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SATELLITE SYMPOSIA

11th European Congress on Epileptology
Stockholm, Sweden
29th June – 3rd July, 2014

Monday, 30th June 2014
Satellite Symposium: Eisai Ltd
16:30–18:00, Hall A2

MAKING A MARK IN EPILEPSY CARE: CAN WE DO MORE?

Chair: Torbjörn Tomson (Sweden)

This symposium will address some important issues in the care of people with epilepsy. Combining literature and data with patient cases and real-world advice, the experienced faculty will challenge some of our current practices and discuss ways to improve and individualise care for our patients with epilepsy.

The transition from child to adult epilepsy care is a phase requiring special consideration. Our patients experience the difficult transition from childhood to adulthood while also being transferred from a comprehensive paediatric care system to an adult neurology system that has different resources, competencies, management strategies, and perspectives.

For many adolescents with epilepsy, poor adherence to medical advice and prescribed medication is the reality. Are we as physicians aware of how our patients really take their medications? Or to what extent medication non-adherence affects seizure control and outcomes? We will discuss strategies to uncover and improve poor medication adherence among our patients.

One factor that impacts adherence is drug load, and monotherapy has been considered the gold standard in epilepsy treatment for nearly 40 years. The AED landscape has evolved considerably, and since the introduction of new-generation AEDs like perampanel, which has a different mode of action from all other AEDs, it may be timely to re-evaluate our attitudes to polytherapy to strive for the best possible outcomes for our patients.

These fundamental issues of transition, adherence, and personalising polytherapy, will be discussed in formal lectures and illustrative case studies with clinical practice points and the opportunity for audience questions and panel discussion.

BUILDING BRIDGES: MANAGING THE TRANSITION FROM CHILD TO ADULT EPILEPSY CARE

Marina Nikanorova (Denmark)

THE MISSING LINK: UNCOVERING AND MANAGING POOR ADHERENCE

Martin Brodie (UK)

BREAKING THE MOULD: CHALLENGING MONOTHERAPY AND THE FAMILIAR CHOICES FOR ADJUNCTIVE THERAPY

Eugen Trinka (Austria)

PANEL DISCUSSION: PRACTICALITIES OF PRESCRIBING PERAMPANEL

Torbjörn Tomson (Sweden)
Marina Nikanorova (Denmark)
Martin Brodie (UK)
Eugen Trinka (Austria)

Monday, 30th June 2014
Satellite Symposium: UCB Pharma SA
18:30–20:00, Hall A2

CONSIDERATIONS AND CONSEQUENCES – HOW DRUG TREATMENT CHOICES INFLUENCE EPILEPSY OUTCOMES

Chair: Elinor Ben-Menachem (Sweden)

THE ADVANTAGES AND PITFALLS OF OLDER AND NEWER AEDS: EXISTING AND EMERGING EVIDENCE

Scott Mintzer (USA)

FUELLING AN ISSUE? IMPACT OF DISEASE AND TREATMENT ON COGNITION

Christoph Helmstaedter (Germany)

EFFICACY OR EFFECTIVENESS: THE GOALS OF EARLY THERAPY IN EPILEPSY

Fergus Rugg-Gunn (UK)

Satellite Symposia

Tuesday, 1st July 2014
Satellite Symposium: Cyberonics
07:30–09:00, Hall K2

ADVANCING PATIENT CARE THROUGH INNOVATIVE CLOSED LOOP NEUROSTIMULATION

Chair: Paul Boon (Belgium)

INTRODUCTION: REFRACTORY EPILEPSY – MORE THAN SEIZURES
Paul Boon (Belgium)

REDUCING THE BURDEN OF REFRACTORY EPILEPSY
Philippe Ryvlin (France)

SEIZURE DETECTION USING AUTONOMIC SIGNATURES OF EPILEPSY: CLOSING THE LOOP
Shivkumar Sabesan (USA)

THE IMPACT AND POTENTIAL OF CLOSED LOOP NEUROSTIMULATION
Kristl Vonck (Belgium)

DEBATE: ARE WE ADVANCING PATIENT CARE?
Paul Boon (Belgium)

Tuesday, 1st July 2014
Satellite Symposium: ViroPharma
16:30–18:00, Hall A2

MANAGEMENT OF PROLONGED, ACUTE, CONVULSIVE SEIZURES FOR CHILDREN IN THE COMMUNITY – FAR FROM PERFECT™?

Chair: Lieven Lagae (Belgium)

MANAGEMENT OF PROLONGED, ACUTE, CONVULSIVE SEIZURES IN THE COMMUNITY – WHAT HAVE WE LEARNT SO FAR?
Lieven Lagae (Belgium)

UNDERSTANDING THE MANAGEMENT OF PROLONGED, ACUTE, CONVULSIVE SEIZURES – PERSPECTIVES FROM HCPS, CARERS AND PATIENTS
Richard Appleton (UK)

THE PERFECT™ INITIATIVE – EMERGING DATA FROM EUROPEAN-WIDE SURVEY
Federico Vigevano (Italy)

FUTURE MANAGEMENT OF CHILDREN WITH PROLONGED, ACUTE, CONVULSIVE SEIZURES IN THE COMMUNITY – DISCUSSION
Richard Chin (UK) and Rima Nabbout (France)

SUMMARY AND CLOSE
Lieven Lagae (Belgium)

Tuesday, 1st July 2014
Satellite Symposium: NeuroSigma, Inc
18:00–19:30, Hall K2

TRIGEMINAL NERVE STIMULATION: NEUROMODULATION FOR THE 21ST CENTURY

Chair: Christianne Heck (USA)

INTRODUCTION TO TRIGMINAL NERVE STIMULATION: BACKGROUD INFO, ANATOMY, BASIC SCIENCE
Christianne Heck (USA)

ACUTE AND LONG TERM RESULTS IN US CLINICAL TRIALS FOR EPILEPSY AND DEPRESSION
Christianne Heck (USA)

TNS AND CORTICAL EXCITABILITY: TRANSCRANIAL MAGNETIC STIMULATION STUDIES
Adam Pawley (UK)

CLINICAL TRIAL RESULTS AT EUROPEAN EPILEPSY CENTRES
Lina Nashef (UK)
Jose M. Serratosa (Spain)
Séan J. Slaght (UK)

Wednesday, 2nd July 2014
Satellite Symposium: Elekta
16:30–18:00, Hall K2

WHAT CAN EPILEPTOLOGISTS EXPECT FROM MEG?

Chair: Hermann Stefan (Germany)

MEG IN THE PRESURGICAL EVALUATION OF EPILEPSY PATIENTS: PERSPECTIVE OF THE REFERRING CENTRE

Paul Boon (Belgium)

IMPLEMENTATION, ORGANIZATION, AND ROLE OF A MEG LABORATORY IN A LARGE EPILEPSY SURGERY CENTRE

Richard C. Burgess (USA)

FUTURE OF MEG IN TREATMENT OF EPILEPSIES

Stefan Rampp (Germany)

Abstracts

p583
METALLOME OF SCLEROTIC HIPPOCAMPI IN PATIENTS WITH DRUG-RESISTANT MESIAL TEMPORAL LOBE EPILEPSY

Ristić AJ[1], Sokić D[1], Baščarević V[2], Spasić S[3], Vojvodić N[1], Savić S[4], Raičević S[2], Kovačević M[1], Savić D[5], Spasojević I[6]
[1]Epilepsy Center, Neurology Clinic, Clinical Center of Serbia, Belgrade, Serbia, [2]Neurosurgery Clinic, Clinical Center of Serbia, Belgrade, Serbia, [3]Department of Chemistry, Institute of Chemistry, Technology, and Metallurgy, University of Belgrade, Belgrade, Serbia, [4]Institute of Forensic Medicine, Medical School, University of Belgrade, Belgrade, Serbia, [5]Department of Neurobiology, Institute for Biological Research "Siniša Stanković", University of Belgrade, Belgrade, Serbia, [6]Life Sciences Department, Institute for Multidisciplinary Research, University of Belgrade, Belgrade, Serbia

Purpose: Altered hippocampal metallome is strongly implicated in the pathology of mesial temporal lobe epilepsy with hippocampal sclerosis (mTLE-HS). We aimed to determine sodium, potassium, calcium, magnesium, iron, copper, manganese, and zinc concentration in epileptic human hippocampi.

Method: Hippocampi of 24 drug-resistant mTLE-HS patients (age: 35.6 ± 9.4 years) that underwent anterior temporal lobe resection and amygdalohippocampectomy surgery, and 17 hippocampi obtained by autopsy from 13 controls (age: 40.5 ± 12.9 years) were analyzed using inductively coupled plasma optical emission spectrometry.

Results: Epileptic hippocampi showed significantly lower concentrations (μg/g of tissue) of copper (HS: 2.34 ± 0.12; control (C): 3.57 ± 0.33; $p < 0.001$), manganese (HS: 0.205 ± 0.030; C: 0.409 ± 0.064; $p = 0.004$), and potassium (HS: 2001 ± 59; C: 2322 ± 61; $p < 0.001$), and increased sodium level (HS: 1131 ± 22; C: 1040 ± 25; $p = 0.010$). Zinc concentration was slightly higher in HS (13.97 ± 1.51 μg/g) compared to controls (10.97 ± 1.03 μg/g), whereas iron, calcium, and magnesium levels did not differ.

Conclusion: Our results provide a relevant prerequisite for understanding the potential involvement of different metals in the pathology of HS, emphasizing general deregulation of metallome, copper and manganese deficiency, and the absence of iron accumulation.

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RETINAL NERVE FIBER LAYER THICKNESS: A POSSIBLE BIOMARKER OF DRUG RESISTANCE IN EPILEPSY

Balestrini S[1,2], Bartman AP[1], Clayton LM[1], Chinthapalli KV[1], Novy J[1], Coppola A[1], Wandschneider B[1], Koepp MJ[1], Stern W[1], Acheson J[3], Bell GS[1], Sander JW[1], Sisodiya SM[1]
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Purpose: Epilepsy has been associated with cerebral white matter tract abnormalities. Retinal nerve fiber layer thickness is related to the axonal anterior visual pathway and is considered a marker of overall white matter "integrity". Retinal nerve fiber layer thickness was previously assessed in a cohort of people with epilepsy and a history of vigabatrin exposure, showing significant thinning compared to healthy controls. We hypothesised that retinal nerve fiber layer changes would occur in people with chronic epilepsy, independently of previous vigabatrin treatment, related to clinical characteristics of epilepsy.

Method: Three hundred subjects with chronic epilepsy and 90 healthy controls were included. People with previous exposure to vigabatrin or known ocular disease were excluded from the analysis. Retinal nerve fiber layer imaging was performed using spectral-domain Optical Coherence Tomography.

Results: People with epilepsy had significantly lower average retinal nerve fiber layer thickness and lower thickness of each of the 90° quadrants than healthy controls ($p < 0.001$, Wilcoxon rank-sum test). In a multivariate logistic regression model, drug resistance was the only significant predictor of abnormal retinal nerve fiber layer thinning (OR 2.09, CI 95% 1.09–4.01, $p = 0.03$). Duration of epilepsy and the presence of intellectual disability also showed a significant relationship with retinal nerve fiber layer thinning in a multivariate linear regression model (coefficients −0.16, $p = 0.004$ and −4.0, $p = 0.044$, respectively).

Conclusion: This suggests that drug-resistant epilepsy is associated with thinning of the retinal nerve fiber layer. As this is easily assessed by optical coherence tomography, retinal nerve fiber layer thickness is a candidate biomarker of drug resistance and, by extension, of epilepsy severity. Longitudinal studies are now needed. The underlying mechanisms are unknown and may be diverse.

p585
ACONITUM COCHLEARE WOROSCHIN-OIL ATTENUATES THE MOLECULAR MARKERS OF EPILEPTOGENESIS IN PENTYLENETETRAZOLE INDUCED KINDLED MICE WITH SAFE TOXICITY PROFILE

Malhi SM[1], Mazhar F[1], Zeeshan M[1], Chaudhary MI[1], Shaheen F[1], Simjee SU[1,2]
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Purpose: Epilepsy is a chronic neurological disorder, characterized by recurrent seizures occurring as a result of synchronized discharges of neurons in brain. As 33% of patients develop resistance against therapy while others are not without side effects, therefore, need for better and safer drugs is crucial. Neurtrophic factors and Oxidative stress are emerging as mechanisms that may play an important role in the etiology of seizure-induced neuronal death. In the present study, *Aconitum cochleare* WOROSCHIN-oil (ACR-oil) was tested for its ability (i) to suppress the convulsive and lethal effects of Pentylenetetrazole (PTZ) in kindled mice, (ii) to attenuate the PTZ-induced oxidative injury in the brain tissue and (iii) to modulate the gene expression *BDNF* and its receptor *Trk-B* when given as a pretreatment prior to each PTZ injection during kindling acquisition. Diazepam and valproic acid, major antiepileptic drugs, were also tested for comparison.

Methods: Once acute screening was done, all groups except for control group were kindled by injections of PTZ with an interval of 48 h ($n = 12$). In the 18th injection, all groups were sacrificed and the brain samples were collected and used for determination of oxidative stress parameters and targeted gene expressions by PCR.

Results: Our results suggest that ACR-oil treatment (100 mg/kg, 200 mg/kg) significantly inhibit, both acute and chronic PTZ induced seizures ($p < 0.05$). Toxicity studies demonstrate that the test oil is devoid of major toxic effects on suggested doses. Our test oil not only produced antiepileptic effect but also diminished the PTZ induced oxidative stress ($p < 0.05$, $p < 0.001$).