Spanish Symposium
Alternative Approaches to Epilepsy Treatments

Symposium Co-Chairs:
Patricio Abad, M.D.

and

Mario Alonso-Vanegas, M.D.

Friday, December 5, 2014
Convention Center – Room 612, Level 6

3:30 – 6:00 pm
OVERVIEW
This symposium will present an overview on the role of neurostimulation, diet, vitamins and other supplements, herbal therapies, non-conventional medical treatments (acupuncture, cannabis, others), and psychological and Mind-body therapies (biofeedback, meditation, yoga, relaxation techniques) in the treatment of epilepsy. Treatment paradigms and evidence-based approach will be addressed. As a result of attending this symposium, the attendee will recognize alternative treatments when managing patients with medically refractory epilepsy and become familiar with current evidence and rationale for their use, allowing for consideration of neurostimulation and other available alternative treatment options.

LEARNING OBJECTIVES
- Utilize newer as well as established treatments such as neurostimulation, dietary therapy and other alternative methods as therapeutic options in refractory epilepsy
- Counsel families regarding neurostimulation and alternative therapies based on currently defined indications
- Treat patients with refractory epilepsy through use of alternative treatments not previously considered
- Recognize the value of treating refractory epilepsy through use of new techniques such as mind-body techniques and psychological therapy.

TARGET AUDIENCE
Basic: Those new to epilepsy treatment or whose background is limited, e.g., students, residents, general physicians, general neurologists and neurosurgeons, other professionals in epilepsy care, administrators.
Intermediate: Epilepsy fellows, epileptologists, epilepsy neurosurgeons, and other providers with experience in epilepsy care (e.g., advanced practice nurses, nurses, physician assistants), neuropsychologists, psychiatrists, basic and translational researchers.

PROGRAM
Chairs: Patricio Abad, M.D. and Mario A. Alonso-Vanegas, M.D.

3:30 – 3:40 p.m. Introduction
Patricio Abad, M.D.

3:40 – 4:10 p.m. Neurostimulation for Epilepsy
David King-Stephens, M.D.

4:10 – 4:40 p.m. Dietary Measures, Vitamins and Other Supplements, Herbal Therapies
Carlos Medina-Malo, M.D.

4:40 – 5:10 p.m. Non-conventional Medical Treatments, Mind-body Therapies
Blanca Vazquez, M.D.

5:10 – 5:50 p.m. Roundtable.
Mario A. Alonso-Vanegas, M.D. and Patricio Abad, M.D.

5:50 – 6:60 p.m. Conclusions
Mario A. Alonso-Vanegas, M.D.
ACCREDITATION
The American Epilepsy Society is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians.

CREDIT DESIGNATION
Physicians: The American Epilepsy Society designates this live activity for a maximum of 2.5 AMA PRA Category 1 Credits™. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

Physician Assistant: AAPA accepts certificates of participation for educational activities certified for AMA PRA Category 1 Credit™ from organizations accredited by ACCME or a recognized state medical society. Physician Assistants may receive a maximum of 2.5 hours of Category 1 credit for completing this program.

Nursing: Jointly provided by AKH Inc., Advancing Knowledge in Healthcare and American Epilepsy Society. AKH Inc., Advancing Knowledge in Healthcare is accredited as a provider of continuing nursing education by the American Nurses Credentialing Center’s Commission on Accreditation. This activity is awarded 2.5 contact hours.

This program was planned in accordance with AANP CE Standards and Policies and AANP Commercial Support Standards.

Pharmacists: Jointly provided by AKH Inc., Advancing Knowledge in Healthcare and American Epilepsy Society. AKH Inc., Advancing Knowledge in Healthcare is accredited by the Accreditation Council for Pharmacy Education as a provider of continuing pharmacy education. AKH Inc., Advancing Knowledge in Healthcare approves this knowledge-based activity for 2.5 contact hours (0.25 CEUs). UAN 0077-9999-14-030-L01-P. Initial Release Date: 12/5/2014.

Criteria for success: Credit is based on documented program attendance and online completion of a program evaluation / assessment. If you have any questions about this CE activity, please contact AKH Inc. at service@akhcme.com. No CE credit will be provided beyond January 15, 2015.

You may also access the AES virtual ToteBag for more detailed instructions and to complete the CE Statement of Credit Request Form.

International Credits: The American Medical Association has determined that non-U.S. licensed physicians who participate in this CME activity are eligible for AMA PRA Category 1 Credits™.

ABPN Core Competencies
The American Board of Psychiatry and Neurology has reviewed the Spanish Symposium and has approved this program as part of a comprehensive lifelong learning program, which is mandated by the ABMS as a necessary component of maintenance of certification.

Core Competencies: Patient Care, Medical Knowledge, Practice-based Learning and System-based Practice

FACULTY/PLANNER DISCLOSURES
It is the policy of the AES to make disclosures of financial relationships of faculty, planners and staff involved in the development of educational content transparent to learners. All faculty participating in continuing medical education activities are expected to disclose to the program audience (1) any real or apparent conflict(s) of interest related to the content of their presentation and (2) discussions of
unlabeled or unapproved uses of drugs or medical devices. AES carefully reviews reported conflicts of interest (COI) and resolves those conflicts by having an independent reviewer from the Council on Education validate the content of all presentations for fair balance, scientific objectivity, and the absence of commercial bias. The American Epilepsy Society adheres to the ACCME’s Essential Areas and Elements regarding industry support of continuing medical education; disclosure by faculty of commercial relationships, if any, and discussions of unlabeled or unapproved uses will be made.

**FACULTY / PLANNER BIO AND DISCLOSURES**

**Patricio Abad, M.D.**
Patricio Abad Herrera, M.D. Ecuadorian Physician. Neurologists graduated at the UNAM (México) Post-Doctoral Fellowship at UCLA (California, USA). Currently Head of Neurology Service and Director of the Epilepsy Center at the Metropolitano Hospital. Quito Ecuador. Professor of Neurology PUCE (Pontificia Universidad Católica del Ecuador). Chairman Spanish Symposia (AES). Member of the Latin American Epilepsy Commission (ILAE) Head of the Research and Publications Task-Force.

Dr. Abad discloses receiving support as Salary from Commercial Sources generating W-2 from Abbott, UCB, GSK, Roemmers; as Consulting/Advisory Board Activity from Novartis, GSK, Merck.

**Mario Alonso-Vanegas, M.D.**
Mexican neurosurgeon trained in México and specialized in Epilepsy and functional surgery in Montreal at the Neurological Institute under the tutelage of Dr. André Olivier. Since January 1999 appointed at the National Institute of Neurology and Neurosurgery in México City, as responsible neurosurgeon for the Epilepsy Surgery Program and professor of the postgraduate epilepsy surgery course.

Dr. Alonso-Vanegas discloses receiving support as Speakers Bureau Member (supported by for-profit entities) from Cyberonics, Inc.

**David King-Stephens, M.D.**
I am an adult epileptologist and work at a level 4 epilepsy program in San Francisco. Our center participates in medication and device trials for treatment of refractory epilepsy. My fellowship in epilepsy was at Yale University.

Dr. King-Stephens has nothing to disclose.

**Carlos Medina-Malo, M.D.**

**Blanca Vazquez, M.D.**
Dr. Vazquez discloses receiving support as Speakers Bureau Member (supported by for-profit entities) from Sunovion Pharma, Supernus, Acorda Pharma; as Consultion/Advisory Board Activity from Sunovion, Supernus, Acorda.

**Leonardo Bonilha, M.D. (CME Reviewer)**
I am a neurologist and neurophysiologist. I work at the Medical University of South Carolina, where I am a member of the Neurology Department and of the Comprehensive Epilepsy Center. I direct a neuroimaging research lab focused on the understanding of the neurobiological mechanisms supporting language recovery in subjects with aphasia, as well as epilepsy treatment outcomes.

Dr. Bonilha has nothing to disclose.

**Diego Morita, M.D. (CME Reviewers)**
Diego Morita is an Assistant Professor of Pediatrics and Neurology at Cincinnati Children’s Hospital Medical Center and the University of Cincinnati College of Medicine. He is the Medical Director of the Cincinnati Children's New Onset Seizure Program and a Co-Medical Director of the Cincinnati Children's Neuroscience Unit. His clinical and research interests are a) quality improvement in healthcare, b) anti-seizure medications side effects, c) health related quality of life.

Dr. Morita discloses receiving support as Consulting/Advisory Board Activity from Upsher Smith Laboratories; as Honoraria from Commercial Sources from Springer; as Research Funding from For Profit Commercial Sources/Principle Investigator from UCB Eisai.

Paul Levisohn (Medical Content Specialist, AES)
Dr. Levisohn is a member of the faculty of the section of Pediatric Neurology at The University of Colorado School of Medicine and Children's Hospital Colorado Neuroscience Institute, having joined the faculty over 15 years ago following a similar period of time in the private practice of pediatric neurology. His academic career has focused on clinical care for children with epilepsy with particular interest in clinical trials and on the psychosocial impact of epilepsy. Dr. Levisohn is currently a consultant on medical content for CME activities to staff of AES. He is a member of the national Advisory Board of EF and has been chair of the advisory committee for the National Center of Project Access through EF.

Paul Levisohn, M.D. discloses receiving Research Funding for clinical trials from Eisai.

DISCLAIMER
Opinions expressed with regard to unapproved uses of products are solely those of the faculty and are not endorsed by the American Epilepsy Society or any manufacturers of pharmaceuticals.

MEDICAL EDUCATION EVALUATOR® AND CERTIFICATES
The Medical Education Evaluator® is an online system that allows any attendee to self-manage the process of completing course evaluations, tracking educational credits and printing out the CME or nursing certificate.

Pharmacy credit and certificates are available separately as noted above.

Log on to the Evaluator via the AES website at www.AESnet.org. Once you are on the Evaluator, you will be asked to enter your MyAES ID # and password. You must then complete the evaluations and claim credit for the sessions you attended. The certificate(s) are saved to your personal account page and you may print the certificate(s) in PDF format at any time.

To help support this process, attendees who want CME will be asked to pay the following rates:

- **Member Fees:**
  - $50 through January 16, 2015
  - $75 January 17 – February 27, 2015

- **Non-member Fees:**
  - $75 through January 16, 2015
  - $100 January 17 – February 27, 2015

The online Evaluator will be left open through February 27, 2015. You must complete the evaluations and credit tracking by that date.

By completing this information online, attendees greatly assist the Council on Education and Annual Meeting Committee with important needs assessment data whereby the AES can further plan and address educational gaps to meet the needs of our learners.
A meeting attendance certificate will be available for international meeting attendees at the registration desk.
La Neuroestimulación en el Tratamiento de Epilepsía Refractaria
Diciembre 5, 2014
David King-Stephens, M.D.
California Pacific Medical Center
San Francisco, CA

Divulgación
Nombre del Producto Comercial
Neuropace
Investigador Principal, California Pacific Medical Center

Objectivos de Aprendizaje
• Identificar el tipo de paciente adecuado para recibir neuroestimulación
• Identificar el uso adecuado de los diferentes tipos de neuroestimulación

Impacto en el Cuidado y la Práctica Clínica
• Como y cuando se debe de utilizar la neuroestimulación en la epilepsia refractaria
• Identificar las diferentes técnicas de neuroestimulación
• Como individualizar el tratamiento para maximizar la respuesta terapéutica con la neuroestimulación

Tipos de Neuromodulación
VNS
DBS
RNS
eTNS

Estimulación del Nervio Vago
Estimulación del Nervio Vago

- Aumento del flujo sanguíneo en área prefrontal y disminución en el área temporal medial
- Eficacia:
  - 23-24% 2 ensayos clínicos (fase cegada)
  - 31-41% a 1 y 2 años en fase abierta
- EAs alteración de la voz (50%), tos (41%), parestesias (28%), disnea (18%)
- Infección (11.6%)
  - Explantación (1.8%)

Estimulación cerebral profunda

Stimulation of the Anterior Nucleus of Thalamus in Epilepsy (SANTE)

- Estudio prospectivo, randomizado, doble ciego, 110 pacientes, 54% con tratamiento previo con VNS o cirugía
- Estimulación bilateral del núcleo anterior del tálamo
- Cátodo: electrodo en el tálamo; ánodo: estimulador
- Criterios de inclusión
  - Crisis parciales +/- generalización
  - Falta de respuesta a un menos 3 FAEs
  - > 6 crisis/mes

SANTE

- 5 V, pulsos 90μs, 145 Hz, ciclo: 1 min on/5 min off
- Fase ciega de 3 meses: sin cambios en los FAEs
- Fase abierta 4-13 meses: cambios limitados en los parámetros de estimulación
- Objectivo primario: reducción en la frecuencia de CE

SANTE

- Resultados
  - Reducción % mediana: 40.4% estimulación temprana vs 14.5% control (p=0.0023)
  - Mejor respuesta en crisis parciales complejas que en crisis tónico-clónicas generalizadas
  - Efectividad dependiente de la región donde la crisis se origina: lóbulo temporal > origen multifocal o difuso > extra-temporal

- Efectos adversos más comunes relacionados al sitio de implantación: parestesias (18.2%), dolor (10.9%), infección (9.1%)
- 4.1% hemorragias intracerebrales incidentales
- EAs más comunes: depresión (14.8%), problemas de la memoria (13%)
SANTE

Respuesta a largo plazo:
- % promedio de reducción a 13 meses: 41%
- 56% a 25 meses
- 50% tasa de respondedores
  - 43% a 13 meses
  - 54% a 25 meses
  - 67% a 37 meses
- 12.7% contról absoluto en los últimos 6 meses del estudio

Estimulación externa del nervio trigémino

eTNS en Epilepsía

- Estudio doble ciego, contról-activo, 50 sujetos con >2 crisis parciales por más tratados por 18 semanas, randomizados a tratamiento (eTNS 120 Hz) ó contról (eTNS 2 Hz).
- Tasa de respondedores (>50% reducción en la frecuencia de CE): 30.2% para el grupo con tratamiento vs 21.1% para el grupo contról ($p = 0.31$, modelo generalized estimating equation [GEE]).
- El grupo con tratamiento tuvo mejoría significativa intragrupal (17.8% a 6 semanas vs 40.5% a 18 semanas, $p = 0.01$)

Neurology 2013;80:786-91

eTNS en Epilepsía

- Efectos adversos: ansiedad (4%), cefaléa (4%), irritación cutánea (14%)
- Mejoría en la depresión (Beck Depression Inventory ($p = 0.02$, ANOVA)
- Estudio multicéntrico de fase III

eTNS en Epilepsía

- Penfield and Jasper (1954) Estimulación intra-operativa
- Lesser et al. (1999) Estimulación aborta crisis electrográficas inducidas por la estimulación durante el mapeo cortical
Neuropace

Neuroestimulador y electrodos

Neuroestimulador conectado a 1 ó 2 electrodos implantados sobre el foco(s) epileptógeno(s)

FDA: Indicación

The RNS® System is an adjunctive therapy in reducing the frequency of seizures in individuals 18 years of age or older with partial onset seizures with no more than 2 epileptogenic foci, are refractory to two or more antiepileptic medications, and currently have frequent and disabling seizures (motor partial seizures, complex partial seizures and/or secondarily generalized seizures)

RNS: Estimulación Reactiva

- Se identifica el patrón EEG anormal
- Ajuste de los parámetros de detección
- Ajuste de los parámetros de estimulación

Detección tardía

Detección adecuada

El Sistema RNS
Spanish Symposium
Alternative Approaches to Epilepsy Treatments

Dietary Measures, Vitamins and Other Supplements, Herbal Treatments

Carlos Medina-Malo, M.D.

Slides not available.
Spanish Symposium
Alternative Approaches to Epilepsy Treatments

Non-Conventional Medical Treatments, Mind-Body Therapies

Blanca Vazquez, M.D.

Slides not available.