUBA.*

PURPOSE: The purpose is to know the anxiety level in epileptic patients and compare this level with the anxiety presented in a group of healthy patients and another of migraine sufferers. To identify the characteristics of the anxiety in each group and compare some of their neurobiological characteristic.

METHODS: It was performed a study using Hamilton test to specify anxiety on 100 patients with epileptic diagnosis; this study was compared with a similar group of patients with migraine. Anxiety was classified according to the results obtained from Hamilton test as: anxiety "0" or "1" (no anxiety or mild anxiety) both of them are considered as normal, pathological anxiety "2" or "3" (moderate or severe anxiety). Both groups were compared with a healthy group of subjects applying Chi squared test.

RESULTS: It was observed that 61% of the epileptic patients and 70% of the migraine patients didn't suffer anxiety or had non-pathological anxiety, while 39% of epileptic patients and 30% of patients with migraine suffered moderate and severe anxiety.

CONCLUSIONS: We considered that epileptic patients suffering moderate and severe anxiety constitute a high number and that anxiety interferes with their normal development and give rise to the precipitation of epileptic seizures. Finally we hallmark that affective disorders associated to both diseases (epilepsy and migraine) diminishes life quality of these patients.

P111
STUDENTS WITH EPILEPSY AND LEARNING DISORDERS: CLINICAL EDUCATIONAL SUPPORT PROGRAM

MESA MT,** CHARNEY J,* VEGA M,* ACEVEDO C, FOERSTER J,** DELGADO MI****

** CHILEAN LEAGUE AGAINST EPILEPSY, CHILE. ** CATHOLIC UNIVERSITY OF CHILE, CHILE. *** LOS ANDES UNIVERSITY OF CHILE, CHILE.*

PURPOSE: Data shows that 21%-69% of school children with epilepsy would present learning disorders. There are several causes: biological, maturity disorders and psychosocial aspects. The Chilean League Against Epilepsy (LICHE), since 1997 has implemented a program on clinical educational support for students with learning problems and epilepsy. Results are presented after 6 years of work.

METHODS: The students were admitted under three conditions: to present epilepsy, to have learning problems and to attend an ordinary elementary school. The program was scheduled one class hour, twice a week. The children's family was involved in it. Evaluations: Medical assessment in designed chart. Psychological: WISC–R tests (IQ) and Piers Harris test (self-esteem). Grafar scale: social assessment. Educational: specifically reading, writing and math calculus tests (pre- and post-intervention).

RESULTS: Thirty-seven patients were assessed. Age: 6-18 years old. (Mean: 8 years). Girls: 18/37. (49%) IQ score: Normal 28/37 (75%), Borderline 3/37 (8%), Light Mental Retardation 1/37 (3%) and without test 5/37 (14%). 19/37 below the average in self-esteem pretest (51%) and 15/37 in post-test (41%). Emotional disorders: 23/37 (62%). Pre- and post-treatment assess showed: reading comprehension 4/37: over the average in pre-test (11%) and in post-test 13/37 (35%). In logical-mathematical 1/

37: over the average on pre-test (3%) and 7/37 in post-test (19%).

CONCLUSIONS: Our experience shows an important need of a rehabilitation program in psychosocial and cognitive aspects in patients with epilepsy and learning disorders who attend to regular education. The children need intervention in learning field directly, the family environment and scholar system in general.

P112
NEUROPSYCHIATRIC DISORDERS AND QUALITY OF LIFE IN REFRACTORY EPILEPSY

ABREU ATC,* BENDER BBJ,* FRONTELA FHM,* GUERRA PMD,* PEREZ GPM*
** CIREN, LA HAVANA, CUBA.*

PURPOSE: Epilepsy has a prevalence between 8-17.5/1,000 population. During many years, epileptic attacks were considered as demonic possession. We show preliminary findings of neuropsychiatric disorders in the casuistic of Epilepsy Surgery Project at International Center of Neurological Restoration, Havana, Cuba.

METHODS: Our study included clinimetric battery that consists in psychiatric interview for patients and their parents, any member of the family or cohabits. HRDS scale (Hamilton rate depression scale), PDQ (personality test) and Quality of Life (MGH geriatric validated Cuban test) were applied.

RESULTS: Quality of life of patients was improved after surgical intervention.

CONCLUSIONS: The results are showed through graphic and tables.

P113
NURSE KNOWLEDGE OF EPILEPSY IN A BRAZILIAN UNIVERSITARY HOSPITAL

CRIPPA AC,* GERMINIANI FMB,* CORAL P,* ZANATTA A,* HÖPKER CD,* MÄDER MJ,* SILVADO CES,* DE PAOLA L,* WERNECK LC*
** HOSPITAL DE CLÍNICAS - UFPR, BRASIL.*

PURPOSE: The aim of our study was to evaluate the knowledge of epilepsy among the nurses working in different units of the Hospital de Clínicas da Universidade Federal do Paraná (Curitiba, Paraná, Brazil).

METHODS: We created a questionnaire to evaluate the knowledge of Epilepsy and taboos concerning the subject and submitted it to 100 nurses, randomly chosen among the 1,050 nurses working in our institution. The questionnaire was divided in two different sections: the first comprised demographic data and the second had 21 questions encompassing taboos and care of patients during a seizure.

RESULTS: One nurse refused to answer the questionnaire, 82 were female, with a mean age of 38.7 (21-60); 61% had previously known someone who had epilepsy, 70% (41) with patients. Only 27 had a specific training for providing care to epilepsy patients. Eighty-six reported that patients shouldn't be contained during a seizure, 92 (93%) believed that the patient could choke with his own tongue during a seizure, 52 believed that patients should stop taking their medication if they have alcoholic drinks. Many didn't know whether an epileptic patient could get pregnant (20%), take oral contraceptives (40%) or if a normal EEG ruled out the diagnosis of epilepsy (42%). In addition 75% believed that patients should only drive if they had their seizures under control.

CONCLUSIONS: In spite of frequent exposure to epileptic patients, the knowledge of the interviewed nurses concerning epilepsy and it's taboos is rather inaccurate. We believe that a dedicated programme to better inform nurses about the basics of epilepsy should be encouraged.

P114
THE EFFECT OF INFORMATION IN BELIEFS AND ATTITUDES ABOUT EPILEPSY IN A GROUP OF TEACHERS

ESPINOZA J*
** SERVICIO DE NEUROLOGÍA, HOSPITAL MARÍA AUXILIADORA. LIMA, PERÚ.*

PURPOSE: To know the effect of information in epilepsy in a group of teachers.

METHODS: in 1992 an anonymous and structured test was applied to a group of teachers at the south of Lima, aiming to know their attitudes, knowledge and beliefs about epilepsy. The survey was applied again in July 2002 which allowed us to assess the impact of information and orientation given.

RESULTS: In 1992 we found several wrong ideas and prejudices towards children with epilepsy; due to these findings an informative program was started, which is kept to date.

CONCLUSIONS: The most important finding was that prejudice and beliefs were kept unchanged and that most of the teachers knew what to do during a seizure.

P115
DIFFERENCES OF LEFT AND RIGHT TEMPORAL LOBECTOMY ON MOOD AND EMOTIONAL RECOGNITION ON EPILEPTIC PATIENTS

RAMOS-LOYO J,* SANZ-MARTIN A,* GUEVARA MA,* CORSI-CABRERA M,** ONDARZA R***
** INSTITUTO DE NEUROCIENCIAS, U. DE GUADALAJARA, JALISCO, MÉXICO.*
*** FACULTAD DE PSICOLOGÍA, UNAM, MÉXICO, D.F. MÉXICO.*
**** INSTITUTO NACIONAL DE NEUROLOGÍA Y NEUROCIRUGÍA MVS, MÉXICO, D.F.*

PURPOSE: The main purpose of this study was to determine the differential effects of left and right temporal lobectomy (TL) on mood and emotional processing.

METHODS: Five treatment refractory epileptics (2 with right and 3 with left temporal foci), were submitted to TL in order to reduce their seizures. They had a normal IQ and language comprehension and they were evaluated before and after three months of the surgery. Emotional recognition was evaluated by 4 odd-ball tasks: 1) letters, 2) identity of a woman face, 3) happy expression and 4) fear expression and; emotional face and prosodic recognition without limit of time. Furthermore, we examined the level of anxiety (IDARE), depression (Beck Scale) and general emotional state of the patients.

RESULTS: Results showed an overall improvement in mood scores after surgery with the exception of one of the right foci patients. Also, it was found that subjects after right TL had more mistakes in odd-ball tasks of identity, happy and fear, as well as in prosodic recognition, but not so in attention. In contrast, left TL patients did not present these performance deficits, by the contrary, some of them showed an improvement.

CONCLUSIONS: The emotional recognition deficits found in the right TL patients could be explained by the resection of areas related to emotional processing, such as temporal lobe and amygdala, while the left TL patients improvement could be an effect of the reduction of epileptic activity propagated from the left to the right hemisphere.

P116
VOLUNTARY ASSISTANCE IN THE FIGHT AGAINST EPILEPSY IN GUATEMALA

STOKES C*
** CENTRO NEUROFISIOLÓGICO, GUATEMALA.*

PURPOSE: In the fight against epilepsy the role of the physicians has to be complemented by a team in order to be effective. We consider a comprehensive approach and there are several factors that interact in our Guatemala Model. We consider the chain of events like a triangle: in one angle are the physicians and doctors, in the other the patients family, and in the third angle the environment either the work place, or school, or where the patient lives, and in the center the patient interacting with the people of the different angles.

METHODS: To get this paradigm to work we need to understand that the physician alone can not solve the problem.

We have implemented the concept and person called the voluntary assistant in the fight against epilepsy; this is a person that could be a physician, a lay person, a patient or a family of the patient that is trained to learn about epilepsy and its management and actively participate in the solution of the problem.

The voluntary assistant in epilepsy needs some type of medical facility, training on the understanding and recognition of the Epilepsies, knowledge about classification of epilepsy, understanding about antiepileptic drugs, surgery of epilepsy and other therapeutic options, understanding about the different seizure types, drug action, drug interactions, time of treatment, psychosocial aspects of epilepsy.

RESULTS: Personalized attention to patients, allows normal lives with their families, can provide special services to the patients, can attend in the homes and environments of the patients. The assistant could be a physician, a lay person, a patient or a family member, who could provide the neurologist with the description of the seizure when observed and help educate the patient and the family about facts in epilepsy.

CONCLUSIONS: The assistant is very important in the fight against epilepsy stigma. Guides the patient and family providing emotional support, and helps to overcome the burden of the disease.

Give information about the natural history of epilepsy, the effect of medications and the prognosis the syndrome could have. He is sympathetic with patient and family. As a result of his activities he saves a lot of time to the physician; alerts the patient about training and work possibilities and existing organizations; helps to create and maintain groups for self help, and community approaches; provides orientation about places of special attention; provides Information regarding the genealogic tree of patients with epilepsy; knows all the patients relatives because he/she works and lives in the same community; helps in future planning and reaching the main goal that is to help the patient and the family guiding them to achieve a satisfactory and productive life. In Guatemala, the assistant participates in the functioning of a union or cooperative where the

patient with a small investment gets low cost drugs and education.

P117
LONG-TERM OUTCOME IN A COHORT OF HONDURAN PATIENTS WITH EPILEPSY DUE TO NEUROCYSTICERCOSIS

DURÓN RM,* MEDINA MT,* OSORIO JR,** MARTINEZ L,** AGUILAR-ESTRADA R,* THOMPSON A,* DUBON S,* BARAHONA F,* BANEGAS L,** RAMIREZ F,** RIVERA M, ESTRADA AL*****
** NATIONAL AUTONOMOUS UNIVERSITY OF HONDURAS, TEGUCIGALPA, HONDURAS.*
*** SECRETARY OF HEALTH, HONDURAS.*
**** BUEN PASTOR CLINIC, SANTA MARÍA DEL REAL, OLANCHO, HONDURAS.*

PURPOSE: To determine the prognosis of epilepsy due to neurocysticercosis (NCC) in 33 patients diagnosed in 1997 during a population-based study in the Salamá County in Honduras (6,473 inhabitants).
METHODS: All patients had initially underwent clinical evaluation, video–EEG, brain tomography and serum electroimmunotransfer blot for cysticercosis previous informed consent [Medina et al, Epilepsia 1997; 38(Suppl. 7): 8]. Seventy five percent had inactive lesions (calcifications), 15% had both active and inactive lesions and 9% had active lesions only. At least one annual follow-up appointment was done after 1997.
RESULTS: By the five-year follow-up in February 2003, 25/33 patients remained in the community (76%), 6 had emigrated (18%) and 2 had died (6%). Average age at onset was 13 ± 9 years and age at last follow-up was 25 ± 16 years. Sixty three percent of patients entered in remission (no seizures in the last 5 years) and 23% persisted with at least 2-4 partial with/without secondary generalized seizures per year. These patients also complained of chronic headache and cognitive impairment. Only 32% of all the patients were currently taking antiepileptic drugs. Only 7 patients (21%) had received anticysticidal treatment in the past. Two were lost for follow-up, 4 had inactive epilepsy and were not taking treatment and 1 persisted having seizures. Patients who had persisting epilepsy most often were female, had abnormal neurological exam, frontal calcified lesions, family history of seizures, history of status epilepticus, and absence or non-compliance in antiepileptic treatment.
CONCLUSIONS: According to this study, prognosis of epilepsy due to NCC is variable, with remission in 63% of cases. It seems that major factors influencing persistence and refractoriness are gender, localization of lesions, history of status epilepticus and lack of adequate antiepileptic treatment. However, more studies are needed to evaluate better these variables.
Funding: Nutrition and Health Project of the Secretary of Health at Honduras, World Bank, Japanese International Cooperation Agency, Centro de Neurodiagnóstico.

Late received abstract

P118
MACROSTRUCTURAL ANALYSIS OF SLEEP IN PATIENTS WITH JUVENILE MYOCLONIC EPILEPSY BEFORE AND AFTER TREATMENT

LÓPEZ M,* SANTIAGO E,* RAMOS R,* MÉNDEZ A*
**HOSPITAL GENERAL DE MÉXICO, MÉXICO, D.F.*

PURPOSE: Juvenile Myoclonic Epilepsy (JME) is a primary idiopathic epilepsy that constitutes a 10% of all the epilepsies. A typical feature is its occurrence in close relationship with the cycle sleep-vigil, in the phases of bigger activation of the sleep and in the morning awakening. The objective is to know the alterations that the patients present with JME in the polysomnographic study, the quantity of paroxystic activity, to identify in what phase of the sleep the biggest quantity in epileptic activity is presented, as well as its duration and the modifications that exist once they are under clinical control with treatment.
METHODS: We carried out a descriptive, longitudinal and comparative study with a 8 hours polysomnographic registry without treatment (PSMI) during sleep and one hour after the morning awakening; later on, the patients began treatment with valproate of magnesium 15 - 30 mg/kg/day, with clinical improvement of the epilepsy and level blood between 50 and 100 µg/dL; afterwards the second polysomnographic study (PSMII) was carried out. We realized the analysis of the architecture of the sleep, type, occurrence and duration of paroxystic activity, comparing the PSM I with PSM II.
RESULTS: Eight patients, 5 men and 3 women, were studied, with ages between 11 and 28 years, with an average of a 19.3 years. In the PSMI the total time of sleep was of 6.42 h; index of efficiency of sleep was of 0.790 h; REM duration average 0.14 h; average of cycles REM 0.52 h; average of intervals REM 0.34 + 0.44h Percentage of duration of each one of the phases of the sleep: vigil 10.95%, phase I 17.59%, phase II 37.59%, phase III 7.31%; phase IV 5.52%, REM 11.01%. PSM II: total time of sleep 6.95 h; index of efficiency of the sleep 0.864 h; I REM average duration 0.17 h; the average REM cycles 0.39% h; average of REM intervals

0.28% h. duration; Percentage of each one of the phases of the sleep: vigil 13.52%; phase I 18.53% h; phase II 44.31% h; phase III 6.97% h; phase IV 2.93% h; REM 13.88% h. Awakening without treatment presented in number of 20 ± 4, after treatment were 15 ± 11; the difference among the awakenings before and after treatment was significant $p < 0.05$. The number of paroxysms without treatment was of 254 with median of 42.33 and with treatment were 117 with a median of 19.5. The frequency of the paroxysms without treatment was of 0.341 paroxysm/min versus 0.278 paroxysm/min. The paroxysms in the first hour after awakening in the morning without treatment was of 373, after treatment it diminished to 24, with statistical significance of $p < 0.05$. The frequency of the paroxysms in the first hour of awakening without treatment was of 0.66 per minute, after treatment of 1.035 per minute, without statistical significance ($p = 0.13$).

CONCLUSIONS: Patients with JME present a fragmented sleep, with multiple night awakenings; the efficiency of sleep is very diminished, the paroxystic activity is in great proportion in the phase II of sleep. Once the patient undergoes antiepileptic therapy, with effective clinical control and therapeutic blood level of the drug, the patients present significant improvement in the efficiency of the sleep, the fragmentation of sleep diminishes to parameters of normality, the paroxystic activity diminishes significantly and in the first hour of the morning awakening the presentation, frequency and duration of epileptic paroxysms diminish in very important form.

P119
CLINICAL CHARACTERISTICS OF PATIENTS WITH REFRACTORY EPILEPSY IN THE NATIONAL MEDICAL CENTER "20 DE NOVIEMBRE", MÉXICO, D.F.

COYAC P,* QUIÑONES S,* PLASCENCIA N,* NÚÑEZ L*
** CMN 20 DE NOVIEMBRE, ISSSTE, MEXICO CITY.*

PURPOSE: To identify the factors associated to refractory epilepsy in patients attended in the Epilepsy clinic of the National Medical Center "20 de Noviembre".

METHODS: Refractory epilepsy was defined as at least one epileptic seizure per month in the last three months. We reviewed the clinical records of all refractory epileptic patients attended in the Epilepsy Clinic of the Neurology Service in the National Medical Center "20 de Noviembre". The patients included were older than 16 years, with pharmacological treatment for at least 2 years, with failure in their control instead of being using the appropriate medication according to their type of seizures, in the recommended doses. Exclusion criteria were: suspicion of pseudoepileptic seizures before the realization of videomonitoring EEG or demonstrated after that study, lack of necessary information in medical records, lack of seizure recording and non-regular attendance to neurological consultation. The variables analyzed were: gender, age, age when epilepsy began, type of seizures, time of evolution, amount of seizures by month as well as the neurophysiological features, in EEG and neuroimaging, mono or polytherapy and outcome.

RESULTS: One hundred and thirty-five patients were included, 71 females and 64 males, the predominant type of seizures was partial secondarily generalized; patients with greater number of seizures required greater number of antiepileptics.

CONCLUSIONS: The number of seizures is directly proportional to the number of drugs used, in an unsuccessful attempt to reduce the number of seizures; in these patients the surgery is the next option.

P120
A NEW SCOPE IN EPILEPSY TREATMENT: NANOMEDICINE

LÓPEZ T,* ASCENCIO JA,** MANJARREZ J, VILLEDA J******
** UNIVERSIDAD AUTÓNOMA METROPOLITANA-IZTAPALAPA,*
*** INSTITUTO MEXICANO DEL PETRÓLEO.*
**** INSTITUTO NACIONAL DE NEUROLOGÍA Y NEUROCIRUGÍA MVS. MÉXICO D.F.*

PURPOSE: During the last decades the development of nanoscience and nanotechnology has opened the perspective to use the principles of these knowledge areas in medical solutions. The ability of manipulation of atomistic architecture allows generating molecular systems for specific problems in human health. One of the most important problems in epilepsy treatment is to find in the next years an optimum method for the administration of the anticonvulsant drugs. Actually these drugs have many side effects in the patients; because before the drugs reach the epileptogenic zone they affect multiple regions when they move in the systemic circulation, causing toxicity. A proposed viable alternative in order to deliver the drug without secondary effects is the use of reservoirs based in nanostructured materials with controlled porous size, crystalline and chemical affinity. The basis for this proposal is to consider that most of the drug has a similar chemical structure where the charge density distribution (positive and negative sites) induces weak interaction between the reservoir material and the medical molecular structure. The molecular systems of different antiepileptic drugs have

common electronic structure inducing relative equal behavior of delocalized charge in the rings, electronegative and electropositive zones localized around the nitrogen atom and the hydroxyl species respectively. This behavior and type of analysis involving atomic composition and electronic distribution is studied in this work focused to the new controlled deliver materials design.

METHODS: In our effort we are improving this kind of methods besides the experimental evaluation of these materials in Adult male Wistar rats weighing 180-250 g rats in which epilepsy was induced using the Kindling and penicillin methods. One 1 x 1.5 mm titania cylinder (1.1 mg weight) was surgically implanted in the epileptic rats, though a stainless-steel guide cannula (18-gauge) into the basolateral amygdala (BLA) (AP: -2.3, L: 4.8, V: 8.5).

RESULTS: The evaluation of biocompatibility and no dispersion of the sol-gel titania reservoir in the brain allowed to identify important parameters of high biocompatibility and no dispersion with the brain liquid. There is no evidence of neuronal deformation and the systemic reaction is quite low and almost imperceptible. The implanted rats were controlled of the epilepsy.

CONCLUSIONS: This method of drug delivery directly in the epileptogenic zone could be a useful method to use in humans with epilepsy.

P121

EVALUACIÓN NEUROFUNCIONAL EN PACIENTES CON EPILEPSIA DEL LÓBULO TEMPORAL CANDIDATOS A CIRUGÍA

MORALES CL*

** DEPARTAMENTO DE NEUROFISIOLOGÍA. CENTRO INTERNACIONAL DE RESTAURACIÓN NEUROLÓGICA. LA HABANA, CUBA.*

OBJETIVO: En el año 2001 se realizó el primer estudio controlado en pacientes con Epilepsia del Lóbulo Temporal (ELT), que demostró estadísticamente la superioridad del tratamiento quirúrgico, en relación con el medicamentoso, para los perfiles de evolución de las crisis y calidad de vida, aún así, se reporta un retraso de 15-20 años para la remisión de pacientes a los programas de cirugía. Se requiere entonces una optimización en la evaluación prequirúrgica que permita la correcta identificación de la zona epileptogénica, pues el fallo quirúrgico, debido a la resección incompleta o errónea de dicha zona representa la principal limitante para el desarrollo de esta modalidad terapéutica.

MÉTODO: El presente trabajo ha permitido introducir en el país una estrategia para la selección y evaluación preoperatoria de pacientes con ELT candidatos a cirugía resectiva no lesional. Se evaluaron los patrones electrográficos del inicio ictal en 667 crisis en 41 pacientes, obtenidos mediante monitoreo prolongado Vídeo EEG (V-EEG) con electrodos extracraneales.

RESULTADOS: La lateralización y localización de la frecuencia media dominante del patrón ictal (5.56 ± 1.31 Hz), durante el periodo de máximo poder espectral, permitió incrementar la identificación de pacientes con Epilepsia Temporal Medial (ETM); en tanto, los signos conductuales aisladamente no ofrecieron información de utilidad para realizar esta distinción. La utilización del método de Tomografía Eléctrica de Resolución Variable (VARETA del inglés) permitió determinar un generador de actividad epileptiforme ictal cuya localización coincidió con la zona epileptogénica en todos los pacientes con ELT sometidos a exitosa lobectomía temporal.

El análisis semicuantitativo de las imágenes de Tomografía por Emisión de Fotón Simple (SPECT) cerebral realizados en los estados interictal e ictal, así como, las relaciones metabólicas medidas por Espectroscopia de RMN (ERM), combinado con los hallazgos aportados por el monitoreo V-EEG permitieron localizar/lateralizar la zona epileptogénica en pacientes con ELT que presentaron RMN normales, o con evidencias de alteraciones morfológicas bilaterales.

En otro sentido, se demuestra la existencia de alteraciones en la inmunidad celular en pacientes con ELT las cuales comenzaron a desaparecer durante el primer año de evolución posquirúrgica. La cuantificación de aminoácidos en el tejido obtenido durante la lobectomía temporal estándar evidenció un incremento de los Aminoácidos Excitatorios (AAE) especialmente glutamato, en tanto, los estudios de Inmunohistoquímica (IHQ) realizados, avalan que además de los mecanismos de necrosis, la cascada clásica de apoptosis está involucrada en la pérdida neuronal asociada a la ELT.

CONCLUSIONES: La localización del inicio ictal registrado con electrodos extracraneales y su relación con otras modalidades imagenológicas funcionales, en la definición de la zona epileptogénica durante la evaluación prequirúrgica resulta una de las contribuciones más importante que desde el punto de vista clínico ofrece esta investigación. De igual forma, los resultados del estudio de marcadores biológicos en suero, LCR y tejido epileptogénico, representan sin dudas una contribución a la comprensión de la epileptogénesis del lóbulo temporal en humanos, lo cual resulta de novedad científica en la literatura internacional.

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PRUEBA SELECTIVA DEL DESARROLLO DE DENVER EN HIJOS DE MADRES CON EPILEPSIA EN TRATAMIENTO EN MONOTERAPIA CON LAMOTRIGINA DURANTE LA GESTACIÓN

SANTIAGO GOMEZ R,* DOMÍNGUEZ SALGADO M,* DÍAZ-OBREGÓN SANTOS MC,* ARRABAL MC, BATHAL H*
** UNIDAD DE EPILEPSIA, HOSPITAL CLÍNICO SAN CARLOS – MADRID. FUNDACIÓN EPILEPSIA ESPAÑA.*

INTRODUCCIÓN: No existen referencias en la literatura de series clínicas que valoren el desarrollo psicomotor de hijos de madres con epilepsia que hayan recibido tratamiento durante la gestación con los diversos fármacos antiepilépticos existentes.

MATERIAL Y MÉTODOS: Se estudiaron dos grupos de niños. El primero, de 64 niños, estaba constituido por hijos de madres con epilepsia parcial y parcial compleja, con o sin generalización secundaria, controladas durante la gestación en régimen de monoterapia con lamotrigina (LTG), no presentando crisis comiciales durante este periodo. El otro grupo, de 30 niños, eran hijos de madres que no tenían antecedentes personales de interés y que no habían recibido durante la gestación ningún tratamiento (salvo la profilaxis con ácido fólico). A todos se les aplico la prueba selectiva del desarrollo de Denver, con valoraciones en el 1er., 2do., 3ro., 6to. y 12vo. mes de vida.

RESULTADOS: Los resultados de las cuatro áreas valoradas (motora, motora fina adaptativa, personal-social y lenguaje), fueron similares en ambos grupos estudiados.

CONCLUSIONES: En la población estudiada, el tratamiento a las madres con LTG durante la gestación no modifica el desarrollo psicomotor de sus hijos, siendo este similar a la población control.

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VALORACIÓN NEUROPSICOLÓGICA SECUENCIAL DE PACIENTES EN MONOTERAPIA CON TOPIRAMATO COMO FÁRMACO ANTIEPILÉPTICO DE PRIMERA ELECCIÓN. REPORTE DE RESULTADOS A DOS AÑOS DE INICIADO TRATAMIENTO

DOMÍNGUEZ SALGADO M,* SANTIAGO GOMEZ R, * DÍAZ-OBREGÓN SANTOS MC,* BHATHAL GUEDE H*
UNIDAD DE EPILEPSIA, HOSPITAL CLÍNICO SAN CARLOS – MADRID.

OBJETIVOS: E*xisten discrepancias sobre el efecto de la epilepsia en la función cognitiva. Existen errores metodológicos en los estudios realizados (pacientes de diferentes edades, varios tipos de epilepsia, diversos factores de riesgo). Uno de los más importantes es el tratamiento antiepiléptico (FAE) recibido. No se conocen los efectos sobre la función cognitiva de los nuevos FAE, aunque se consideran menores. Presentamos los resultados de una valoración* neuropsicológica secuencial en pacientes controlados en monoterapia con topiramato (TPM).

MATERIAL Y MÉTODOS: Diecinueve pacientes diagnosticados de epilepsia parcial compleja con y sin generalización secundaria de reciente inicio. Se realizó una entrevista estructurada basal, a los 6, 12 y 24 meses de iniciado el tratamiento que incluía WAIS-R, Rivermead Behavioral Test (RVT) y QOLIE-10. Se valora también la frecuencia de la actividad bioeléctrica cerebral (ABC) de fondo.

RESULTADOS: La edad media es de 54 años (± 6.2). Dosis media de TPM a los 24 meses fue de 250 mg/24h (BID). Se produjo una mejoría significativa de la puntuación obtenida en el QOLIE, que se relacionó con el control de las crisis y la calidad de vida. No hubo diferencias significativas en las puntuaciones obtenidas en el WAIS-R (total como subescalas: orientación, información, comprensión, aritmética, razonamiento lógico, memoria, vocabulario, clave números, figuras y praxis) ni en el RVT. No se objetivaron variaciones en la frecuencia de la ABC de fondo.

CONCLUSIONES: el uso de topiramato en monoterapia en pacientes con epilepsia de reciente inicio no se relaciona con alteraciones en la función cognitiva.