

# 2ND EAST MEDITERRANEAN EPILEPSY CONGRESS

4TH - 6TH MARCH 2010

# DUBAI

FINAL PROGRAMME & ABSTRACT BOOK



## Dubai2010

2nd East Mediterranean  
Epilepsy Congress



INTERNATIONAL  
LEAGUE  
AGAINST  
EPILEPSY



4th - 6th March





9th European  
Congress  
on **Epileptology**  
in **2010**

June 27<sup>th</sup> - July 1<sup>st</sup> 2010, Rhodes

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**ILAE-CEA**  
ESTABLISHED 1909

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**R H O D E S - G R E E C E**

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## WELCOME MESSAGE

Dear Friends and Colleagues,

On behalf of the International League Against Epilepsy and the International Bureau for Epilepsy, it gives us great pleasure to welcome you to the 2nd East Mediterranean Epilepsy Congress (EMEC) here in Dubai.

Wedged between Europe and Asia, Dubai is not just a city of excitement. It is also a city of surprises. With the newly opened world's highest structure, world class architecture, first class accommodation and international cuisine, Dubai offers something for every taste. It is truly one of the most impressive cities of the 21st century – a place where old meets new in the Middle East.

Following on from the success of the 1st EMEC in Luxor, the 2nd EMEC presents a valuable opportunity to exchange knowledge and discuss, amongst clinicians, researchers and all those who share an interest in epilepsy, issues central to the treatment and care of people with epilepsy. With renowned experts in the field of epilepsy invited to partake in the congress, we are convinced that you will greatly benefit from the educational aims of this meeting.

The diverse scientific programme will include a 'Controversies in Epilepsy' programme, in which issues of clinical relevance with no clear guidelines will be discussed. The main sessions of the programme include "Monitoring of Antiepileptic Drugs", "Epileptic Encephalopathies" and "Reflex Epilepsy" with a special session devoted to video EEG and a variety of seizure types also included.

The Global Campaign Against Epilepsy will explore ways of reducing the treatment gap across the region and will also see the launch of the World Health Organisation's regional report on epilepsy in the East Mediterranean region. Further to this, a session entitled "Epilepsy in East Mediterranean Countries" will address topics specific to the region, including the stigma associated with epilepsy and traditional practices towards treatment of epilepsy.

We welcome you to Dubai and we hope you enjoy the congress.

Very best regards,



**Solomon L. Moshé**

President,  
International League  
Against Epilepsy (ILAE)



**Mike Glynn**

President,  
International Bureau  
For Epilepsy (IBE)



**Ahmad Beydoun**

Chair,  
ILAE Commission on  
Eastern Mediterranean  
Affairs

Chair,  
Scientific Advisory &  
Organising Committee



**Najib Kissani**

Chair,  
IBE Eastern  
Mediterranean  
Regional Committee

## COMMITTEES

### Scientific Advisory and Organising Committee

Ahmad Beydoun (Lebanon) – *Chair*  
Abdulaziz Alsemari (KSA)  
Michel Baulac (France)  
Hassan Hosny (Egypt)  
Jihad Inshasi (UAE)  
Najib Kissani (Morocco)

### ILAE Commission on Eastern Mediterranean Affairs

Ahmad Beydoun (Lebanon) – *Chair*  
Adel Al Jishi (Bahrain)  
Hassan Hosny (Egypt)  
Jihad Inshasi (UAE)  
Ahmad Khalifa (Syria)  
Sonia Khan (KSA)  
Chahnez Triki (Tunisia)  
Saoudi Zemrag (Morocco)  
Michel Baulac, EC Liaison (France)

### Local Organising Committee of the 2nd EMEC

Shareefa Abdool (UAE) – *Chair*  
Abu Baker Al Madani (UAE)  
Khalid Al Shamsi (UAE)  
Tania Tayah (UAE)

### IBE Eastern Mediterranean Regional Committee

Najib Kissani (Morocco) – *Chair*  
Abdulaziz Al Semari (KSA)  
H R. Chaudhry (Pakistan)  
Asma Enright (KSA)  
Dr Gharagozli (Iran)  
Hassan Hosny (Egypt)  
Manar Sawan (Lebanon)  
Chahnez Triki (Tunisia)

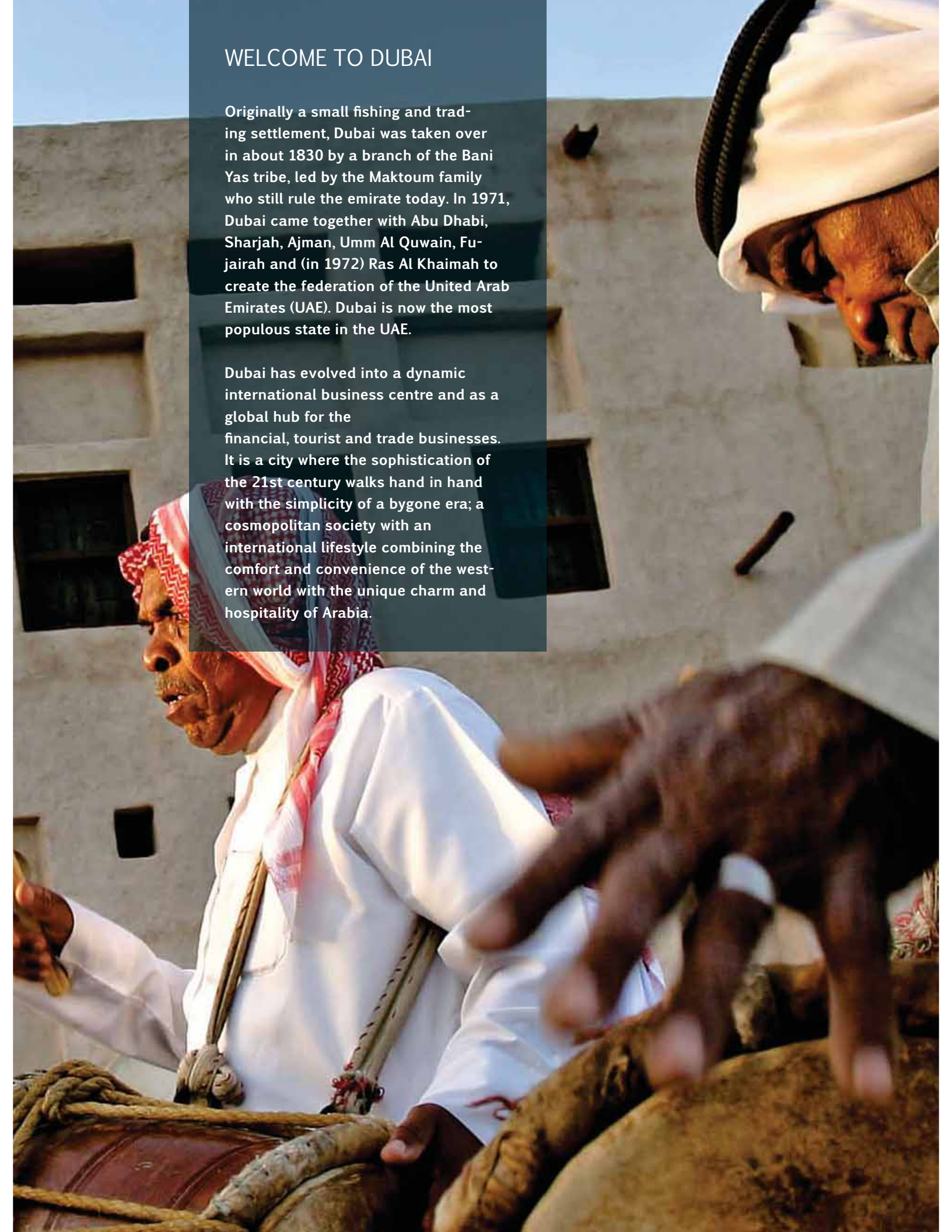
### Abstract Review Committee

Alaa Elsharkawy (Egypt)  
Asma Enright (KSA)  
Ahmad Khalifa (Syria)  
Sonia Khan (KSA)

## WELCOME TO DUBAI

Originally a small fishing and trading settlement, Dubai was taken over in about 1830 by a branch of the Bani Yas tribe, led by the Maktoum family who still rule the emirate today. In 1971, Dubai came together with Abu Dhabi, Sharjah, Ajman, Umm Al Quwain, Fujairah and (in 1972) Ras Al Khaimah to create the federation of the United Arab Emirates (UAE). Dubai is now the most populous state in the UAE.

Dubai has evolved into a dynamic international business centre and as a global hub for the financial, tourist and trade businesses. It is a city where the sophistication of the 21st century walks hand in hand with the simplicity of a bygone era; a cosmopolitan society with an international lifestyle combining the comfort and convenience of the western world with the unique charm and hospitality of Arabia.



## PRACTICAL INFORMATION

### CLIMATE

Dubai has a sub-tropical and arid climate with infrequent and irregular rainfall. Temperatures for March range from a min of 17°C to a max of 28°C.

### CURRENCY & BANKING

The unit of currency in Dubai is the Dirham, denoted by AED or Dh, which is divided into fils (1 AED = 100 fils). Major currencies may be exchanged at all banks and bureaux de change. Banks usually close around midday and are closed on Fridays.

### LANGUAGE

The official language of Dubai is Arabic. English is widely understood and ranks alongside Arabic as the language of commerce. The official language of the congress is English.

### TIME ZONE

The time in Dubai is +0400 UTC hours. No adjustments for daylight savings time apply in 2010.

### TRANSPORT

#### *Air:*

Dubai is served by three international airports, Dubai, Sharjah and Abu Dhabi. Distances and travel times are as follows:

#### **Dubai International Airport (DXB)**

Approx 2 Km from congress venue.

Time by taxi: *5 minutes*

#### **Sharjah International Airport (SHJ)**

Approx 15 Km from congress venue.

Time by taxi: *25 minutes*

#### **Abu Dhabi International Airport (AUH)**

Approx 130 Km from congress venue.

Time by taxi: *1h 45 minutes*

#### *Taxis:*

Taxis operate from the airport to the city centre and hotels. There is a minimum fare of 10 AED for passengers travelling within Dubai. The starting fare from the airport to any destination in Dubai is 20 AED. Taxi fare from the airport to the congress venue is approximately 35 AED with a journey time of approx 5 minutes.

About 7,000 regulated taxis operate in Dubai.

All taxis are metered. Taxis have various coloured tops: pink is meant only for women, children and families, while the red top taxis are operated by Dubai Taxi Corporation (DTC) of the RTA, a Government of Dubai organization.

The others such as blue, green, yellow, brown or white tops belong to companies that have been franchised by the DTC.

#### *Metro:*

The Dubai Metro, is a driverless, fully automated and fully air-conditioned metro network. There are two lines operational – the Red and the Green Lines. You can purchase tickets from Ticket Offices and ticket vending machines at each station. Standard Adult fare ranges from 2 to 6.50 AED varying according to travel distance.

#### *Bus:*

The RTA operates an extensive and cost effective bus service in Dubai with over 75 routes within Dubai city and 15 inter-emirates buses. Buses are air-conditioned and comfortable. An exclusive service for women commuters is provided. RTA has also installed modern air-conditioned bus shelters all over the city.

# GENERAL CONGRESS INFORMATION

## CONGRESS SECRETARIAT

For all enquiries during the congress, please contact the Congress Secretariat at the registration desk.

For all enquiries after the congress, please contact:

**2nd EAST MEDITERRANEAN EPILEPSY CONGRESS SECRETARIAT**  
**ILAE / IBE Congress Secretariat**  
**7 Priory Hall, Stillorgan**  
**Dublin 18, Ireland**

**Tel.: +353 1 2056720**  
**Fax: +353 1 2056156**  
**E-mail: [info@epilepsycongress.org](mailto:info@epilepsycongress.org)**  
**Website: [www.epilepsydubai2010.org](http://www.epilepsydubai2010.org)**

## ILAE CHAPTER CONVENTION

The ILAE Chapter Convention will take place on Thursday 4th March from 17:00 to 19:00.

## CULTURAL EVENING

Discover the true beauty of Dubai aboard a traditionally decorated wooden dhow as you enjoy a buffet dinner, sailing along the Dubai creek under the moonlight. This evening cruise will take place on Friday 5th March from 20:30 to 23:30 and is a ticketed event. Tickets are US\$ 95. For further information, please go to the booking desk in the Registration Area.

## EXHIBITION

The Exhibition Area is situated in the Al Ras Ballroom Section 1.

### Exhibition Opening Times

Thursday 4th March	09:00 - 17:00
Friday 5th March	09:00 - 17:30
Saturday 6th March	09:00 - 16:00

## LUNCHES AND COFFEE BREAKS

Lunches and coffee breaks will be held in the Exhibition Area (Al Ras Ballroom Section 1).

## WELCOME CEREMONY

The Welcome Ceremony for the 2nd EMEC will take place in the main session hall at 19:30 on Thursday 4th March. Addresses will be made by the President of the Emirates League Against Epilepsy, the Presidents of ILAE and IBE as well as the Chairs of the ILAE Commission on Eastern Mediterranean Affairs and the IBE Eastern Mediterranean Regional Committee. A Welcome Reception sponsored by the Dubai Convention Bureau will be held after the Welcome Ceremony.

## POSTERS

The Poster Area will be located in the lobby area outside the main session hall. For any queries related to the poster display, please contact the Congress Secretariat at the registration desk. *Posters can be mounted at 08:00 – 09:00 on Thursday 4th March.*

### Poster Display Times

Thursday 4th March	09:00 - 17:00
Friday 5th March	09:00 - 17:00
Saturday 6th March	09:00 - 16:00

## SPEAKER ROOM

The Speaker Room is located in the Al Khayma Room, adjacent to the registration area.

Please note that all speakers should submit their finalised PowerPoint presentations to the speaker room no less than 3 hours before their session is due to start. Speakers presenting at morning sessions are requested to submit their presentations no later than 17:00 on the evening before their session is scheduled.

## TOUR

To experience the spectacular Jumeirah Mosque, the impressive Beach Palaces of Dubai Sheiks, the ancient and beautifully restored house of Sheikh Saeed, the grandfather of the present Ruler of Dubai and other wonders of Dubai, join us on the 'Taste of Dubai' City Tour. For further information, please go to the booking desk in the Registration Area.



	FRIDAY 5 <sup>TH</sup> MARCH	SATURDAY 6 <sup>TH</sup> MARCH
	Breakfast Seminar 1	Breakfast Seminar 2
08:00 - 08:30	Practical approach to conduct valid epidemiological studies in East Mediterranean countries (08:00 - 09:00)	i) Practical approach to genetic testing in epilepsy: what and when to test ii) From the clinical presentation to the testing decision (08:00 - 09:00)
08:30 - 09:00		
09:00 - 09:30	Main Session 1	Main Session 4
09:30 - 10:00	Safety and monitoring of antiepileptic drugs (09:00 - 10:00)	Epilepsy in East Mediterranean countries (09:00 - 10:30)
10:00 - 10:30	Coffee Break (10:00 - 10:30)	Coffee Break (10:30 - 11:00)
10:30 - 11:00	GSK Satellite Symposium	
11:00 - 11:30	Epilepsy Total Care - Treating epileptic patients not only their seizures (10:30 - 11:30)	Platform Session (11:00 - 13:00)
11:30 - 12:00	Lunch (11:30 - 14:00)	
12:00 - 12:30		
12:30 - 13:00		
13:00 - 13:30	Lunch (13:00 - 14:00)	Invited Lecture: Neonatal Seizures (14:00 - 14:30)
13:30 - 14:00		
14:00 - 14:30	ILAE Special Symposium (14:00 - 14:30)	Main Session 5
14:30 - 15:00	Global Campaign Against Epilepsy (14:30 - 15:00)	Video EEG (14:30 - 16:30)
15:00 - 15:30	Coffee Break (15:00 - 15:15)	
15:30 - 16:00	Main Session 2	
16:00 - 16:30	Reflex Epilepsy (15:15 - 16:30)	
16:30 - 17:00	Main Session 3	
17:00 - 17:30	Epileptic encephalopathies (16:30 - 17:30)	
17:30 - 18:00		
18:00 - 18:30		
18:30 - 19:00		
19:00 - 19:30		
19:30 - 20:00		
20:00 - 20:30		
20:30 - 21:00	Cultural Evening	
21:00 - 21:30		
21:30 - 22:00		

POSTER DISPLAY

POSTER DISPLAY



# SCIENTIFIC PROGRAMME

THURSDAY 4TH MARCH

## CONTROVERSIES IN EPILEPSY 1

Chairs: Jihad Inshasi (UAE) and Ibrahim Thubaiti (KSA)

- 09:00 – 09:30 | AED prophylaxis: what is the evidence? Brain tumours, trauma, SAH and ICH  
*Tania Tayah (UAE)*
- 09:30 – 10:00 | First seizure: to treat or not to treat?  
*Suad Al Yamani (KSA)*
- 10:00 – 10:30 | Do we need driving regulations for patients with epilepsy in East Mediterranean countries?  
*Abdulaziz Alsemari (KSA)*

## CONTROVERSIES IN EPILEPSY 2

Chairs: Ibrahim Shoukry (Egypt) and Abdulaziz Alsemari (KSA)

- 11:00 – 11:30 | Seizure free post epilepsy surgery: should AEDs be discontinued?  
*Wassim Nasreddine (Lebanon)*
- 11:30 – 12:00 | Alternate monotherapy or polytherapy after failure of first AED?  
*Taoufik Al Saadi (UAE)*

## GLOBAL CAMPAIGN AGAINST EPILEPSY

Chairs: Ibrahim Shoukry (Egypt) and Abdulaziz Alsemari (KSA)

- 12:00 – 12:30 | Introducing the World Health Organization and the Global Campaign Against Epilepsy  
*Tarun Dua, World Health Organisation (Switzerland)*
- 12:30 – 13:00 | Launch of WHO Eastern Mediterranean regional report on epilepsy  
*Khalid Saeed, World Health Organisation (Pakistan)*

## CONTROVERSIES IN EPILEPSY 3

Chair: Najib Kissani (Morocco)

- 14:00 – 14:30 | Alternative therapies in epilepsy: what is the evidence?  
*Yousef Al-Said (KSA)*
- 14:30 – 15:00 | Febrile convulsions: when to treat?  
*Amira Masri (Jordan)*
- 15:00 – 15:30 | Are benign epilepsies of childhood always benign?  
*Raidah Al Baradie (KSA)*

## CONTROVERSIES IN EPILEPSY 4

Chairs: Hassan Al Hail (Qatar) and Mike Glynn (Ireland)

- 16:00 – 16:30 | Do epilepsy associations help patients and families with epilepsy?  
*Nahida Al Assi (Lebanon)*
- 16:30 – 17:00 | IGE: should EEG be used as a surrogate marker of drug efficacy?  
*Hassan Hosny (Egypt)*

# SCIENTIFIC PROGRAMME

FRIDAY 5TH MARCH

## BREAKFAST SEMINAR 1

**08:00 – 09:00** | Practical approach to conduct valid epidemiological studies in East Mediterranean countries  
*Ettore Beghi (Italy)*

## MAIN SESSION 1 - SAFETY AND MONITORING OF ANTIEPILEPTIC DRUGS

**Chairs: Ahmad Khalifa (Syria) and Abdalla Al Asmi (Oman)**

**09:00 – 10:00** | *Bone health and AEDs.*  
*Sonia Khan (KSA)*

| *Monitoring for adverse events of AEDs*  
*Mona Thakre (UAE)*

## GSK SATELLITE SYMPOSIUM

**10:30 – 11:30** | Epilepsy Total Care - Treating epileptic patients not only their seizures  
*Ley Sander (UK)*

## ILAE SPECIAL SYMPOSIUM

**Chair: Chahnez Triki (Tunisia)**

**14:00 – 14:30** | Infantile spasms; how can we improve the outcome?  
*Solomon L. Moshé (USA)*

## GLOBAL CAMPAIGN AGAINST EPILEPSY - Chair: Chahnez Triki (Tunisia)

**14:30 – 15:00** | Mental health systems in the Eastern Mediterranean region—challenges and gaps.  
*Khalid Saeed, World Health Organisation (Pakistan)*

## MAIN SESSION 2 - REFLEX EPILEPSY

**Chair: Chahnez Triki (Tunisia)**

**15:15 – 16:30** | Photosensitive epilepsies  
*Naji Riachi (Lebanon)*

| Primary reading epilepsies  
*Bassem Uthman (Qatar)*

## MAIN SESSION 3 - EPILEPTIC ENCEPHALOPATHIES

**Chairs: Sarmad A. Al-Fahad (Iraq) and Abdel Rahman Sallam (Yemen)**

**16:30 – 17:30** | West, Dravet and Lennox-Gastaut syndromes  
*Ahmed Alrumayan (KSA)*

| CSWSS and Laudau-Kleffner syndromes  
*Ahmad Beydoun (Lebanon)*

| Progressive myoclonus epilepsies  
*Abdallah Rahbani (Lebanon)*

## SCIENTIFIC PROGRAMME

SATURDAY 6TH MARCH

## BREAKFAST SEMINAR 2

- 08:00 – 09:00** | Practical approach to genetic testing in epilepsy: what and when to test  
*Eric LeGuern (France)*
- From the clinical presentation to the testing decision  
*Riad Gouider (Tunisia)*

## MAIN SESSION 4 - EPILEPSY IN EAST MEDITERRANEAN COUNTRIES

Chairs: Hesham Awn (Yemen) and Adel Misk (Palestine)

- 09:00 – 10:30** | How to optimise the use of video-EEG in East Mediterranean countries  
*Amina Gargouri-Berrechid (Tunisia)*
- Epilepsy stigma in East Mediterranean countries  
*Khaled Ali Al-Hourani (Jordan)*
- Treatment gap of epilepsy in East Mediterranean countries  
*Chahnez Triki (Tunisia)*
- Knowledge and traditional practices towards epilepsy in South Morocco  
*Najib Kissani (Morocco)*

## PLATFORM SESSION

Chairs: Sonia Khan (KSA) and Ahmad Khalifa (Syria)

- 11:00 – 13:00** | **001**  
Definition of a stereotactic 3D model of the human insula for neurosurgical approach (epilepsy and stereotaxic surgery)  
*Aff Afif, Guillaume Becq, Patrick Mertens (France)*
- 002**  
Laughter... seizure or not seizure?  
*Donia Mahjoub<sup>1</sup>, Fabrice Bartolomei<sup>1</sup>, Jean Régis<sup>1</sup>, Patrick Chauvel<sup>1</sup>, Chahnez Charfi Triki<sup>2</sup> (<sup>1</sup>France, <sup>2</sup>Tunisia)*
- 003**  
The role of joint clinics in optimizing epilepsy service  
*Mohammed El Lahawi (United Kingdom)*
- 004**  
Genetic screening of two Tunisian families with generalized epilepsy with febrile seizures plus  
*Nourhene Fendri- Kriaa, Fatma Kammoun, Ahmed Rebai, Dalinda Kolsi, Ikhlass Hadj Salem, Faiza Fakhfakh, Chahnez Triki (Tunisia)*
- 005**  
Juvenile myoclonic epilepsy in a Moroccan family  
*Naima Marzouki<sup>1</sup>, Andrew M Schlossman<sup>2</sup>, Dominika Swistwn<sup>2</sup>, Joseph Gerard Gleeson<sup>2</sup>, Najib Kissani<sup>1</sup> (<sup>1</sup>Morocco, <sup>2</sup>USA)*

CONTINUED

**006**

Vagus nerve stimulation: indications and technique  
*Ali Turkmani, Marwan W. Najjar (Lebanon)*

**007**

Intractable epilepsy and functional hemispherectomy: a report of 41 cases  
*Ibrahim Thubaiti, Abdulaziz Al Semari, Tariq Abalkhail, Suad Al Yamani, Aziza Chedrawi, Hesham Al Dhalaan, Salah Baz (KSA)*

**008**

Demographic profile of patients with epilepsy  
*Abdulaziz Alsemari, Salah Baz, Ibrahim Thubaiti, Soad Al Yamani, Aziza Chedrawi, Tareq Abalkhail, Hesham Al Dhalaan (KSA)*

**009**

Determinants of quality of life among Libyan adult patients with epilepsy  
*Alaa Eldin Elsharkawy<sup>1</sup>, Nagat Ibrahim<sup>2</sup>, Ali Saka<sup>1</sup> (<sup>1</sup>Germany, <sup>2</sup>Libya)*

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**INVITED LECTURE**

**Chairs: Ahmad Khalifa (Syria) and Riad Gouider (Tunisia)**

**14:00 – 14:30**

Neonatal seizures  
*Ibrahim Shoukry (Egypt)*

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**MAIN SESSION 5 - VIDEO EEG FORMAT AS OTHER MAIN SESSIONS**

**Chairs: Ahmad Beydoun (Lebanon) and Michel Baulac (France)**

**14:30 – 16:30**

Idiopathic generalised epilepsies  
*Taufik Al Saadi (UAE)*

Extratemporal epilepsies  
*Sonia Khan (KSA)*

Temporal epilepsies  
*Salah Baz (KSA)*

Mimickers of Epilepsy  
*Wassim Nasreddine (Lebanon)*



## EXHIBITION INFORMATION

The Exhibition Area is situated in the Al Ras Ballroom Section 1.

### Exhibitors:

GSK  
International League Against Epilepsy  
Iranian Epilepsy Association  
Janssen Cilag  
Naghi Medical  
Novartis  
Special Products

### Exhibition Opening Times

<b>Thursday 4th March</b>	<b>09:00 - 17:00</b>
<b>Friday 5th March</b>	<b>09:00 - 17:30</b>
<b>Saturday 6th March</b>	<b>09:00 - 16:00</b>

### PRINCIPAL CONGRESS SPONSOR



### WITH SPECIAL THANKS TO:

**Dubai Convention Bureau**  
**Dubai Audi Visual**

# POSTER DISPLAY INFORMATION

## Poster Display Times

<b>Thursday 4th March</b>	<b>09:00 - 17:00</b>
<b>Friday 5th March</b>	<b>09:00 - 17:00</b>
<b>Saturday 6th March</b>	<b>09:00 - 16:00</b>

## Antiepileptic Drugs

- p010** A paradoxical reaction to levetiracetam in a child with Lennox-Gastaut syndrome: case report and literature review  
*Dana Hasbini, Ahmad Baydoun (Lebanon)*
- p011** Long-term efficacy and tolerability of levetiracetam as add-on therapy in patients with treatment-resistant epilepsy  
*Elena Kkolou, Andreas Dietis, Andriani Flourentzou, Andri Malikkidou, Margarita Petsa, Goula Stylianidou, Savvas S. Papacostas (Cyprus)*
- p012** Does epilepsy affect fetal behaviour before birth and are these effects apparent after birth  
*Catherine Lynch, P G Hepper, J Morrow (United Kingdom)*
- p013** Efficacy and safety of vagal nerve stimulation in intractable epilepsy at Riyadh Military Hospital (RMH)  
*Saleem Al Balawy, Sonia Khan, Karamat Hussein, Nizar Al Amiri, Fadi Ghareeb, Waleed Khoja, Nabil Biary, Mohammed Sofi, Sadaga Alawi, Mohammed Kabiraj, Daher Al Shammari, Miguela Santos (KSA)*

## Basic Mechanisms

- p014** Chronic epilepsy result interictally faster heart rate and dysfunction of autonomic cardiac regulation  
*Tomor Harnod (Taiwan, Republic of China)*
- p015** Different effects of phenobarbital on GABA signaling in acute and chronic seizures: a candidate mechanism of the paradoxical actions of phenobarbital on neonatal seizures  
*Ilgam Khalilov, Romain Nardou, Sumii Yamamoto, Yehezkel Ben-Ari (France)*
- p016** Epilepsy course and malformation caused by abnormalities of cortical development  
*Jera Kruja, Ilirjana Zekja, Silvana Mijo, Gjergj Vreto, Arben Rroji, Ilir Alimehmeti, Mira Kapisyzi (Albania)*
- p017** Age and region dependent effects of antiepileptic drugs and bumetanide in immature rat temporal cortex  
*Abdul Wahab, Klaus Albus, Uwe Heinemann (Germany)*



## Classification of Epilepsy

- p018** Localizing and lateralizing dilemma of non-lesional temporal lobe epilepsy without hippocampus sclerosis (NLTLE HS-ve): a long-term video-EEG (VEEG), SPECTS and PET studies  
*Saleem Al Balawy (KSA)*
- p019** Epilepsy in older people from a tertiary care centre in KSA  
*Salah Baz, Abdulaziz Al Semari, Tariq Abalkhail, Ibrahim Thubaiti (KSA)*
- p020** Frontal cognitive functions in patients with juvenile myoclonic epilepsy  
*Emilija Cvetkovska (Macedonia)*
- p021** Cerebral developmental disorders and epilepsy  
*Saber Chebel, Amel Boughammoura Bouatay, Manel Ammar, Mahbouba Frih-Ayed (Tunisia)*

## EEG

- p022** Evaluation of focal EEG findings in Jeavons syndrome (eyelid myoclonia with absences); occipital lobe related generalized epilepsy  
*Hiroshi Otsubo, Sorawit Viravan (Canada)*
- p023** A review of our experiences in the pre-surgical evaluation of epileptic patients with invasive EEG recording  
*Abdulaziz Alsemari, Salah Baz, Ibrahim Thubaiti, Suad Al Yamani, Aziza Chedrawi, Hisham Al Dhalaan (KSA)*
- p024** Evaluating cognitive function in temporal lobe epilepsy patients using duration mismatch negativity  
*Michi Baba, Miho Miyajima, Hiroko Iino, Ayasa Matsuda, Yasuka Emori, Katsuya Ohta, Taketoshi Maehara, Motoki Inaji, Minoru Hara, Keiko Hara, Masato Matsuura, Eisuke Matsushima, ERP (Japan)*
- p025** EEG findings in juvenile myoclonic epilepsy: a series of 49 patients  
*Amina Gargouri Berrechid, Imen Kacem, Yosr Hizem, Istabrak Abdelkefi, Mouna Ben Djebara, Riadh Gouider (Tunisia)*
- p026** Electrophysiology in unverricht- lundborg disease  
*Amina Gargouri Berrechid, Imen Kacem, Yosr Hizem, Aida Regayg, Mouna Ben Djebara, Riadh Gouider (Tunisia)*
- p027** Comparing mismatch negativity responses to pure-tone vs. vowel-speech changes in temporal lobe epilepsy patients  
*Keiko Hara, Michi Baba, Miho Miyajima, Hiroko Iino, Katsuya Ohta, Taketoshi Maehara, Motoki Inaji, Ayasa Matsuda, Yasuka Emori, Eisuke Matsushima, Minoru Hara, Masato Matsuura (Japan)*
- p028** The role of electroencephalography in coma  
*Shireen Qureshi (KSA)*
- p029** Source localization in electroencephalography  
*Shireen Qureshi (KSA)*

## Epilepsy Surgery

- p030** CNS tumors and refractory epilepsy: surgery outcome in a tertiary care centre  
*Tariq Abalkhail, Salah Baz, Ibrahim Thubaiti, Suad Al Yamani, Aziza Chedrawi, Hesham Al Dhalaan, Abdulaziz Al Semari (KSA)*
- p031** Anatomico-functional organization of the insular cortex in epileptic humans: study by intracerebral electrical stimulations  
*Affif Affif, Lorella Minotti, Philippe Kahane, Dominique Hoffmann (France)*
- p032** Temporal pole disconnection for intractable epilepsy in an intraoperative MRI setup  
*Saad Maili Al Rashidi, Abdulrahman Jafer Sabbagh, Rasheed Al Ameer, Lahbib A. Soualmi, Khurram Siddiqui, Shobit Sinha (KSA)*
- p033** Endoscopic assisted functional hemispherotomy for intractable epilepsy: a technical report  
*Rasheed Alameer, Saad Alrashidi, Ayman Albanyan, Lahbib Alsoualmi, Fawziyah Bamogadam, Sabbagh Abdulrahman (KSA)*
- p034** Invasive monitoring in intractable epilepsy  
*Tarafa Baghdadi Shawki Baghdadi<sup>1,2</sup>, Marwan Walid Najjar<sup>1</sup> (<sup>1</sup>Lebanon, <sup>2</sup>Syria)*
- p035** A look at temporal lobe epilepsy surgery experience in a tertiary care centre in KSA  
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# 2nd East Mediterranean Epilepsy Congress **Abstract Book**



## PLATFORM SESSION ABSTRACTS

001

### Definition of a stereotactic 3D model of the human insula for neurosurgical approach (epilepsy and stereotaxic surgery)

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**Purpose:** Design a method for 3D reconstruction of the insula, including its gyri and sulci, in AC-PC reference usable individually for imaging or for epilepsy and stereotactic surgery.

**Materials - Methods:** Morphometric study using 56 MRI of normal insular region. 26 male/30 female, 28 left/28 right hemispheres.

Stage 1: Reconstruction in AC-PC reference of the insula from 3D-T1-MRI slices 1 mm thick.

Stage 2: Digitalization and superposition of data in 3D using PhotoStudio software (Photo Editing Software) system with PC as the center of coordinates.

Stage 3: MATLAB software (Mathworks Inc.) was used to transform in color values each pixel to obtain a color scale corresponding to the probability of insula sulci localization between 0% and 100%.

**Results:** Demonstration of very significant correlations between the coordinates of the main insular structures (angles, sulci ...) and the length of AC-PC.

This close correlation allows describing a method for 3D reconstruction of the insula on MRI slices that requires only the positions of Ac and PC and then the inter-commissural (AC-PC) length. This procedure defines an area containing insula with 100% probability.

**Conclusion:** 3D reconstruction of insula will be potentially useful for:

1- To improve localization of cortical areas, allowing differentiating insular cortex from opercular cortex during stereoelectroencephalographic exploration of patients with epilepsy (SEEG) or in morphological and functional imaging.

2 - For microsurgical approach of Insula using Neuronavigation techniques.

3 - Identification of Insula during stereotactic surgery (SEEG, biopsy).

002

### Laughter... seizure or not seizure? SEEG answer...

Donia Mahjoub<sup>1</sup>, Fabrice Bartolomei<sup>2</sup>, Jean Régis<sup>1</sup>, Patrick Chauvel<sup>1</sup>, Chahnez Charfi Triki<sup>2</sup>

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**Purpose:** It has been postulated that laughter includes two components: the mirth (positive emotional conscious affect) and the motor aspect involving facial muscles. Emotional aspects seem to be processed in the temporal lobe whereas motor features apparently rely on the frontal cortex. This study has investigated the effect of direct electrical brain stimulation in triggering laughter in epileptic patients investigated by stereoelectroencephalography (SEEG).

**Method:** We have reviewed the behavioral effect of direct brain electrical stimulation (DBES) (train 50 Hz, 0.5-3 mA) performed during 119 SEEG investigations between 1999 and 2007. Several brain sites in each patient were stimulated according to the electrodes placement.

**Results:** We observed DBES-laughter in 4 cases (10 stimulations). In three patients laughter was associated with emotional component. These stimulations were applied in the left temporal lobe for two patients and in the left anterior cingulate region (BA32) in one. In one patient, stimulation of the right cingulate region (BA 24) triggered facial contraction and laughter without emotional content.

**Conclusion:** Only few reports have described laughter evoked by electrical stimulation of cortical sites. Laughter can be observed after stimulation of different sites in the brain, reflecting the complexity of its mechanisms. Emotional content is related to the left hemisphere in agreement with theories about emotional laterality.

003

### The role of joint clinics in optimizing epilepsy service

Mohammed El Lahawi

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**Purpose:** To determine the role of joint clinics.

**Method:** Reviewing the outcome of joint clinics in epilepsy.

**Results:** Joint clinics deliver better care and service to particular group of patients.

**Conclusion:** Epilepsy is a common and chronic neurological disorder. It affects both sexes at different ages. Treating women with epilepsy is different from men and patients with epilepsy may require special care at different stages of their ages.

The emergence of specialized or joint clinics in epilepsy deliver a better service to patients. These clinics include; First

fit clinic, Adolescent clinic, Epilepsy surgery, Epilepsy and pregnancy, Learning difficulty and epilepsy, Epilepsy in the elderly and Neuro-psychiatry clinic for patients with epilepsy and psychiatric disease.

Our experience in the joint clinic for adolescent patients with epilepsy showed that the care is better in the joint clinic, the parents and/or the carer of the adolescent are pleased and satisfied with the handover to the adult neurologist in their presence and the adolescent themselves are happy with the smooth transfer from the paediatric to the adult clinic.

004

#### Genetic screening of two Tunisian families with generalized epilepsy with febrile seizures plus

Nourhene Fendri- Kriaa<sup>1</sup>, Fatma Kammour<sup>2</sup>, Ahmed Rebaï<sup>3</sup>, Dalinda Kolsi<sup>2</sup>, Ikhlass Hadj Salem<sup>1</sup>, Faiza Fakhfakh<sup>1</sup>, Chahnez Triki<sup>2</sup>,

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**Purpose:** The aim of this report is to search for the gene responsible for GEFS+ in two affected Tunisian families.

**Method:** Microsatellite marker analysis was performed on the known FS and GEFS+ loci. According to the results obtained by statistical analyses, GABRG2 on GEFS+3 locus and SCN1A on GEFS+2 locus were considered as two of the potential candidate genes and were tested for mutations by direct sequencing.

**Results:** The mutation analysis and statistical test of the GABRG2 gene revealed a disease association with rs211014 in intron 8 ( $v_2 = 5.25, P = 0.021$ ). A sequencing analysis of the SCN1A gene was performed for the two tested families and showed a known mutation (c.1811G>A) and a putative disease-associated haplotype in only one family.

**Conclusion:** Our results support that SCN1A is the responsible gene for GEFS+ in one of the two studied Tunisian families and suggest a positive association of an intronic SNP in the GABRG2 gene in both families.

005

#### Juvenile myoclonic epilepsy in a Moroccan family

Naima Marzouki<sup>1</sup>, Andrew M Schlossman<sup>2</sup>, Dominika Swistwn<sup>2</sup>, Joseph Gerard Gleeson<sup>2</sup>, Najib Kissani<sup>1</sup>

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**Purpose:** The exact mechanism of JME remains a mystery although genetic research is promising. Different populations offer different prevailing mutations that are the key to reconstructing the molecular pathology of JME. The genetic studies of our Moroccan family will contribute to the current understanding that is available.

**Method:** Our research focused on the seizure presentation and clinical history of four consanguineous families in Morocco. We also collected blood samples from our affected subjects from which genetic linkage scans were run.

**Results:** Of the clinical data that is currently available, our three Moroccan families have clinical presentations consistent with JME and at least one of the four families have promising genetic linkage markers. The data collection is currently limited but we hope to be able to follow-up further and continue analysis.

**Conclusion:** Studying consanguineous families is a promising method to use for researching the genetic makeup of JME. All three families have clinical profiles that are consistent with potential JME and at least one of our three Moroccan families have genetic linkage markers with levels of significance.

006

#### Vagus nerve stimulation: indications and technique

Ali Turkmani, Marwan W. Najjar

American University of Beirut, Beirut, Lebanon

**Purpose:** VNS is now a well established therapeutic modality for patients with intractable epilepsy. Despite the lower efficacy in controlling intractable seizures when compared to resective epilepsy procedures in general, it may compare to some disconnective procedures such as corpus callosotomy, though with a markedly better safety and morbidity profile. The aim of our study is to review our series of patients with intractable epilepsy who had Vagus nerve stimulation (VNS) at the American University of Beirut (AUB), and assess their outcome as compared to the literature

**Method:** The series of 20 consecutive patients operated at AUB over the past 4 years is retrospectively reviewed. The presentation, indications, and surgical technique are briefly described. The outcome and efficacy are studied at 1 year after surgery and at last follow up. The effect on quality of life is referenced and was reported in another paper.

**Results:** Our VNS series is one of the largest in the Arab Middle East States. The procedure has the same efficacy as reported in the European and North American literature. The surgery can be done safely in both the pediatric

and adult populations in a short operative time and minimal complications, with an acceptable seizure control rate comparable to that reported in the literature.

**Conclusion:** The efficacy and outcome in our VNS series was similar to that reported in the literature. The procedure is safe and is a vital part of the neurosurgical armamentarium in the treatment of intractable epilepsy.

007

#### Intractable epilepsy and functional hemispherectomy: a report of 41 cases

*Ibrahim Thubaiti, Abdulaziz Al Semari, Tariq Abalkhail, Suad Al Yamani, Aziza Chedrawi, Hesham Al Dhalaan, Salah Baz, King Faisal Specialist Hospital and Research Centre, Riyadh, KSA*

**Purpose:** Functional hemispherectomy may be considered as the most radical focal brain excision. The improved seizure control and psychosocial improvement following successful surgery outweigh the poor prognosis associated with the natural history of these disease processes that are progressive and uniformly refractory to medical therapy.

**Method:** The records of 41 patients who underwent a functional hemispherectomy in King Faisal Specialist Hospital & Research Centre were retrospectively analyzed. Demographic data, pathology, MR and PET scan images, and the post operative follow ups were explored.

**Results:** The sex ratio was 13 males and 28 females. (21) Patients were never married, (3) married, (17) not applicable. (13) Patients had no educations, (15) grade 1-6, (3) grade 7-9, (7) not applicable. (31) patients had PET scan, 28 out of them showed hemispheric hypo metabolism and (3) had hypermetabolic activity, MRI of the brain diagnosis included hemisphere atrophy (10), Hemimegalencephaly (10), Cortical Dysplasia, dysgenesis (7), cystic Encephalomalacia, remote infarction (9), Mesiotemporal Sclerosis/Atrophy (3), cavernous angioma (1), Lissencephaly (Agyria) (1).

The histopathology of brain specimens were (17) Cortical Dysplasia/Heterotopia, (9) Sclerosis/Gliosis, (5) Chronic inflammation, (2) Encephalomalacia, (1) Cavernous Angioma, (1) Ganglioglioma, (1) Astrocytoma, (2) not specific and (2) No Data Available. The surgical outcome during the first year was seizure free 46%, excellent outcome 10%.

**Conclusion:** Functional hemispherectomy may allow the patients to lead more independent lives by either cessation or reduced frequency of seizures.

008

#### Demographic profile of patients with epilepsy

*Abdulaziz Alsemari, Salah Baz, Ibrahim Thubaiti, Soad Al Yamani, Aziza Chedrawi, Tareq Abalkhail, Hesham Al Dhalaan, King Faisal Specialist Hospital and Research Centre, Riyadh, KSA*

**Purpose:** Epilepsy is probably the most common neurological disorder in the KSA, and has significant social, psychological and physical consequences. In this presentation, we will outline the demographic profile of our epilepsy cases.

**Method:** Between 1998 and 2009, 3179 demographic data were explored. The data included age, gender, education, employment, driving, marital status and living status.

**Results:** The gender ratio was 56% male and 44% female. 74% right handed and 13% left handed, 13% ambidextrous, 82% is living with their parents. 61% of the adults weren't married. Their education profile demonstrated, (14%) illiterate, (19%) grade 1-6, (39%) grade 7-12, higher education 25%, 3% not applicable. Their employment data for the adults showed 41% never worked, 8% Unemployed, 30% employed, 3% retired, 3% disabled, 10% house wife, 5% not applicable

**Conclusion:** Categorization of Demographic profile in epilepsy patients will lead to improve preventive measures and quality of life. It will also improve knowledge and awareness of the life complexity of epileptic patients and guide health care officials on resolving obstacles associated with this disease.

009

#### Determinants of quality of life among Libyan adult patients with epilepsy

*Alaa Eldin Elsharkawy<sup>a</sup>, Nagat Ibrahim<sup>b</sup>, Ali Sakal<sup>b</sup>*

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**Purpose:** Was to evaluate the determinants of quality of life among Libyan adult patients with epilepsy.

**Methods:** Randomized group of epilepsy patients in the outpatient clinic, have been asked to complete the Arabic translation of QOLIE-31 questionnaire with an additional questions including details of AEDs used, a company treatment, driving a car, 63 adult patients filled the questionnaire and replied the additional questions, their were 47 males and 16 females. Mean age was 28.9 ±11.1years. Statistical analysis: ANOVAs and correlation

analyses were performed to investigate the effect of different factors. Correlation coefficients and stepwise regression analyses were performed using those variables as predictors. SPSS Version 16 was used.

**Results:** Univariate analysis showed that seizure freedom, presence of aura, presence of AED side effects, and having children were significantly correlated with all subscales of QOLIE-31. Furthermore, gender, age, marriage, seizures frequency, numbers of AEDs taken, and medical co-morbidities were significantly correlated with QOL in some subscales. In multivariate analysis, antiepileptic side effect predicts all QOLIE31 subscales. Presence of aura predicts Social Function, Seizure Worry and Medication Effect. Having children predict worse overall health scores. Medical co-morbidities, presence of aura and severity of AEDs side effects are predictors for QOLIE31 total score.

**Conclusion:** These results are similar to the published results. With the exception of the negative impact of having children, this may reflect the financial problem facing epileptic patients and difficulty of obtaining and maintaining employment.





# POSTER ABSTRACTS

## ANTIEPILEPTIC DRUGS

p010

### A paradoxical reaction to levetiracetam in a child with Lennox-Gastaut syndrome: case report and literature review

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Patients with Lennox- Gastaut have often intractable seizures poorly responding to medications. The new generation antiepileptic drugs offered a wider variety of choices for treatment and better hopes for response. However, the worsening of seizures or the appearance of a new onset type of seizures by these new generation medications can be very disappointing and challenging to the physician and to the family. We report a nine years old child with cerebral palsy and secondary Lennox- gastaut syndrome who presented with intractable seizures. She was on therapeutic doses of Valproic acid and had a poor response to Topiramate when added to Valproate. So Topiramate was withdrawn and Leviteracetam was introduced. Her seizures initially consisted of generalized tonic, myoclonic and generalized tonic clonic convulsions. Upon the introduction of Leviteracetam as add-on to valproic acid, the patient started to have worsening of her myoclonic seizures and developed repetitive new onset atonic drops often multiple times per day. One of these episodes was so severe that it resulted in trauma to the face and peri-orbital area with nose fracture. Upon stopping Leviteracetam, the atonic drops resolved and the myoclonic seizures dropped in frequency back to her baseline. Though Leviteracetam was incriminated as precipitating or causing the atonic seizures, a re-challenge with the medication to prove it was ethically unacceptable due to the severe trauma sustained by the patient. As it appears a paradoxical effect of the medication, we do alert the physicians to such a possible reaction in order to prevent further complications.

p011

### Long-term efficacy and tolerability of levetiracetam as add-on therapy in patients with treatment-resistant epilepsy

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**Purpose:** To investigate the long-term efficacy and tolerability of Levetiracetam (LEV) as add-on therapy in Cypriot patients with refractory epilepsy.

**Method:** 58 patients were studied retrospectively for 3 years. 9 patients with generalized epilepsy (GEN) and 49 patients with focal onset (FO) epilepsy received LEV as add-on therapy to 1-4 anti-epileptic drugs (AEDs). We compared the mean seizure frequency for a 3-month period prior to and 36 months after LEV introduction. Subjects had physical, neurological and haematological evaluations at entry and every 6 months during study period.

**Results:** Nine patients (15,5%) became seizure free. Eight patients (13,8%) had seizure reduction by 75% or greater. Three patients (5,2%) had seizure reduction by 50 % or greater. Twenty patients (34,5 %) discontinued LEV treatment for lack of efficacy (20,7%), side-effects (8,6%) or both (5,2%).

Seizure reduction of 50 % was seen in 33,3 % of GEN patients and in 34,7 % of FO patients.

There was a decreased chance of patients responding to LEV as seizure duration, seizure frequency, number of previously used AEDs and number of concomitant AEDs increased.

Most frequently reported side effects were: behavioural side-effects (27,6%), weight changes (13,8%), body pain (10,3%), high cholesterol (10,3%) and sedation (10,3%).

**Conclusion:** Levetiracetam was effective in both focal onset and generalised epilepsy. 34,5% of our patients with refractory epilepsy experienced seizure reduction of 50 % sustained for up to 3 years, with 65,57% of patients continuing treatment.

Levetiracetam was also well tolerated by the majority of patients.

p012

### Does epilepsy affect fetal behavior before birth and are these effects apparent after birth

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Children born to women taking anti-epileptic drugs are an increased risk of congenital malformation and cognitive delay. As the behavior of the fetus is a direct reflection of central nervous system functioning, observation of fetal behavior provides the opportunity to examine the effects to exposure to anti-epileptic drugs.

The aim of this study was to establish if there was a difference in the behavior of the fetus exposed to the anti-epileptic drugs Carbamazepine, Valproate and Lamotrigine compared to a group of non exposed fetuses. A secondary aim was to observe if there were any differences apparent after birth.

The study group consisted of mothers enrolled on the UK Epilepsy and Pregnancy register. A control group of women not taking any medication was recruited.

Fetuses were observed using ultrasound for their spontaneous behavior at 15 & 20 weeks for 30 minutes and habituation at 30 weeks.

Children were assessed at 12 months using the Bayley scales of Infant Development.

The results showed spontaneous behavior was influenced by maternal drug treatment [F (3,49)=2.889, p=0.45].

Post-hoc tests revealed fetuses in the carbamazepine group exhibited significantly more movement than those in the valproate group, [p=0.017] and the control group [p=0.026].

Fetuses exposed to Carbamazepine also took significantly longer to habituate than fetuses of mothers not exposed to Carbamazepine. [F, (3, 54) =3.214, p=0.030].

Motor scale scores were significantly lower in children exposed to Valproate.

Exposure to anti-epileptic drugs exerts an effect on the neurological functioning of the fetus and child.

**p013**

### **Efficacy and safety of vagal nerve stimulation in intractable epilepsy at Riyadh Military Hospital (RMH)**

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**Background:** VNS therapy is an adjunctive treatment for patients with pharmacoresistant epilepsies.

**Objectives** Preliminary evaluation of efficacy and safety of VNS in treatment of patients with intractable epilepsy (IE).

**Method:** Prospective clinical follow-up of patients treated with VNS for IE. Inclusion criteria includes patients with intractable epilepsy i.e. those with more than 1 disabling seizure/month despite adequate treatment with at least 2 years. The patients should at least have failure of 2 AED trials. Each patient should document seizure frequency before VNS implantation and every 3 months after VNS implantation. The safety is measured by number and type of adverse events appeared each visit during the post implantation follow-up. The efficacy is measured by the number and percentage of patients that show significant seizure reduction post implantation.

**Results:** A total of 20 patients with IE are implanted with VNS only. Only 16 patients are included in this review, age 10-20 years with average of onset at 4 years, average epilepsy duration before VNS implantation is 10 years. At the time of VNS implantation 10 patients were on 3 AEDs, 4 patients on 2 AEDs and 2 patients on 4 AEDs. 10 patients had focal epilepsy and 6 patients had generalized epilepsy. The average seizure frequency is one generalized tonic clonic seizure/week before VNS. At latest follow-up, 1 patient (7%) was seizure free and 15 patients (93%) showed significant improvement (>50% seizure reduction). No serious adverse event encountered.

**Conclusions:** VNS is efficient and safe adjunctive antiepileptic therapy intractable epilepsy.

## BASIC MECHANISMS

**p014**

### **Chronic epilepsy result interictally faster heart rate and dysfunction of autonomic cardiac regulation**

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**Purpose:** Dysfunction of the autonomic cardiac regulation is thought to be related to higher mortality in epilepsy patients. We tried to study changes in sympathetic and parasympathetic activities in patients having chronic epilepsies with repetitive generalized tonic-clonic (GTC) seizures.

**Method:** The study included 15 males and 15 females (mean age + S.D.: 33.40 + 12.64 years) who had chronic epilepsies (mean duration + S.D.: 19.01 + 10.22 years) with repetitive GTC seizures according to the classification of International League Against Epilepsy and an equal number of matched healthy control subjects. Lead I electrocardiograms were taken in 5 minutes during an interictal period in the daytime among the epilepsy and control groups. Digital data was converted to frequency-domain analysis of heart rate variability with fast Fourier transformation. Heart rate R-R interval (RR), high frequency (HF; 0.15-0.45 Hz, represent parasympathetic regulation) power, low frequency (LF; 0.04-0.15 Hz, from mixed sympathetic and parasympathetic regulation) power, and LF/(HF+LF) expressed in normalized units (LF%, represent sympathetic regulation) were analyzed and interpreted. Data are presented as mean + standard deviation (S.D.). The difference between two groups was examined using the Student's t-test and evaluated at the 0.05 level of significance.

**Results:** The epilepsy group had significantly lower mean heart rate interval and HF power and significantly higher

LF% ( $P < 0.01$ ). The between-group difference in LF power was insignificant ( $P = 0.17$ ).

**Conclusion:** Patients with chronic epilepsies have faster heart rates during interictal periods and it may be attributed to higher sympathetic and lower parasympathetic activities.

#### p015

### Different effects of phenobarbital on GABA signaling in acute and chronic seizures: a candidate mechanism of the paradoxical actions of Phenobarbital on neonatal seizures

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**Purpose:** The aims of the present study were to determine whether and how the actions of Phenobarbital (PB) shift from anti to pro epileptic in order to provide a rationale for avoiding the use of PB in conditions where it could aggravate seizures

**Method:** We used a convenient in vitro preparation composed of a triple chamber in which the two interconnected intact hippocampi are placed in different compartments and agents applied separately to each side. Typically, a convulsive agent -kainate- is applied to one side to generate seizures and PB to the other either from the start or after a selected number of seizures.

**Results:** We show that when PB applied from the beginning, it reduces seizures but by an unexpected reduction of glutamatergic excitation. In contrast, when applied at later stages when recurrent seizures have propagated and led to the formation of an epileptogenic mirror focus, PB aggravated the severity of seizures. The pro-epileptic actions of PB are mediated by GABA signals. We show that epileptic neurons accumulate chloride because of a loss of function of the chloride co-transporter KCC2 and this converts GABA inhibitory actions to excitatory ones that PB further aggravates.

**Conclusion:** Therefore, the number and severity of seizures generated prior to PB administration determine if PB will alleviate or exacerbate seizures. These observations provide a rationale for the failure of PB to block severe seizures and call for a more restricted use of PB to treat early but not chronic seizures.

#### p016

### Epilepsy course and malformation caused by abnormalities of cortical development

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**Purpose:** To find the correlation between epilepsy and Malformation caused by Abnormalities of Cortical Development (MCD) and the influence on the course of the disease.

**Method:** We compared the data of 36 epilepsy patients with MCD diagnosed during the last 4 years in the University Service of Neurology, UHC Mother Theresa of Tirana-Albania, with a group of 36 patients with epilepsy chosen in a randomized way. We pointed on the age of patients, age of the disease, form and course of epilepsy, EEG data and AEDs treatment used. We classified the MCD according to Barkovich in: heterotopias, ganglioglioma, polymicrogyria, schizencephaly based on the MRI imaging. We used the ILAE criteria for the epilepsy diagnosis.

**Results:** The mean age of the MCD epilepsy group is 33 (16 - 47) years and for the epilepsy group 27 (15 - 32) years. The mean disease duration is 18.2 years for the first and 8.1 years for the second group. 52% of MCD epilepsy group and only 15% of the epilepsy group are under polytherapy. The complex partial and secondary generalized form is more frequent to the first group, and we found more primary generalized cases in the epilepsy group. The EEG findings were more significant to the first group patients.

**Conclusion:** The course of epilepsy is less benign in MCD cases as an underlining cause.

#### p017

### Age and region dependent effects of antiepileptic drugs and bumetanide in immature rat temporal cortex

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**Purpose:** The incidence of seizures is highest in the neonatal period and gradually declines through childhood and then adolescence. It is well known that GABA has excitatory effect before the postnatal day 9 in rodents that contributes to enhanced excitability and ictogenesis.

**Method:** In the present report, we have studied the effects of antiepileptic drugs (AEDs) on 4-aminopyridine induced seizure like events (SLEs) in combined hippocampal-entorhinal cortex slices, which were prepared from 3-18 days old Wistar rats. Field potential recordings were carried out from CA3 and medial entorhinal cortex (ECm). AEDs such as valproic acid, phenobarbital, phenytoin and carbamazepine were used. Possible contribution of depolarizing GABAergic mechanisms was analyzed by applying the inhibitor of NKCC1, bumetanide.

**Results:** The effects of AEDs were dependent on age, region and drug concentrations. Young group (P3-10) was relatively more resistant to AEDs than older group (P14-18). AEDs suppressed SLEs more significantly in ECm than CA3. In contrast, bumetanide were more effective in blocking the SLEs in very young group (P3-5) and less effective in group P6-10, whereas it could not block the SLEs in older group (P14-18). Furthermore in contrast to AEDs, bumetanide suppressed the SLEs significantly in CA3 than those of ECm.

**Conclusion:** We conclude that SLEs in the temporal cortex, in particular in CA3 and less so in the ECm, are resistant to AEDs during the first postnatal week. Depolarizing effects of GABA during the first postnatal week, contributes to seizure susceptibility and to the pharmacoresistance in the early postnatal temporal cortex.

## CLASSIFICATION OF EPILEPSY

p018

**Localizing and lateralizing dilemma of non-lesional temporal lobe epilepsy without hippocampus sclerosis (NLTLE HS-ve): a long-term video-EEG (VEEG), SPECTS and PET studies**

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**Objectives** To evaluate the role of Inter-ictal and Ictal VEEG and Inter-Ictal and Ictal SPECTS and PET in localization and lateralization of the functional epileptogenic lesion in NLTLE HS -ve group.

**Materials and Methods:** A total of 21 patients age ranged from 11 to 48 yrs (Mean + SD: 29.70+10.60, Median age=32 yrs) with intractable TLE with normal MRI were collected. The onset of epilepsy in this group starts from 3 months to 35 yrs (Median onset =2 yrs) and the duration of epilepsy ranged from 2 yrs to 35.5 yrs (Median period =17 yrs). Patients were admitted in our EMU for seizure semiology study, long term VEEG monitoring, functional imaging and MRI study. They were grouped into: Concordance (C), defined as interictal VEEG ictal and Inter-ictal epileptiform discharges coincides with the abnormal perfusion in SPECTS study and altered metabolism in PET study and discordance (DC) where VEEG fails to do so.

**Results:** Group C: 5 out of 21 patients (24%) showed concordance with abnormal functional imaging findings with regards to lateralization and localization. In group DC (n=16): 5 patients did not develop any electroclinical seizures and the rest 11 patients showed diversive functional foci.

**Conclusions:** Using VEEG and functional imaging, only 24% cases of NLTLE HS -ve belongs to Group C. Interictal VEEG plays a major role while Ictal/ interictal VEEG showed 76% discordance and inter-ictal SPECTS identified 62% cases.

p019

**Epilepsy in older people from a tertiary care centre in KSA**

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**Purpose:** Epilepsy in older people is relatively common disorder. The clinical manifestations of seizures, the causes of epilepsy, and the psychosocial impact of the diagnosis can be different in older people than in younger ones. They are more susceptible to drug side effects and co-existing morbidities. Accurate diagnosis and classification of seizure type is crucial to provide appropriate medical or surgical management.

**Method:** Between January 1998 and January 2009, we had 46 Epileptic patients older than 60 years, all patients underwent clinical assessment, EEG, brain imaging and managed with AEDS. 3 patients only underwent epilepsy surgeries after completing a comprehensive epilepsy surgery workup; including video-EEG, classification, brain imaging. Surgical procedures were temporal lobectomy, temporal lesionectomy, and frontal lesionectomy.

**Results:** The 46 patients were classified. (16) Generalized epilepsies, (5 idiopathic generalized and 11 secondary generalized). (23) Patients had focal epilepsies (6 Frontal, 16 Temporal and 1 parietal), 4 patients were diagnosed with non-epileptic seizures and (3) patients were unclassified. First-generation antiepileptic drugs (AEDs) were used more often than new anti-epileptics The histopathology of the 3 patients were (Gangliolioma, Mesiotemporal sclerosis and Cortical dysplasia); the former 2 had excellent outcome rated as Engle class I while the later was rated as Engle class II.

**Conclusion:** Classification is an essential for epilepsy management in elderly patients. The choice of the anti-epileptic has to be based on classification, patient's co-morbidities, tolerance and treating physician's preference. Surgery is an option if data is congruent ensure a satisfactory outcome with the least complications.

p020

**Frontal cognitive functions in patients with juvenile myoclonic epilepsy**

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**Purpose:** Juvenile myoclonic epilepsy (JME) is considered prototype of idiopathic generalized epilepsy (IGE), but there is raising neurophysiological, neuropsychological and anatomical evidence of more prominent focal, dominantly frontal involvement rather than other cortical structures.

**Method:** 17 patients with confident diagnosis of JME, aged 14-37 years (mean 21,3 y.) were studied. Duration of epilepsy was in range of few months to 22 years, mean 7,8 y. Wisconsin Card Sorting Test (WCST) to assess frontal functions was used.

**Results:** Mean number of categories in WCST was insignificantly lower (5,1) than normative (5, 6), but half of the patients achieved 6 categories, while others achieved only 1-3 categories. Mean number of perseverative responses was 22, 7, which exceeds upper normal limit of 19. However, in about half of the patients, number of perseverative responses were lower than 19.

**Conclusion:** Results of our study, although limited in term of number of patients, are in concordance with recent evidences of frontal disturbances in number of patients with JME. However, the proportion of patients that showed focal abnormalities is about half, while other did not, and in our opinion further investigations are needed before general conclusions could be made.

p021

**Cerebral developmental disorders and epilepsy**

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**Purpose:** Cerebral developmental disorders include a wide variety of malformations, and they are associated with varied cerebral malformations are important causes of developmental delay, mental retardation and epilepsy. In the present study six observations of patients with cerebral developmental disorders with clinical, electroencephalography, neuroimaging and evolution characteristics will be reported.

**Methods:** It was a retrospective study including patients with cerebral developmental disorders and epilepsy. All data were recorded from patient's files.

**Results:** Six observations were collected.

Periventricular heterotopia was observed in 3 patients, subcortical band heterotopias in a patient, bilateral parieto-occipital pachygyria in the fifth patient, and right parieto-occipital pachygyria associated to a focal nodular heterotopias in the last patient.

**Conclusion:** Many recent advances have been made to improve our understanding of cerebral developmental disorders, including epilepsy and mental retardation. Identification of some key genetic mutations has especially been useful in shedding light on the pathogenesis of cerebral developmental malformations. Further studies on such genetic mechanisms may eventually provide several focal points for the intervention of medical therapies.

## EEG

p022

**Evaluation of focal EEG findings in Jeavons syndrome (eyelid myoclonia with absences); occipital lobe related generalized epilepsy**

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**Purpose:** Jeavons syndrome (JS) is characterized by eyelid myoclonia, eye closure-induced seizures, EEG paroxysms, and photosensitivity. We studied clinical and EEG findings in JS to determine whether this is generalized or localization related epilepsy.

**Method:** We identified 12 patients who met the diagnostic criteria of Jeavons syndrome. We reviewed and described ictal EEG pattern, interictal abnormalities, demographic, clinical data, and neuroimaging finding.

**Results:** There were generalized epileptiform discharges (EDs) found in 10 out of 12 patients (83%), characterized by diffuse, high voltage spike-wave and 3.5-5 Hz polyspikes or spike and wave complexes. Four patients had focal interictal EDs over right and or left posterior head region. Frequent spiky posterior alpha rhythms were noted in 6 patients (60%). Clinical seizures were described as eyelid fluttering with or without unresponsiveness lasting 1 to 4 seconds. These seizures were induced by eye closure occurred within 0.5 to 3 seconds after closing the eyes in all

patients. Eleven patients had focal ictal EEG onset of brief occipital leading in 0.2 to 2 seconds before generalized spike/polyspike-wave complexes. Nine patients (75%) had mixed focal and generalized ictal EEG onset. All focal ictal onsets were bilateral posterior head region, no lateralized focal onset noted. Isolated generalized ictal onset was seen in only 1 patient.

**Conclusion:** We found ictal EEG with consistently occipital lobe leading generalized discharges and interictal EEG with characteristic alpha activities in JS. We would like to propose JS is "Occipital lobe-related generalized epilepsy".

#### p023

#### A review of our experiences in the pre-surgical evaluation of epileptic patients with invasive EEG recording

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**Purpose:** In this presentation, we will outline how subdural EEG resolved the incongruity of the pre-surgical parameters in some of our refractory epileptic patients as well as the surgical outcome of these cases.

**Method:** 70 patients underwent invasive EEG recording using subdural strips, grids or depth electrodes between 1998 and 2009 to record ictal onset to analyze the epileptogenic zone

**Results:** The epileptogenic zone was determined in 67 patients. Their follow up interval varied from 6 months to 6 years. 44 patients were diagnosed with temporal lobe epilepsy and subsequently had temporal lobectomy and lesionectomy. Out of the forty patients, (35) patients (79%) were seizure free. (4) Patients had (1-5) seizures in two years after the surgery. The histopathology of 29 patients was hippocampal sclerosis, (7) patients with cortical dysplasia/ heterotopias, (2) DNET, (3) ganglioglioma, (1) oligodendroglioma and 2 had normal histopathology. (4) Patients out of the total number of patients had temporal lobectomy with extra temporal lesionectomy. Three patients became seizure free. The histopathology of three was hippocampus sclerosis and extra temporal cortical dysplasia and one patient was with cystic encephalomalacia.

(25) Patients were diagnosed with extra temporal epileptic zone and underwent surgery. Among these patients 16 (64%) became seizure free. (9) Patients histopathologies were cortical dysplasia / heterotopias. (4) Patients were DNET. (2) Ganglioglioma, (1) oligodendroglioma. (2) Astrcytosis with gliosis, (1) multiple subial transaction with no biopsy.

**Conclusion:** subdural grids monitoring is helpful in precisely resolving the incongruity of data and in localizing seizure foci in our patients.

#### p024

#### Evaluating cognitive function in temporal lobe epilepsy patients using duration Mismatch Negativity

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**Purpose:** Mismatch Negativity (MMN) is a well-established objective index of auditory cortex function.

The aim of our study was to examine epilepsy patients' cognitive function using duration MMN.

**Method and Patients:** Participants in our study were 16 patients with temporal lobe epilepsy and 16 age-matched healthy controls. A subset of patients (n=6) did not experience any seizures for two or more years prior to this study, and were considered to be in remission. Participants were instructed to watch silent cartoons during the recording session and to ignore sounds heard through their headphones. Stimuli included 1000 Hz pure-tones differing in duration, such that standard stimuli had a duration of 100msec and deviant stimuli had a duration of 150msec. We recorded EEG using Polymate 1, and evaluated activity from electrodes at Fz and bilateral mastoids. Epochs showing EOG over 100µV were rejected. MMN waveforms were derived by point-by-point subtraction of standard stimulation responses from deviant stimulation responses. Statistical comparisons were conducted via t-test.

**Results:** No significant differences in MMN amplitude were found between epilepsy patients and healthy controls. However, analyses restricted to patients in remission revealed that these patients showed significantly larger amplitudes at Fz than 6 age-matched healthy controls.

**Conclusion:** Results suggest that seizure frequency affects cognitive function.

#### p025

#### EEG findings in juvenile myoclonic epilepsy: a series of 49 patients

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**Introduction:** Focal abnormalities in EEG may lead to misdiagnosis of Juvenile myoclonic epilepsy (JME), a common form of idiopathic generalized epilepsies.

Our aim is to analyze EEG in patients with JME.

**Patients and Methods:** We retrospectively analyzed EEGs of JME patients (ILAE 1989) followed in the Department of Neurology (Razi Hospital Manouba) between July 2002 and August 2009.

Paroxysmic abnormalities were classified in polyspike and slow wave (PSW) discharges, rhythmic or irregular spike and wave complexes (SWC), single spikes and slow waves.

**Results:** We analysed 100 EEG of 49 patients. Mean age was 26.25 years. Thirty patients were female and nineteen male. Mean age of onset was 13.62 years (5-20 years). 88/100 EEG were performed under anti epileptic drug. Six recordings were critical. 28/94 intercritical EEG were normal and 72/94 showed: PSW in 22, rhythmic SWC (2.5-3.5 Hz) in 6, rhythmic SWC (3.5-4.5 Hz) in 11, single spikes in 30, irregular SWC in 30 and slow waves in 25.

Abnormalities were generalized in 66 EEG (91%) with frontal predominance 75%.

**Discussion:** Generalized abnormalities reported in other studies, ranging from 44% to 80%. PSW were classically observed in JME, however, in concordance with Baise-Zong (2006), irregular SWC occurred in most of our patients. Asymmetric generalized and frontal abnormalities may occur in JME. We observed frontal predominance of abnormalities in 75%, and asymmetric topography in 8 % EEG.

**Conclusion:** Focal or asymmetric EEG abnormalities can lead to misdiagnosis of JME as focal epilepsy and to inappropriate treatment. Frontal predominance suggests focal pathophysiology.

p026

#### Electrophysiology in Unverricht- Lundborg disease

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**Purpose:** Unverricht Lundborg disease (ULD) is the most common form of progressive myoclonic epilepsies.

Diagnosis is genetically confirmed. Electrophysiology can be helpful for diagnosis. We describe the electrophysiological features of ULD patients.

**Method:** genetically confirmed ULD patients followed in neurology and electrophysiology department of Razi Hospital between 2002 and 2009 were included. We analyzed clinical exam, EEG, EMG, visual and somatosensory evoked potentials (VEP, SEP) data

**Results:** 17 patients were included (10 women and 7 men). Mean age was 36 years. Mean age at onset was 12 years. All had myoclonus. Generalized tonic-clonic seizures (GTCS) were observed in 14/17. Cerebellar signs were observed in 8 patients. None had mental retardation. In 15/17 EEG, posterior rhythm (PR) was disorganized in 7 patients. Generalized spike and wave discharges (GSWD) were observed in 8 patients. PR was improved in 4 patients with appropriate antiepileptic drug. In 10/17 patients EMG showed: positive myoclonus in 6 and negative myoclonus in 2. C reflex was present in 6 patients. M response was more ample in the 2 patients with severe myoclonus. "Giant" SEP were detected in 3 /11 patients and "giant" VPE in 1/11.

**Conclusion:** In ULD, concomitant EEG abnormalities and C reflex reflect the cortical hyper excitability. C reflex can be predictive of myoclonic status epilepticus or GTCS when its amplitude is higher than M response amplitude. PE abnormalities are rare. Unlike to other PME, electrophysiological profile of ULD is based on EEG and EMG.

p027

#### Comparing Mismatch Negativity responses to pure-tone vs. vowel-speech changes in temporal lobe epilepsy patients

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**Purpose:** Mismatch Negativity (MMN) is an event related potential (ERP) thought to be generated mainly in the temporal lobe. We investigated MMN in response to pure-tone and vowel-speech changes in temporal lobe epilepsy (TLE) patients.

**Methods:** We examined 18 patients with TLE (11 male, 20-50 years of age) and 18 age-matched healthy participants. TLE patients were divided into two groups: remission (n=8; seizure-free for 2+ years prior to study), and non-remission (n=10; at least one seizure in the 2 years prior to study). In vowel-speech MMN, 'à' and 'ò' were

used as standard and deviant stimuli, respectively; in pure-tone MMN, standard and deviant stimuli were 1000 Hz and 1050 Hz, respectively. MMN was recorded from Fz, Cz and bilateral mastoids. Participants were instructed to watch a DVD and not to pay attention to sounds heard through headphones. We evaluated peak and mean amplitude at each electrode 50-200 ms following stimulus onset. ERP parameters were compared via paired t-test and multiple regression analyses.

**Results:** In vowel-speech stimulation, patients in remission showed higher amplitudes than healthy participants. Furthermore, there was a significant negative correlation between seizure frequency and amplitude among TLE patients. However, for pure-tone stimulation, all TLE patients showed significantly greater amplitude than healthy participants, and no correlation was found between seizure frequency and amplitude.

**Conclusion:** Vowel-speech and pure-tone MMN showed different changes in TLE patients. Findings suggest that vowel-speech and pure-tone MMN may reflect different temporal lobe functions with respect to pre-attentive processing.

**p028**

### The role of electroencephalography in coma

*Shireen Qureshi,  
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Coma as altered state of consciousness is characterized by various EEG changes well recognized with variable presentations and possible etiologies.

Some of distinct patterns recognized in comatose patients included 'Triphasic waves, alpha rhythm, intermittent rhythmic delta activity, periodic patterns, etc'.

EEG recordings in comatose states provide objective measures of brain dysfunction, etiology, localization of structural lesions, depth of coma, distinguishing coma from subclinical seizures and continuous monitoring in intensive care units.

Brain death defined as 'the irreversible loss of function of the brain, including the brainstem' has set clinical signs. However, these may be influenced by conditions such as hypothermia, drug intoxication and several metabolic and endocrine dysfunction.

In a substantial proportion of patients who are clinically brain dead, scalp recordings show electrocerebral inactivity when set recording technical settings are applied.

In this review, I will present various EEG correlates with comatose states and established electrographic criteria in brain death recordings.

**p029**

### Source localization in electroencephalography

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Cerebral sources of electrographic (EEG) potentials are three dimensional volumes of cortex. These sources produce three dimensional potential fields within the brain. From the surface of the scalp, these can be recorded as two-dimensional fields of time-varying voltage. In order to localize and characterize cortical generators of the EEG, the physical and functional factors that determine the voltage fields that these sources produce must be appreciated. Electrical activity of approximately 10<sup>8</sup> neurons in a cortical area of several square centimeters, rather than a single cell or cortical volume. A single voltage age field maximum cannot be used to define the location or orientation of a cortical EEG generator. In all instances, except for a purely radial source, the EEG field maxima are displaced from a position directly above it. The location of both field maxima, negative and positive and their relative strengths must be taken into consideration and their location to provide easiest and most accurate assessments of source orientation.

Polarity conventions are determined by principle of differential amplifiers designated as inputs with pen deflections determining electronegativity of fields and help localization. Display conventions in different montages adds to potential localization.

Digital EEG has great advantage when used in set standard to help reformatting montages and added benefit in source localization.

In this presentation I'll present different polarity conventions in various montages and its role in localization with an insight into the new digital EEG system in this field.

## EPILEPSY SURGERY

**p030**

### CNS tumors and refractory epilepsy: surgery outcome in a tertiary care centre

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**Purpose:** Brain tumors are a common cause of epilepsy. Direct Surgical intervention for CNS tumors was considered the best choice in managing most of the CNS tumors with epilepsy, however seizure freedom is not guaranteed. Nevertheless via the advanced epilepsy surgery techniques, the achievements of seizure freedom to patients who have seizures associated with benign brain tumors are very likely.

**Method:** Between January 1998 and January 2009, we had 159 Epileptic patients with CNS tumors, out of them 80 patients underwent variable epilepsy surgeries. The workup included: admission to the Epilepsy Monitoring Unit (EMU) for long term monitoring, subdural recording, MRI, PET scan, Neuropsychological assessment, WADA test, and Intra operative Neurophysiologic Monitoring which included; Electrocorticography (ECoG), motor, sensory and language mapping.

**Results:** The sex ratio was 45 males and 35 females. The most common location of the tumor was in the temporal lobe 54% (43), frontal lobe 31% (25), parietal lobe 9% (7), parieto-occipital 4% (3), 1 fronto-parietal and 1 hypothalamus. The histopathology were ganglioglioma 33%, DNET 25%, oligodendroglioma 15%, astrocytoma 8%, cortical dysplasia 8%, meningioma 4% and others 7%. Out of 80 patients, 71 came for follow up visits post operatively; their first year surgical outcome were (43) patients 61% seizure free, (10) patients 15% excellent outcome.

**Conclusion:** Pre operative comprehensive epilepsy surgery assessment gives a higher chance of achieving seizure freedom in patients with tumor and refractory epilepsy.

### p031

#### Anatomo-functional organization of the insular cortex in epileptic humans: study by intracerebrale electrical stimulations

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**Purpose:** Few data exist from human electrophysiological studies performed in vivo by direct electrical stimulation of the insular cortex. The determination of clinical signs in the relationship with the participation of the insula permits to analysis with more accuracy the electro-clinical data.

**Method:** We undertook a retrospective work concerning the anatomo-functional organization of the insula by the intracerebral electrical stimulations during explorations Stereo-Electro-Encéphalo-Graphics using an oblique approach. 25 patients with epilepsy in whom at least one electrode was used to explore the insula were selected for this study. Targeting of the insular cortex was performed using a 3D cerebral presurgical T1- MRI scan computed with stereotactic software. a postoperative contrast enhanced 3D CT scan was fused with the preoperative 3D MRI in the same stereotactic referenced system. We could then identify its cortical location and anatomical position in reference to gyri.

**Results:** Our results were discussed in terms of their anatomical and electrical significances. The data suggest an organization of the insular cortex in terms of the sulci and gyri much more than a simple distinction between anterior and posterior insula. We have been able to identify the areas in which direct electrical stimulation causes of language disorders, painful phenomena or sensory-motor responses. For the latter, a somatotopy has been identified.

**Conclusion:** The large sampling authorized by this exploration using an oblique approach allows us to develop a first drawing of the anatomo-functional insular cortex organization in terms of its sulcal and gyral anatomy.

### p032

#### Temporal pole disconnection for intractable epilepsy in an intraoperative MRI setup

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**Purpose:** To evaluate the minimal invasive technique of temporal disconnection, We describe 2 cases that underwent temporal disconnection with amygdalohippocampectomy. The first patient is a 24 year old right handed male nurse, that had electroencephalogram (EEG) proven left temporal lobe epilepsy (TLE) for 16 years and left mesial temporal sclerosis. The second patient is 33-Y- old Right-handed female who had EEG proven right (TLE) temporetemporal lobe epilepsy for 24 years and a constant lesion seen in the right amygdala. technique

**Method:** Through a small temporal craniotomy, both patient had neuronavigation guided, amygdalohippocampectomy (including the lesions). In the first patient intraoperative electrocortecography was done at that point and the temporal pole was firing hence we decided to disconnect the temporal lobe. In the second patient, there was a relatively large temporal pole veins hence we decided to not remove the temporal pole and just disconnect it. Both had intraoperative MRI (iMRI) to prove resection and disconnection.

**Results:** Both patients returned home within a few days post operatively. The first patient is seizure free 8 months post OP and is a practicing nurse. The second patient is only 2 months post op and is doing very well.

**Conclusion:** Temporal disconnection technique is a minimally invasive technique as it involves less brain tissue resection and may potentially decrease risk of affecting optic radiation. iMRI is a useful tool to evaluate the amount of resection and to prove the adequacy of disconnection.

**p033**

#### Endoscopic assisted functional hemispherotomy for intractable epilepsy: a technical report

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**Background:** Hemispherectomy, for unilateral hemispheric intractable epilepsy has evolved over the past few decades. Three decades ago, functional hemispherotomy was introduced by Rasmussen and is currently preferred over anatomical hemispherectomy. Endoscopic surgery has recently been introduced for disconnection techniques.

**Purpose:** To validate the usefulness and minimal invasiveness of endoscopic assisted hemispherotomy in intractable epilepsy surgery.

**Clinical findings:** A 19-year-old girl presented with severe intractable catastrophic epilepsy, right hemiplegia and severe mental handicap after a severe head injury sustained in a motor vehicle accident 6 years ago. Seizures were generalized tonic-clonic and absence seizures. She developed post traumatic brain atrophy; her ventricles were quite generous to the extent that we decided to use a minimally invasive technique by doing an endoscopic assisted hemispherotomy.

**Methods:** Through a 2 by 2 centimeter temporal-parietal craniotomy, endoscopic assisted resection was performed by two surgeons (AJS, AAA) with the help of neuro-navigation. The rigid endoscope along with the ultrasonic aspirator were introduced through the temporal horn after the temporal resection. Central resection, insular decortication, corpus callosum, anterior and posterior commissures disconnection were performed. Neuro-navigation was particularly helpful for identifying midline structures.

**Results:** On 6 months follow up there was more than 80% reduction in her seizures. No serious complications and no change in her pre-operative status except for significant improvement in her level of consciousness.

**Conclusion:** Endoscopic assisted functional hemispherotomy is a minimally invasive and useful approach in selected patients with large ventricles.

**p034**

#### Invasive monitoring in intractable epilepsy

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**Purpose:** Resective epilepsy surgery is an essential treatment in several intractable epilepsies. In most instances, surgery can be done based on confluence of non-invasive data, such as video-EEG findings and semiology, MRI, PET, SPECT, and others. Concordance of data pointing to the epileptic focus may not be achieved in all patients, however, necessitating invasive monitoring. The objective of our paper is to describe various invasive monitoring techniques and their indications in patients with intractable epilepsy.

**Method:** We review the indications and techniques of invasive monitoring for intractable epilepsy, along with illustrative cases demonstrating different modalities of monitoring, including navigation-assisted depth electrode placement. We also describe the usefulness of these techniques, and explain possible pitfalls and complications based on our experience at the American University of Beirut Medical Center.

**Results and Conclusion:** Invasive monitoring may be performed to further define the epileptogenic region of interest, and its relationship to eloquent cortex, after establishing a working hypothesis. Enough non-invasive data is necessary, however, in forming the hypothesis and to ensure optimal results. Invasive monitoring may include strip electrodes, grids, or stereotactically placed depth electrodes. These may be done with a relatively low complication rate.

**p035**

#### A look at temporal lobe epilepsy surgery experience in a tertiary care centre in KSA

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**Aim:** Temporal lobe epilepsy (TLE) is the commonest focal epilepsy and usually refractory to medical management, and has a satisfactory surgical outcome; if the clinical, electrophysiological, radiological and neuropsychology

assessment are congruent.

**Method:** 295 patients were reviewed between 1998-2009. All patients had complete pre-operative assessment including: video EEG, MRI, PET and neuropsychological testing; and in some, intracranial EEG recording, WADA test, sensory, motor and language mapping by cortical stimulation were required.

**Results:** Risk factors were 25% Head trauma and 25% positive family history, followed by febrile convulsions 20%. 252 MRI findings were localized to the temporal lobes displaying radiological diagnosis of mesiotemporal sclerosis/ atrophy in 174 scan and tumors in 43 scan. 65 patients required subdural recording to specifically localize the epileptic focus. 31 patients had a redo surgery for better seizure control. Histopathology showed: sclerosis/ gliosis 43%, cortical dysplasia 24%, Ganglioglioma 9% and DNET 4%. Dual pathology was found in 27 patients. 1 year follow up disclosed 76% Engle class I outcome, 3% Engle class II outcome and 10% Engle class III outcome with >10 seizure /year.

**Conclusion:** Outcomes following temporal lobe surgery for refractory cases have markedly improved our results in the management of epilepsy. Comprehensive pre-surgical assessment is mandatory to ensure a satisfactory outcome.

### p036

#### Vagus nerve stimulation as an adjunctive therapy for refractory epilepsy

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**Purpose:** Vagus nerve stimulation (VNS) is used increasingly as adjunctive therapy for refractory epilepsy. However the role of VNS in treating refractory epilepsy is still under revision. We report our experience with VNS in patients with refractory epilepsy.

**Method:** 13 patients with refractory epilepsy were considered for VNS after extensive surgical evaluation and proven not surgical candidates for epilepsy surgery. We reviewed their clinical classifications, seizure types, seizure frequency, video EEG, MRI, PET scan, neuropsychology assessment, and response to VNS in terms of seizure frequency.

**Results:** 31% of patients responded to VNS with 50% seizure frequency reduction. 15% were seizure free and 31% had the same seizure frequency. Patients with Lennox-Gastaut syndrome and generalized epilepsy had a higher response rate. 2 of our patients had normal cognitive function while the remaining showed a variable degree of abnormal cognitive function. MRI and PET scans were normal in 38% of cases; the abnormal MRI findings comprised of encephalomalacia, atrophy, cortical dysgenesis, and tuberous sclerosis. PET scan results were 5 normal, 7 hypometabolism 1 hypermetabolism. EEG showed evidence of generalized or bilateral synchronous epileptiform potentials in 62% and multi-focal spikes in 38%

**Conclusion:** Seizure freedom may be achieved in few cases with VNS but the majority only reaches some amelioration in seizure frequency to a variable degree that may impact patient's life positively to a degree. No response may also be seen in almost 1/3 of patients. Larger number of patients is needed to have an accurate estimate through a multicenter collaboration.

### p037

#### Unusual left temporal lobe language representation in a patient with temporal lobe epilepsy

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**Purpose:** To present a unique case of atypical language representation in the dominant left temporal lobe.

**Methods:** We report the results of a language map using electrocortical stimulation in a patient with left hemispheric language dominance. This patient was admitted for chronic intractable left mesial temporal lobe epilepsy that began at an early age.

**Results:** Two language areas were identified in the left temporal lobe. One of these areas is located in the posterior region of the superior temporal gyrus and the other one is found anteriorly, on the superior and middle temporal gyri 2 cm from the temporal tip.

**Conclusion:** These data suggest that more than one left temporal lobe language area is possible and that language cortex can be found in the anterior temporal lobe even at 2cm from the temporal tip. It is assumed that early onset of seizures in the left mesial temporal lobe and long-lasting epilepsy could play a role in this atypical language development.

### p038

#### Temporal lobe epilepsy surgery: neurophysiologic markers and strategy

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**Purpose:** The study is aimed at optimizing diagnosis-making and adequate surgical treatment of locally conditioned drug-resistant temporal epilepsy basing on modern technologies in neurophysiology and neuroimaging.

**Method:** EEG-monitoring with topographic brain mapping, ECoG, SEEG via deep electrodes were performed according to ILAE recommendations. Electroclinical examination and surgical treatment results in over 350 drug-resistant traumatic temporal epilepsy patients aged 18-56 were analyzed.

**Results:** Basing on interhemispheric interrelations three clinical-neurophysiologic forms of temporal epilepsy reflecting the dynamics of epileptogenesis at different stages of the disease were depicted: monotemporal, bitemporal and "intermediate" (monotemporal with initial mirror focus forming). Finding out an "intermediate" type of pathology helps reconsider the strategy and timing of surgical treatment.

In the clinics of temporal epilepsy certain regularities of epileptogenesis were revealed at the levels of morphofunctional organization of temporal epileptic foci and EEG-ECoG-SEEG analysis. Isolated temporal neocortical (4%) or limbic (17%) foci were a rare finding, a major group of our series (79%) comprised the patients with combined temporal neocortical and deep limbic structure damage (hippocampus, amygdala), thus optimizing the strategy of open surgical treatment (anterior temporal lobectomy). SEEG data demonstrated extratemporal structure routes of epileptization: hippocampus and amygdala entered the Papez circle system via anterior thalamic nuclei, which should be considered during stereotaxic intervention.

**Conclusion:** The presented data demonstrated that temporal lobe epilepsy is rather an intricate form having its own anatomico-clinico-electrophysiologic variants and topico-diagnostic peculiarities requiring consideration both to study into the mechanisms of epileptogenesis, and to work out the strategy of surgical treatment of epilepsy.

p039

#### Current status and pharmacoeconomics of epilepsy surgery in developing countries like India

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**Purpose:** To describe the current status and pharmacoeconomics of epilepsy surgery in developing countries like India.

**Method:** A survey was conducted through email to different institutes engaged in epilepsy surgery to calculate the Cost of investigations, medical and surgical treatment for epilepsy.

**Results:** As per the recent census of Government of India, the population of India is more than one billion. There are only 1000 neurologists to serve this population. At any given time there are around 10 million epileptics in India. Approximately two million epileptics require surgery for their uncontrolled epilepsy. If a person with epilepsy undergoes for workup for epilepsy surgery, the expenses involved on investigations like reassessment by conventional EEG, epilepsy protocol MRI brain, SPECT, Video-EEG, Neuro-psychological analysis etc will be approximately US\$ 1000. The cost of epilepsy surgery or implantation of Vagus Nerve stimulator is likely to be around US\$ 6000. If we sum up expenses in all categories at a minimum cost level, it is likely to be US\$ 780 India is classified in the category of Low income group by WHO ranked 160th in the world and per capita income by the Atlas method for India is US\$ 530.

**Conclusion:** In the absence of comprehensive medical insurance scheme and because of low PCI, to afford epilepsy surgery by an average Indian is literally is out of reach for a common man.

p040

#### Epilepsy surgery in Tunisia

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**Purpose:** To describe the first Tunisian epilepsy surgery program establishment and to emphasize on its originality that is an exchange and surgery decision taken by two Mediterranean neurophysiological teams, via the Internet.

**Methods:** Patients with mesial temporal lobe epilepsy (MTLE) and refractory to antiepileptic drugs were included. A noninvasive protocol evaluation including a detailed history, neurological evaluation, brain imaging, scalp video-EEG monitoring and neuropsychological evaluation were performed. The different findings were discussed between the Neurophysiological Department of Charles Nicolle Hospital of Tunis and Rouen through the EUMEDCONNECT Internet network project. If cases of concordance of clinical, neuropsychological, neuroimaging data and video-EEG recordings, surgery was indicated.

**Results:** 15 patients (7 women and 8 men) with mean age of 30 years were included. 10 patients had right hippocampal sclerosis (HS) and 5 had left HS. MRI findings were concordant with the ictal EEG in 12 patients. One patient had bitemporal ictal EEG abnormalities and right HS on MRI. One patient had contralateral ictal clinical and

EEG patterns to the side of HS. One patient had temporal 'plus' epilepsy. Surgery was performed in 10 cases. After surgery, all patients are seizure free, with no operative mortality or major surgery complications.

**Conclusion:** Our model of twin affiliations between advanced epilepsy surgery programs in a developed country and starting programs in a developing country, using Internet technology, can be a model for collaboration in other countries

p041

#### Surgery for mesial temporal epilepsy

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**Purpose:** The temporal lobe is notorious for its high epileptogenic potential, and may be affected by various pathologies that cause intractable epilepsy. The mesial structures, namely the amygdala and hippocampus, may be affected by mesial temporal sclerosis or other pathologies, such as tumors and infections. The purpose of our review is to discuss various pathologies that may affect the mesial temporal structures, and their surgical management and its success in alleviating the intractable seizures.

**Method:** We review our experience in the surgical management of 18 patients harboring various pathologies affecting the mesial temporal structures and presenting with intractable seizures. We review the pre-operative work up including video-EEG monitoring, invasive monitoring, and other tests performed to localize and lateralize the temporal epileptogenic area. The surgical technique is briefly described, along with the post-operative outcome, seizure freedom rate, and complication rate.

**Results:** Of the 18 operated patients, mesial temporal sclerosis affected 12 patients. The rest had neoplastic lesions with one patient having focal spongiosis and mesial sclerosis. All the patients had excellent seizure control. None suffered major morbidity

**Conclusion:** Surgery for various pathologies affecting the mesial temporal lobe is associated with high seizure freedom rate, and may be done with minimal complications and minimal cognitive deficits.

p042

#### Moroccan experience in epilepsy surgery

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**Purpose:** 50 patients with pharmaco-resistant partial epilepsy were operated, from 2005 to 2009 in our hospital.

**Method:** Only non invasive methods were used (clinical data, EEG, Video-EEG, MRI and neuropsychological test).

**Results:** Our results will be discussed and detailed.

p043

#### Epilepsy surgery: Jordanian experience

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Epilepsy surgery in Jordan was started in 1993. Functional epilepsy surgery program was establish , with interdisciplinary team ( including Clinical neurologist adult and pediatric Neurologist , Neurophysiologist, Neuroradiologist, Psychiatrists and Neuroanesthesiologist,) all candidate of patients for epilepsy surgery are discussed by the team. We treat patients from other countries of the region in addition to Jordanian patients. Preoperative protocol include: Clinical evaluation, psychiatric study, MRI for epilepsy, Standard interictal EEG, video EEG and some cases subdural electrodes. Intraoperative monitoring include: ECoG, cortical stimulator and awake anesthesia .We use the following variety of surgical technique according the indication; temporal lobectomy, frontal lobectomy, lesionectomy, callosotomy, subpial resection, functional hemispherectomy and VNS. Our results of are similar to the results published in the western countries. Jordanian experience can be extended to developing countries in the region discussion and conclusions will be exposing in the presentation.

## PAEDIATRIC EPILEPSY

p044

#### Contribution of the cerebral imagery to the etiologic diagnosis of child epilepsy

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**Introduction:** The imagery by magnetic resonance (MRI) is the best imaging modality in exploration of epilepsy.  
**Patients and Methods:** We report a retrospective study over 8 year's period (2000 -2007) of 140 epileptic children and explored by cerebral imaging.

**Results:** The cerebral MRI was carried out among 88 patients; the cerebral TDM was carried out among 67 patients. The cerebral MRI was carried out in a concomitant way with the TDM among 15 patients. The cerebral imagery was normal in 41,5% of the cases and it showed anomalies in 58,5% of the cases. The anoxo-ischaemic lesions were the most frequent anomalies (22,8%) of the cases. Cerebral malformations (18cases) malformations of the cortical development (10 cases), an agenesis or hypoplasia of the callous body in 6 cases and a Dandy Walker malformation in 2 cases. A syndrome neuro-cutaneous was diagnosed among 2 patients: a sclerosis tuberosa of Bournonville (1case) and a syndrome of Sturge Weber (1case). Lesions evoking an innate error of the metabolism (10%) with lesions of leucodystrophy (11 cases), cerebral atrophy in 2 cases and an attack of the gray cores in one case. The other found lesions were: tumoral lesions (2 cases), cerebral vascular accident (2 cases), cranial traumatism (1 case), CMV foetopathy (1 case) and a hydrocéphalie (9 cases).

**Conclusion:** Being much more sensitive than computed tomography magnetic resonance imaging is the technique of choice to identify an underlying cause in symptomatic epilepsy. Clinical data are mandatory in order to direct a proper MRI investigation.

p045

#### Childhood absence: an electro-clinical study

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**Purpose:** Absence is an idiopathic generalized epilepsy with an onset at a variable ages. The outcome is depending on different parameters like especially the age of onset and the association of motor signs.

**Methods:** It is a retrospective study concerning 32 children with typical absence epilepsy from 263 pediatric epilepsies. We distinguish 2 groups aged under (G1) and above (G2) 4 years having all a clinical and an EEG exam.

**Results:** The onset of symptoms was in 32% under 4 years, in 45% between 4-8 years and in 23% above 8 years. The F/M ratio was 1.66. Absences alone occurred in 94%. Family history was positive for epilepsy in 22 % and for febrile convulsions in 9%. Simple absences were more frequent (56%) in G2. Eyelid myoclonia occurred in 40% in G1 (vs 25%). All patients showed bilateral, synchronous spike-wave discharges from 2.5 to 4 c/s. Lateralized spikes, spike-slow wave complexes were found in 4%. Monotherapy with sodium valproate was successful in 77% of patients with better results in G1 (83% vs 62%). Only 23% were not fully controlled either on monotherapy or polytherapy. Later, scholar problems were seen in 83% of patients (67% vs 92%) and 11% has presented behavior disabilities (17% vs 8%).

**Conclusion:** The prognosis of absence epilepsy depend of the age of beginning, in fact a negative response to treatment was noted in 17% of G1 (vs 38% in G2). The cognitif and behavioral outcome were also different in the 2 groups.

p046

#### Intractable epilepsy associated with lissencephaly in typical twins: clinical, and imaging aspects

*Haydar Babikir, and Twin Infants, Gezira University, Wad Medani, Sudan*

Epilepsy is the most common neurological disorder affecting young people. The WHO stated that over 50 million people worldwide suffer from epilepsy. Its burden for the year 2000 accounts for approximately 0.5% of the whole burden of diseases in the world. The prevalence of the disease worldwide in the year 2004 was 8.2 per 1000 of the general population. Whereas its incidence is approximately 0.5-1.0 per 1000 of the general population. The aetiologies are multiple and most cases are classified as "cryptogenetic". The development of the cerebral cortex progresses through defined stages including neural proliferation, neuroblast migration and neuronal differentiation. Malformations of neuronal migration such as lissencephaly (agyria-pachygyria spectrum) are important differential diagnosis to be considered in the evaluation of intractable epilepsy. Though the underlying causative factors which govern their development are many and varied, genetic factors have been found to be contributory in a few forms of these disorders. An X-linked association with lissencephaly has recently been discovered and there are few families described till now with this entity. We reported here infant twins both are males. They manifested intractable seizures, severe psychomotor retardation, growth failure and a family pedigree suggestive of an X-lined pattern of inheritance.

p047

**West syndrome: aetiologies management and outcome**

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**Purpose:** The goal of this retrospective study was to review the causes, treatments and outcome of WS.

**Method:** Twenty-six children diagnosed with WS in our department of paediatrics between January 1995 and August 2009 were included. WS was classified in two groups, symptomatic and cryptogenic according to the ILAE classification of the epilepsies. Sex, age at onset of spasms, family history of epilepsy, lead-time to clinical diagnostic, treatment and outcome were recorded.

**Results:** There were 14 boys and 12 girls. All children had flexor spasms. Aetiology of WS was identified in 21 children and five remained cryptogenic. The first-line treatment was vigabatrin in the majority of children. The cessation of seizures was noted in nine patients of whom seven responded after two weeks of treatment. Partial amelioration was noted in eight cases and six children were continued to present spasms. The association of ACTH or corticosteroid to vigabatrin permitted the cessation of spasms in seven other patients. 10 patients continued to present spasms or other types of seizures were treated by polytherapy. The average follow-up was 1 year and 10 months (range 6 months -10 years). Only 4 children had a normal psychomotor development (all having WS cryptogenic), seven had moderate delay and 15 kept important mental and motor delay. All sequels were noted in WS symptomatic group.

**Conclusion:** The optimal treatment strategy remains unknown in WS. In our study, despite treatment only 15% had a normal psychomotor development. The cognitive outcome of children with WS remains poor especially in symptomatic WS.

p048

**Dravet syndrome: a study of 10 patients**

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**Purpose:** We analyzed the electroclinical features, treatment and evolution of patients with Dravet syndrome.

**Method:** We evaluated the clinical records of 10 patients that met the diagnostic criteria of DS according to the ILEA classification. These patients were seen at our department between January 1994 and December 2006. We analyzed gender, family and personal history, age at onset of seizures, seizure semeiology, clinical evolution and treatment. EEG, brain CT scan and MRI were performed in all cases.

**Results:** Seven male and three female patients met the diagnostic criteria of DS. The mean age at onset was four months and 17 days and in all patients the seizures were associated with febrile illness. Fever was related to viral infection in eight cases and vaccination in two cases. The mean duration of the first seizure was 22 minutes. The first relapse of seizure was noted in average of six weeks. Generalized tonico-clonic seizures were found in all cases and myoclonic seizures in eight patients. These myoclonic seizures appeared between the ages of 1 and 5,7 years, with an average of 1 year and 7 months. After the second year of life, the EEGs showed different manifestations according to the type of seizures. The seizures were difficult to control with AEDs in all patients. During the evolution; all patients presented some degree of mental delay

**Conclusion:** The present study confirms the severity and intractability of the seizures in DS. New AED (Stiripentol, Topiramate.) can help patricians to reduce frequency of seizures.

p049

**Status epilepticus in children: aetiologies management and outcome**

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**Purpose:** To study aetiologies, treatments, and outcome of children with CSE

**Method:** The inclusion criteria were: prolonged convulsive seizure episode with duration of > 30 minutes or recurrent seizures without interictal resumption of baseline central nervous system function, age older than 1 month and younger than 14years. All available data of each convulsive seizure episode were retrospectively collected and analyzed.

**Results:** 107 cases of first CSE were identified in the period of the study: 88 patients were admitted in emergency for CSE and 19 patients presented a CSE in our paediatric department. The aetiologies were: febrile SE in 20 cases, acute symptomatic SE in 33 cases, remote symptomatic SE in 13 cases, progressive encephalopathy in 16 cases and idiopathic SE in 25 cases. Prehospital treatment was given for 57 patients. Rectal diazepam and phenobarbitone

were the most commonly given treatments. After rectal diazepam seizures were stopped in 7 cases, 56 patients needed phenobarbitone, 23 were treated by continuous intravenous clonazepam and 19 needed both clonazepam and phenobarbitone. Only four patients were treated by thiopentone and mechanical ventilation. Eight patients were died (5 acute symptomatic SE, 3 progressives' encephalopathy and one febrile SE). Recurrences of SE were noted in 20 patients (remote symptomatic SE and idiopathic SE with  $p = 0.005$ ). Seven children kept mental delay after acute symptomatic SE.

**Conclusion:** Status epilepticus requires early recognition and treatment. Prehospital treatment is a useful strategy for terminating incipient seizures.

p050

#### Seizure characteristics of early myoclonic encephalopathy

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**Purpose:** Early (neonatal) myoclonic encephalopathy (EME) is one of the most malignant epilepsy syndromes. This form of epileptic encephalopathy is characterized by debut at the first weeks of life, fragmentary erratic myoclonus and suppression-burst pattern on the EEG. The purpose of presented research was studying the clinical characteristics and seizures types in children with EME.

**Method:** Were investigated 12 children with EME - 7 girls and 5 boys within the age rate from 4 month till 5 years. The study was done in child neurology department and intensive care unit of Russian Children Clinical Hospital, Moscow at the period 2004-2009. Video-EEG monitoring was done with video-EEG monitoring system "Encephalan-Video" RM-19/26 ("Medicom MTD", Taganrog, Russia).

**Results:** At presented population of infants with EME were observed: fragmentary erratic myoclonus - in all 12 patients (100%), bilateral myoclonic seizures - also in all 12 patients (100%), tonic spasms - at 10 (83,3%) of infants, focal tonic versive seizures - at 7 (58,3%), hemicolulsive seizures were noted at 4 (33,3%), generalized clonic seizures - at 3 (25%), pharyngo-oral seizures - at 3 (25%), seizures with apnoe - at 3 (25%). At all 12 children were observed suppression-burst pattern on the EEG and arrest of motor and cognitive development.

**Conclusion:** Obligate seizure types in EME are fragmentary erratic myoclonus and bilateral myoclonic seizures and frequent seizure types are tonic spasms and focal tonic versive seizures. The most dangerous are seizures apnoe with cyanosis which are observed in one quarter of infants with EME.

p051

#### Risk for discontinuation of antiepileptic drug therapy in children with focal symptomatic epilepsy and cerebral palsy

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Decision to withdraw of antiepileptic drugs must be based on a balanced view of the overall risk of seizure relapse, the factors most likely to affect that risk, and the medical, emotional and social implications of antiepileptic drug treatment. Its hard to decide to start discontinuation of antiepileptic drug treatment in children with cerebral palsy, even its accepted children with cerebral palsy and epilepsy have essentially the same risk for seizure relapse after antiepileptic drug treatment discontinuation when compared with other epileptic children. Polytherapy necessary for reaching stable epileptic seizure control with (RR 1,39), and politherapy at the time of starting antiepileptic drugs tapering, (RR 1,62) are factor we could identify that significantly increases the risk of relapse after discontinuation of antiepileptic drug treatment in children with cerebral palsy nad epilepsy. Discontinuation of AEDs in children with epilepsy and cerebral palsy who have seizure remission periods of 3 or more, using one antiepileptic drug can, and should be, practiced when possible.

p052

#### Clinical and EEG correlations in patients with fixation-off sensitivity

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**Purpose:** To define the spectrum of epilepsies that can be associated with fixation-off sensitivity (FOS).

**Method:** Clinical and video-EEG data of patients with FOS were reviewed over the last five years.

**Results:** From April 2004 to September 2009, Six patients had one or more video-EEG's with FOS. Five patients had occipital paroxysms. Two patients were diagnosed with idiopathic childhood occipital epilepsy of Gastaut (ICOE-G), one patient with Panayiotopoulos syndrome (PS), one patient with idiopathic generalized epilepsy (IGE) with photosensitivity and two patients with atypical presentations.

**Conclusion:** FOS is reflex epilepsy syndrome which is precipitated by elimination of central vision. Routine EEG monitoring for documenting FOS should be offered to selected patients.

**p053**

#### Supervision catamnesis of children with febrile convulsions

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**Purpose:** Studying of materials screening study the researches spent in regional polyclinic of Tashkent for the purpose of an establishment of disease of children with febrile convulsions.

**Method:** For complex inspection of patients following methods have been used: the general analysis of blood, urine, the biochemical analysis of blood, definition electrolytic structure of blood, ultrasonic, RI and CT under indications.

**Results:** It has been surveyed 11384 children living in territory, the given polyclinic served by doctors. From 11384 children by us it has been selected 247 (2,2%) children transferred convulsions. These 247 children were under our supervision within 6 years. By katamnesis researches it has been established, what at 222 (89,9%) children are observed seizures now, at 25 (10,1%) children. Seizures in the anamnesis at which in the subsequent without reception antiepileptic drugs were not observed. It has been established, what from 222 children at 151 (68,0%) children were observed febrile convulsions, and at 71 (32,0%) - afebril. From 151 children 127 (84,1%) were in the period of convalescence, this period of recover characterised gradual has disappeared-noveniem signs of illness and restoration of normal ability to live of an organism, and at remained 24 children the convulsive syndrome has passed in an epilepsy.

**Conclusion:** Our supervision have shown that febrile convulsions at a heat developed at boys and at the age of 1-2 years is more often. At transition febrile convulsions in an epilepsy hereditary compromised it is observed more often at I and II degrees of relationship.

**p054**

#### Practical experience of the work of Kazan Children Epileptology Center

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**Purpose:** To show the practical experience, efficiency of the work of specialized Kazan children's epileptology center.

**Method:** To compare data on practical work epileptology service in 2000 and in 2009 years.

**Results:** In 2000 all children with epilepsy have been divided only on two groups: epilepsy with grand mal seizures 89,6%; epilepsy with petit mal seizures 10,4%. The group of focals forms epilepsies has not been allocated. The lead positions in treatment belonged to phenobarbital 51%; carbamazepine 24%; valproic acid 18%. Antiepileptic drugs of new generation were not applied. In 2009 situation has changed considerably. 852 children with epilepsy are divided into the basic groups of epilepsies: idiopathic focal 6%, idiopathic generalised 18%, symptomatic focal 32%, symptomatic generalised 4%, probably symptomatic focal 29%, probably symptomatic generalised 4%, not differentiated forms 7%. The main antiepileptic drugs we used: valproic acid 53%; carbamazepine 16%. New antiepileptic drugs: topiramate 14%, lamotrigine 5,5%, levetiracetam 2,4%. Only 5,3% children continue to accept phenobarbital. The majority of patients are use monotherapy - 542 persons (78%). 112 (16%) accept two drugs. Three preparations treat accordingly 34 persons (5%). Efficiency of treatment epilepsy: clinical remission is reached at 455 (64%) patients. At 188 (26%) patients seizures are kept on a regular treatment. Most of them with symptomatic focal and multifocal forms epilepsy, being on combined antiepileptic therapy. 10% of patients are treated irregularly.

**Conclusion:** Supervision in specialized epileptology center raises quality of diagnostics and treatment epilepsy and improves quality of life at children with epilepsy.

**p055**

#### Epilepsy and malformations of cortical development study of 19 children from one Tunisian paediatric department

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Until the advent of neuro-imaging investigations (especially the MRI), malformations of cortical development (MCD) are increasingly recognized as important causes of developmental delay, epilepsy, and other neurological disorders. We retrospectively reviewed 19 epileptic children diagnosed with MCD in the period between 2005 and 2009, in the paediatric department of Farhat Hached Hospital. We studied clinical, brain imaging and EEG features. Cerebral MRI

was performed for 18 children. For one case, the diagnosis of tuberous sclerosis has been selected to the association, partial seizures, achromic skin patches and characteristics cerebral calcifications on CT. Tuberous sclerosis is the abnormality most frequently found. It concern 10/19 children. The onset of epilepsy varies between 45 days and 7 years. They all presented with partial seizures, 4 of them with infantile spasms. They all exhibit mental retardation of varying severity with behavioral disorders (4 with autism). 6 of them are pharmacoresistant.

4 of the 19 patients have a cortical dysplasia. Seizures are started between 7 months and 8 years mostly with partial seizures and West syndrome in a patient. None of them could be treated surgically.

4 other patients had lissencephaly with severe and early onset epileptic encephalopathy. Abnormal gene LIS1 was identified in one of them.

The last patient has polymicrogyria with learning difficulties and complex partial seizures at the age of 8 years. With these observations, we propose a review of the literature on the diagnostic (imaging investigations, genetics tests...) and therapeutic strategy of malformations of cortical development in children.

#### p056

##### Epilepsy in pediatric multiple sclerosis

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**Purpose:** In this study we aimed to estimate the frequency of epilepsy in patients with pediatric onset of MS and investigate the relationship between course of MS, neuroimaging findings, electroencephalogram abnormalities, response to antiepileptic drugs, and also prognosis among pediatric MS patients who were registered with Isfahan MS Society (IMSS).

**Method:** IMSS is the only MS referral center in the entire province of Isfahan and nearly gathers all patients in the province. We used data from the IMSS database to investigate the rate of epilepsy in 181 pediatric patients with definite MS registered to date, evaluate their electroencephalograms and neuroimaging and followed them to reveal their response to antiepileptic therapy and determine their prognosis.

**Results:** the incidence of epilepsy in our study was 5.5%. 80% of patients were female. 40% had a secondary progressive course, while others showed a relapsing-remitting one. All the patients had generalized tonic-clonic seizure which occurred after the onset of MS.

**Conclusion:** As in adults, prevalence of epilepsy is higher in children with MS comparing with general population. In our observation, the first seizure always occurred in the course of disease and not as an initial presenting symptom and was correlated with neuroimaging findings, electroencephalogram abnormalities and course of MS.

#### p057

##### Epilepsy in neurometabolic disorders

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**Purpose:** The aim of this study is to determine clinical and electroencephalographic features of epilepsy associated to neurometabolic disorders.

**Methods:** We have examined prospectively a group of 392 children with congenital mental retardation (MR). Within this group we have individualised patients with epilepsy and caused by neurometabolic disorder. We propose to determine the clinical and EEG features of epilepsy for these patients.

**Results:** We've compiled 9 patients (6 males, 3 females). Two patients with Phenylketonuria: one had West syndrome and the other had tonic-clonic seizures. Five patients were diagnosticated as 2OH glutaric aciduria. Focal seizures were noted in 3 patients, and generalized seizures for the others. Two patients had pyridoxine dependent seizures, with an early age of onset and a good outcome with vitamine B6 treatment.

**Conclusion:** In pyridoxine dependant seizures, epilepsy is the first expression of the disease; the early age at onset and the good outcome with vitamine B6 supplementation suggest the diagnosis. However, in the phenylketonuria, epilepsy can suggest the diagnosis if it occurs early associated with the classical phenotype. The age of epilepsy onset in 2OH glutaric aciduria varies widely, in these cases the associated symptoms and MRI findings may suggest it and, lead to perform metabolic screening.

p058

**Clinical, cognitive and EEG characteristics of benign rolandic epilepsy: about a cohort of 18 patients**Sihem Ben Nsir<sup>1</sup>, Manel Ammar<sup>1</sup>, Ines Hsairi<sup>1,2</sup>, Fatma Kammoun<sup>1,2</sup>, Chahnez Triki<sup>1,2</sup>,<sup>1</sup>Department of Pediatric Neurology, Hedi Chaker Hospital, Sfax, Tunisia, <sup>2</sup>Neuropediatric Research Unit, Sfax, Tunisia

**Purpose:** Benign rolandic epilepsy (BRE), or benign epilepsy of childhood with centrotemporal spikes (BECT), is the most common form of epilepsy in childhood. BRE is characterized by brief nocturnal seizures and remission following puberty.

**Method:** Eighteen children with BRE were studied. Clinical, cognitive and electroencephalographic data were described.

**Results:** The first seizure was seen between the ages of 3 and 13 years. Most patients (77.7%) had simple partial seizures, and 33.4% patients developed secondarily generalized seizures. Only 1 patient presented with obvious generalized seizures at onset of BRE. The seizures occurred often during sleep (55.5%), 16.6% had seizures while awake and 27.7% had seizures in both the sleeping and waking states. The neurological examination was normal in all patients. Cognitive disorders associate, attention deficit (33.3%) and memory disorders (22.2%) and 44.4 % patients had learning disabilities. The EEG showed repetitive diphasic spikes or sharp waves which were most dominant in the central or centrotemporal areas, Continuous spikes and waves during slow sleep (CSWSS) were noted in 4 cases. All patients were treated with antiepileptic drugs (AEDs): carbamazepine (CBZ) or valproate (VPA) or valproate and clobazam. Recovery was observed in all patients.

**Conclusion:** BRE is classified as a benign focal epilepsy which respond to a multifactorially inheritance. This syndrome is usually benign in terms of control with AEDs and seizure remission. The use of carbamazepine must be avoided in cases with CSWSS. Young children with BRE have to be examined frequently, as they have a high risk of developing learning disability.

## SOCIAL AND EPIDEMIOLOGICAL ISSUES

p059

**Epilepsy in UAE**Shareefa Abdool, A S Nadeem, A Al Madani, M Mizaal, S Noori, K Al Shamsi,  
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There is paucity of information on Epilepsy in UAE. The purpose of this study is to show statistics about epilepsy in UAE nationals based on age, gender, age of onset of attacks, presenting semiology, seizure type and etiology. It is a Hospital based retrospective study with review of medical records of UAE national epilepsy patients presented to outpatient neurology clinic at Rashid Hospital over the last 10 years. The study is not complete as yet and is ongoing and expected to be completed by February 2010. This is the only and first study in UAE on Epilepsy among national patients.

p060

**Clinical aspects of psychosis in epileptic outpatients of Marrakech University Hospital**Imane Adali<sup>1</sup>, Nawal Adali<sup>1</sup>, Fatiha Manoudi<sup>1</sup>, Fatima Asri<sup>1</sup>, Imane Tazi<sup>1</sup>, Najib Kissani<sup>2</sup>,<sup>1</sup>Psychiatry Department, CHU Mohammed VI University Hospital, Marrakech, Morocco, <sup>2</sup>Neurology Department, CHU Mohammed VI University Hospital, Marrakech, Morocco

**Purpose:** The prevalence of psychosis in epileptic patients is 7.1%, rising to 8.8-27% in medically refractory epilepsy. As far as we know, it has not yet been studied in Marrakech city. Our purpose was to investigate a series of patients with epileptic psychosis in our university hospital and to compare our findings with the medical literature.

**Method:** Forty outpatients who presented with diagnoses of epilepsy and a psychotic disorder were admitted in Neurology outpatients. DSM IV was used to define psychotic episodes with presence of at least one of the following: delusions, hallucinations, disorganized speech, or grossly disorganized or catatonic behaviour.

**Results:** Mean age of our patients was 35 years with a male predominance (52%). Epilepsy started before psychosis in all cases at mean age of 10 years. The most prevalent medical antecedents were perinatal events (28%) and febrile seizures (15%). Twelve patients presented with postictal psychotic episodes and 28 patients (70%) with interictal episodes. Temporal lobe epilepsy (TLE) was the most frequent type (85%). All patients underwent Cerebral MRI confirming mesial temporal sclerosis in 50% of cases. Psychotic episodes progressed to schizophrenia or schizophreniform disorder in 28 patients.

**Conclusion:** Epileptic psychosis in our department has characteristics similar to those described by different authors. The typical presentation is that of a history of perinatal events, an onset of epilepsy (predominance of TLE) by the age of 10 years, with difficult clinical control of seizures, and evolution to a schizophreniform presentation of psychosis with frequent psychiatric admissions and functional decline.

p061

**The fight against quackery in epilepsy: example of the Moroccan Association Against Epilepsy**

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**Purpose:** The epilepsy constitute one of the most common brain diseases. Although it requires a specific medical care, 74% of epileptics in Morocco still rely in traditional methods that can be hazardous.

**Methods:** We report the factors including traditional methods use and our experience in the fight against quackery

**Results:** Multiple factors has been reported by the epileptics patients; the lack of health insurance, the lack of neurologists, the social belief of epilepsy making it a satanic disease, the cost of drugs and the long delay in the neurologic consultations appointments. Once these factors have been identified, our association (Moroccan association against epilepsy) has made a specific strategy. The MSAE worked to ensure regular neurologic consultation in the remotest countries by mobile consultations. Also in order to promote the medical follow-up a sponsorship for epileptic patients has been established. The national days of sensibilization organized in multiple countries has contributed to change the social beliefs and to convince epileptics of the harm of traditional methods.

**Conclusion:** Traditional methods result to a delay in the care of epileptic's patients. Our actions have contributed to decrease the proportion of their use. Our experience can be used by other African association working in this field.

p062

**Religious beliefs about epilepsy among Saudi patients: community-based study**

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**Purpose:** The study aimed: to explore the extent of knowledge about epilepsy in the Saudi community. Whether epilepsy is organic or caused by Jinn in different regions of KSA or is it contagious? Can epilepsy be cured by medical treatment as compared to religious therapies?

**Method:** This is a qualitative study based on a designed questionnaire .The questionnaire explores the basic demographic characteristics in each region such as gender; employment, education and questions relating to attitudes towards epilepsy. These questions included: knowledge about epilepsy in the community, beliefs about Jinn vs. organic. Is it contagious, and can it be cured medically. Data was collected from male and female volunteers above age of 14-years, who can understand and answer the questions listed in the questionnaire, All geographical regions of the kingdom, were included in the study.

**Results:** At present, 973 volunteers, from all regions of KSA, of both sexes, with age range of 15-85 years, were randomly enrolled. Preliminary results collected from the study population showed that 25% of the responders belief that epilepsy is caused by Jinn. 22 % of the responders indicated that epilepsy should be treated by religious therapies.

**Conclusion:** This study clearly documents the magnitude of the misconception about epilepsy in the Saudi community. Although central region is a densely populated, multicultural and highly civilized area, a significant percentage of the population holds the belief that epilepsy is caused by Jinn. Even among well educated people, 20% still belief that epilepsy is caused by jinn.

p063

**Early seizure in acute stroke**

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**Purpose:** Early seizure (ES) may complicate the clinical course of patients with acute stroke. The aim of this study was to assess the rate of and the predictive factors for early seizure as well the effects of ES on the clinical outcome at hospital discharge in patients with first-ever stroke.

**Method:** A total of 352 consecutive patients with first-ever stroke, admitted to our department from January 2000 to December 2008, were included in this retrospective study. Early seizures were defined as seizures occurring within 7 days from acute stroke. Patients with history of epilepsy were excluded.

**Results:** About 47 patients (13%) had early seizure, and 8 had a status epilepticus. We had 28 women and 19 men. The mean age was  $71.6 \pm 14.6$ . They were significantly more common in patients with cortical involvement, severe and large stroke, and in patient with cortical hemorrhagic transformation of ischemic stroke. ES was not associated with an increase in adverse outcome (mortality and disability).

**Conclusion:** Early seizure occurs in about 5% of patients with acute stroke. In these patients hemorrhagic transformation is a predictive factor for ES. ES does not seem to be associated with an adverse outcome at hospital discharge after acute stroke.

p064

**Free epilepsy clinic completes its silver jubilee at Lahore, Pakistan in 2010***Haroon Chaudhry<sup>1</sup>, Raumish Masud Khan<sup>2</sup>, Ammara Shabir<sup>1</sup>**<sup>1</sup>Fatima Jinah Medical College/Sir Ganga Ram Hospital, Lahore, Pakistan, <sup>2</sup>Department of Psychiatry Fatima Jinah Medical College, Lahore, Pakistan*

A weekly free Epilepsy clinic in the community is working successfully since 1985 with the help of FLAME (The First Liberated Action Movement against Epilepsy) and a group of mental health professionals at Ahbab Hospital, Ravi Road, Lahore Pakistan. Over 250,000 patients have been facilitated from this free clinic, representing all four provinces of Pakistan and also from Azad Kashmir and Afghanistan. Team comprising of neuropsychiatrist, medical doctors, psychologists, pharmaceutical representatives, students and housewives attend this facility. Medicines are prescribed by the Neuropsychiatrist, counseling services are provided by psychologists and students and representatives of pharmaceutical companies help in distributing free medicines to the patients. Volunteers, mainly housewives, give briefing to patients and their families about balanced diet, healthy life styles, personal hygiene, and benefits of religious practices. Public awareness programs on issues related to epilepsy are also conducted for patients and their families quarterly within the premises of this facility. These programs are attended by the patients and their families, teachers, students, writers, journalists, artists, politicians, sportsmen, and mental health professionals. During the past 25 years, various research projects have been completed addressing the different aspects of epilepsy and they have been published in local and foreign journals. On 31st January 2010 to mark the occasion Eminent mental health professionals representing SAARC Countries have given their consent to participate in these important events. Silver Jubilee celebrations are organized at Al-Hamra Hall, Lahore Pakistan.

p065

**Diagnostic value of Wada in lateralization of Arabian patients with temporal lobe epilepsy***El Sheikh Ibrahim, Ahmed Al Izzeldin, Abdulaziz Al Semari, Salah Baz, Ibrahim Thubaiti, Aziza Chedrawi, Tariq Abalkhail,**King Faisal Specialist Hospital and Research Centre, Riyadh, KSA*

**Aim:** Wada is an essential component of the preoperative evaluation for epilepsy surgery. It is a technique designed as a diagnostic aid to assist lateralization of the primary epileptogenic region in temporal lobe epileptics and the assessment of the functional integrity of mesial temporal lobe structures concerning memory. The Wada memory part is also used as a predictive factor for postoperative memory deficit.

**Method:** Since Wada procedure protocol is a western devised technique which could be influenced by Arab cultural factors, we investigated retrospectively, the clinical lateralization of the Wada test in 90 Arabian patients with medically intractable temporal lobe epilepsy (TLE) in a major Middle Eastern Epilepsy Centre who were post temporal lobectomy seizures free. The Wada memory stimuli were composed of 8 locally common objects made of plastic and rubber materials. A clinical criteria of at least 2 points between right and left injections correctly classified more than 90% of patients into left and right TLE groups. There was small number of patients who could not be classified through this procedure.

Results and

**Conclusions:** Our findings indicate that despite of cultural aspects that influence the patients with TLE, the diagnostic value of Wada in TLE was comparable to the reported results in the West.

p066

**How epilepsy associations can improve the epilepsy management in African countries: Example of the Moroccan Association Against epilepsy***Yassine Mebrouk, Mohammed Chraa, Najib Kissani,**Neurology Department, CHU Mohammed VI University Hospital, Marrakech, Morocco*

**Purpose:** Epilepsy is one of the most common and serious brain disorders in the world, and it's responsible for an enormous amount of suffering. WHO estimates that of the 10 million people in Africa who live with epilepsy, 80% are not treated with antiepileptic drugs.

**Method:** Report about epilepsy management in Morocco

**Results:** The prevalence of epilepsy in Morocco is estimated to 1, 1%. Our conditions especially in small towns and countryside are ignorance, lack of health insurance, lack of neurologists, low involvement of general physicians in the management of epilepsy, the social belief, making of it a satanic disease, drains a large number of epileptic in marabous and contribute to the delay of care. These factors make the epilepsy a multifactorial problematic: medical, social and cultural witch need combining efforts of ministry of health and the national epilepsy associations. The Moroccan Society against Epilepsy (AMCEP) was created in Marrakech in 2001 and was gradually extended to become a national association in 2005. It is strongly implied in the epilepsy formation and training of

the doctors and other Health Professionals, in the fight against marabouts practices and the lack of neurologist, and it works also to ensure treatment for needy epileptic patients.

**Conclusion:** Combining efforts of ministry of health, and national's epilepsy associations is essential to improve epilepsy management in Africans countries.

**p067**

#### **Epilepsy-related neurocysticercosis**

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**Purpose:** Awareness of Neurocysticercosis (NCC) and associated seizures in the developing countries and the increased frequencies of hospital admissions of young Asian patients with seizures and abnormal brain CT/MRI suggestive of NCC were the main reasons behind this study.

**Method:** This is a retrospective and prospective study, based on hospital populations. Between December 2006 and October 2008, all patients with seizure(s) were seen at the emergency department at our I hospital. Individuals suspected of having NCC were admitted for further investigations and treatment. NCC was diagnosed on the basis of the following: CT or MRI (brain) showing cystic lesions with scolex or Lesions suggestive of NCC and a compatible epidemiological and clinical history.

**Results:** 120 patients presented with seizure(s). 55 patients (45,8%) were diagnosed as having NCC . 54 of the NCC patients (98,3%) were males ; 53 patients (96,5%) presented with seizures with 45 patients (81,8%) having their first seizure. 33 patients (60%) had partial seizures. 31 patients (56%) showed a viable cyst on CT/MRI , 11 patients (20%) calcified lesions. 29 patients (52%) had an abnormal EEG.

**Conclusion:** This is the first study confirming that NCC is a major cause of adult-onset seizures in an increasingly young population in the Middle East (Qatar) over a 23 months period. This High incidence is explained by the presence of a growing Indian subcontinent working force imported recently from areas where NCC is endemic (Nepal). Because of globalization, many physicians who are unfamiliar with NCC are now faced with the disease. CT, MRI findings, EEG, Cysticidal therapy, and AEDs treatment will be discussed.

**p068**

#### **The impact of seizure severity and mood on quality of life in people with epilepsy: which one is more important?**

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**Purpose:** Seizure severity and mood change have been known as major factors affecting on the quality of life (QOL) in people with epilepsy (PWE). However, there are few studies to elucidate which factor is more influential on QOL.

**Method:** We enrolled patients with drug refractory epilepsy (DRE) (n=81) and well-controlled epilepsy (WCE) for at least 1 year (n=168) at our epilepsy clinics. We conducted them Beck depression Inventory (BDI), Beck Anxiety Inventory (BAI), and Quality of Life Epilepsy Inventory-31 (QOLIE-31). We further divided them according to the existence of mood deficit, defined as the score of BDI>15 or BAI>21. We compared the overall scores of QOLIE-31 among those patients.

**Results:** PWE were divided into 4 groups, i.e. DRE with mood deficit (n=46), DRE without mood deficit (n=35), WCE with mood deficit (n=38), and WCE without mood deficit (n=130). The overall scores of QOLIE-31 were significantly different among those groups (F=114.98, p< 0.001). After post-hoc comparisons, the overall score of DRE with mood deficit was significantly lower than those of others. Furthermore, the overall score of WCE with mood deficit was lower than those of DRE without mood deficit and WCE without mood deficit.

**Conclusion:** Seizure severity and mood change can simultaneously decrease QOL in PWE. However, the impact of mood disorders on QOL is more powerful than that of seizure severity.

**p069**

#### **KKUH epilepsy registry**

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**Purpose:** Determine clinical EEG and imaging features of epilepsy in university hospital.

**Method:** 1250 epileptic patients examined and followed up in King Khaled University Hospital have been included in the registry. In all cases the diagnosis of epilepsy has been based on clinical presentation with EEG findings.

Imaging including brain CT scan and/or MRI has been done in the majority of patients to determine possible underlying structural lesions.

**Results:** Important data have been obtained from this study including symptoms of different types of epilepsy, time-delay before diagnosis and treatment, intractable (eventually ictal) EEG findings, Imaging findings, response to different antiepileptic drugs, etiological factors, and reproduction. Other data regarding the acceptance of the disease have been found important. Details will be discussed in the meeting.

**Conclusion:** This registry, 1st done in an university hospital in KSA has been found important for the comprehension and management of epilepsy in Saudi population and disclose the need for particular social support for epileptic patients.

p070

#### Risk and predictors of early epileptic seizures in cerebral venous and sinus thrombosis in Middle East

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**Purpose:** We assessed the risk and determined predictors of early epileptic seizures (ES) in patients with acute cerebral venous and sinus thrombosis (CVST)

**Method:** A prospective series of 173 consecutive patients with acute CVST admitted to neurological wards in two Iranian university hospitals was analyzed for frequency of ES and in-hospital mortality. Demographic, clinical and radiological characteristics during the acute stage were retrospectively analyzed for significant association with ES in univariate and multivariate analyses.

**Results:** Early symptomatic seizures, seizure as a first symptom of admission and seizure as a first symptom of disease were found in 62 patients (35.8%), 24 (13.9%), 4 (2.3%), respectively. Amongst patients with ES, mortality was more frequent than those without ES (16.1% and 6.1%, respectively) [odds ratio (OR) 2.85; 95% CI 1.02-7.93; P < 0.037]. In multivariate logistic regression analysis, venous infarct (OR 2.8; 95% CI 1.24-6.67; P = 0.014) and sagittal sinus thrombosis (OR 0.75; 95% CI 0.58-0.97; P = 0.03) were independent predictors of early epileptic seizures

**Conclusion:** Patients with sagittal sinus thrombosis and venous infarct carried the highest risk for ES. Prognosis of CVST in ES group is worse and physician should be aware of high risk patients. Prophylactic antiepileptic treatment may be an option for these patients.

## STATUS EPILEPTICUS

p071

#### Development of neuroprotective drugs against experimentally induced status epilepticus in young rats

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**Purpose:** All currently available antiepileptic drugs do not provide satisfactory protection against seizures and associated neurodegenerative changes. Based on our pilot study of 11 drugs, the following short listed drugs including quinacrine (QCN), pentoxifylline (PTX) and proglumide (PGM) have been tested for their neuroprotective activity against experimentally induced status epilepticus (SE) in young rats.

**Method:** SE was induced in 19 days old rats by lithium chloride (Li) (3mEq/kg, i.p.) followed (24 h later) by p ilocarpine (Pc) in a dose of 20 mg/kg, subcutaneously. The animals received varying doses of QCN (5, 15 and 30 mg/kg), PTX (20, 40 and 60 mg/kg) and PGM (0.25, 0.5 and 0.75 g/kg), i.p., one hour before induction of seizure. The control group received same volume of saline. Animals were subjected to a battery of behavioral tests to record seizures, tremors, anxiety, cognitive functions and locomotor activity. Thereafter, the animals were sacrificed and their brain was isolated for histopathological studies in the hippocampus area.

**Results:** Li-Pc produced significant symptoms of seizures leading to SE in animals along with significant motor deficit, anxiety and impairment of memory. QCN, PTX and PGM attenuated dose-dependently the latencies and incidence of seizures, motor deficits, loss of memory and cognitive dysfunction. These drugs also ameliorated the Li-Pc induced neuronal degeneration in the hippocampus.

**Conclusion:** The comparative significant and dose-dependent efficacy of the short listed drugs were in the order PTX>PGM>QCN. High dose of PTX protected young animals completely against status epilepticus induced seizures and associated neurodegenerative changes.

p072

#### Nonketotic hyperglycemia and occipital lobe status: clinical and neuroradiological findings

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**Purpose:** The association of nonketotic hyperglycemia and occipital lobe status epilepticus is very rare. The MRI and MR spectroscopy findings were reported in only one case in the literature. We describe Acute MRI and MR Spectroscopy findings of a patient with a nonketotic hyperglycemia induced occipital lobe status epilepticus.

**Method:** In a 67-year-old diabetic man, acute simple and complex visual hallucinations that were of insidious onset and ending, happening as frequent as 5-8 per hour.

**Results:** During the attacks the patient had a right gaze preference and confusion that disappeared when the attack ended. Outside the attack he had right hemianopsia. Ictal EEG revealed an epileptogenic focus in the left occipital lobe. MRI showed focal left occipital T2 subcortical hypointensity, MR spectroscopy revealed a decrease in NAA peak with a normal choline to creatine ratio. The patient's seizures were controlled by antiepileptics and tight glucose control. Two weeks post discharge his right hemianopia disappeared clinically.

**Conclusion:** Nonketotic hyperglycemia could be a rare cause for occipital lobe status epilepticus and it is usually associated with MRI and MR spectroscopy findings.

p073

#### EEG findings in adult patient with non-convulsive status epilepticus

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**Purpose:** Non-convulsive status epilepticus (NCSE) represents a prolonged seizures without motor manifestations. It is ictal impairment of cognition with or without subtle movement, for example, facial or extremities twitching, mutism, eyeball deviation, automatism, behavioral change. Because of its heterogeneous features, confirmation of NCSE requires an electroencephalogram (EEG) showing seizure activity.

**Method:** We retrospectively reviewed the 24 EEGs out of 16 patients who had made a diagnosis of NCSE from November 2007 to July 2009. They were split into three groups based on our criteria modified from "EEG criteria for nonconvulsive status epilepticus". And then the EEGs were classified into focal or generalized with intermittent or persistent patterns. In addition, we looked into the relationship of each EEG group and disease etiology, and their prognosis.

**Results:** In 24 cases, females were 10 and males were 6. There were 22 focal seizure pattern (91.6%) and 2 generalized seizure pattern (8.3%) in one patient and 22 focal seizure pattern were included in group 3. Among them, 15 cases (60%) were persistent patterns.

Etiology and prognosis of our patients with NCSE were variable. We used the benzodiazepine intravenous injection in 5 cases, and all of them have shown to respond to it. Eight patients (50%) with NCSE were expired.

**Conclusion:** Most of EEG cases in adult patients with NCSE were focal types, and persistent pattern was more common. The prognosis of NCSE seems to be very poor. Early EEG examination and treatment of the causes of NCSE and NCSE itself is very important in adult patients with NCSE.

p074

#### Effect of doxepin on physiology of reproduction

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**Background:** Doxepin is a serotonin and norepinephrine reuptake inhibitor. Considering the importance of this drug in treating nervous diseases, its side effects are very important on the endocrine axis.

In this research the effect of Doxepin were studied on the concentration of testosterone, FSH and LH level and spermatogenesis.

**Materials and Methods:** The experiments were done on 40 male Wistar rats that divided to 5 groups of 8. The control group received nothing. The sham group was given distilled water as a solvent. The experimental groups were injected 35, 70 and 140 mg/kg of the drug orally for 21 days. The blood samples were taken at 22th day and the concentration of testosterone; FSH and LH were measured by RIA method. In addition, at the 22th day, the testes were separated and histological changes were studied among experimental, sham and control group. The results were evaluated by using ANOVA and Duncan tests.

**Results:** The results showed that 140 mg/kg of Doxepin reduced serum testosterone level while it increased FSH and LH levels ( $P < 0.05$ ). Histological investigations of the testes showed a decline on spermatogenesis chain in dose of 140 mg/kg.

**Conclusions:** According to our findings, Doxepin decreases the concentration of testosterone level and the number of spermatogenic cells and increases FSH and LH levels at high doses. Also, it can weaken the function of reproductive activity, probably.

## STIGMA AND EPILEPSY

p075

### Religiosity and epilepsy: engagement of Iranian epileptics' patients in religious practices

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**Purpose:** The aim of this study was “to determine religious experiences in Iranian epileptics' patients”.

**Method:** In this qualitative study 21 epileptics patients (18 -65 years) based on purposeful sampling were selected. They were interviewed about religious experiences epilepsy. Interviews were analyzed using a content analysis approach. Finding indicated 5 themes including “The Gods will”, “The Gods exam”, “illness as a means of absolving sin”, “getting closer to God”, and “ Demanding help from God”. Belief in God's will is a particularly strong aspect of the Muslim religion. Many participants believed that the disease may be a punishment for sins, so suffering by disease cleans them from their sins. Also this study showed that the use of religious and spiritual therapies such as personal prayer, recitation from religious texts such as Koran, go to holy shrines, worship places was invasive in our sample as a second-line treatment.

**Results:** Fatalistic beliefs about health were common in Iranian epileptic patients. Based on many researches, changes in cerebral blood flow, lower serotonin receptor density and an expansion of dopamine system can increase religious emotions in epileptics patients, considering the fact that Iranian population is mostly Muslim (98%. Findings propose that religious belief and practices helps epileptics patient to tolerate the impact of seizures on their lives, adjust their lifestyles and to be hopeful about the future

**Conclusion:** Then health care professional should pay more attention to the religious aspects in caring for Iranian patients with epilepsy.

## TREATMENT ISSUES

p076

### Peculiarity of postictal period in elderly epileptic patients

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Clinical severity of epileptic patients stipulates not only for frequency and type of epileptic seizure but also for clinical peculiarity of postictal period. 89 elderly epileptic patients (after 60 years) and 52 young (control group) were investigated. Consciousness recovering more then 10 minutes, appearance of central hemodynamic or neurological disturbance considered as complicated postictal period.

75 (84,3%) elderly epileptic patients had complicated postictal period. 5 of this patients had so grave postictal disturbances of central hemodynamic that differentiation with acute coronary deficiency was necessary. 40 elderly epileptic patients with complicated postictal period pointed to severity of postictal period was the determinative disabling factor in patients. Only 20 (38, 5%) investigated young patients had complicated postictal period. And nobody of them had postictal disturbances of central hemodynamic; also nobody of them marked that postictal period was the disabling factor.

Elderly epileptic patients more often then young patients had long-term and severe postictal period. Severity of postictal period in elderly epileptic patients is one of disabling factor in patients.

p077

### Our clinical experience with zonisamide in resistant generalized epilepsy syndromes

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**Purpose:** zonisamide is licensed in the European Union for adjunctive therapy for partial epilepsy, but it's efficacy in generalized epilepsy was less explored.

**Method:** this prospective observational study included 47 patients (mean age 29 years, range 3-50) with different resistant generalized epilepsy syndromes: idiopathic generalized syndromes 15 patients, (juvenile myoclonic epilepsy: 4, absence epilepsy 4, myoclonic absence 2, unclassified IGE 5), progressive myoclonic epilepsy type 1 (PME1) 4, severe myoclonic epilepsy of infancy (SMEI) 3, borderline SMEI 3, Lennox-Gastaut syndrome/ secondary

generalized epileptic encephalopathies 23 patients. All patients were followed up for at least 6 months. The mean dose given was 367 mg/day (range 100-600 mg/day), the patients received at least 1 and no more than 2 concomitant AE. Response was defined as more than 50% seizure reduction or seizure freedom.

**Results:** The best effect was achieved in PME 1, all the patients were responders. Myoclonic seizures were reduced 80%, none of the patients had GTC seizures. In 2 of the 4 patients all other antiepileptics were tapered, so they were GTC seizure and almost myoclonia free on zonisamide only.

Responder rates were in GEFS +/-SME 62,5%, in resistant IGE 62,5%, and in epileptic encephalopathies 33,3% patients. Tolerance after initial efficacy developed in 6 patients. Adverse effects were mild: weight loss, somnolence and confusion were repeatedly reported. Three patients reported cognitive improvement.

**Conclusion:** clinical benefit of a broad spectrum antiepileptic zonisamide extends across seizure types, ages and epilepsy syndromes. The efficacy in PME proved to be excellent.

#### p078

#### To compare the safety of sustained release pregabalin in comparison to conventional release formulation without compromising efficacy in DPNP patients

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**Purpose:** To compare the safety of sustained release (SR) pregabalin in comparison to conventional release formulation.

**Method:** Open label, randomized, parallel, comparative, multicentric clinical trial.

**Results:** Pregabalin SR is effective in relieving diabetic peripheral neuropathic pain as well as exhibits favorable tolerability profile. There was a significant reduction in affective dimension of pain scores from baseline as compared with the end of trial results with Pregabalin SR group than IR group.

**Conclusion:** Pregabalin SR has the potential to be a useful new treatment option for patients with diabetic peripheral neuropathic pain with better patient compliance.

#### p079

#### The effect of intracerebroventricular injection of flunixin meglumine on PTZ- induced seizure in male rat

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**Purpose:** Flunixin Meglumine is a NSAIDS and nonselective COX inhibitor. Referring to relation between COX and seizure, this research is done to assess scientific and experimental effects of this compound in curing seizure caused by PTZ.

**Method:** In this research after surgery and planting reference cannula, male wistar rat (200±20gr) underwent internal injection amount 12.5, 25 and 50µg of Flunixin Meglumine (1µl volume in each). In control group had been injected by 1µl of Saline (icv). Then to induce seizure in all experimental group 80 mg/kg of pentylenetetrazole (PTZ) was used intraperitoneally. The score of seizure and initiation of every stage of seizure was assessed and recorded during 20 minutes after the injection of PTZ. The data was analyzed by using analysis of One Way ANOVA.

**Results:** As a result of this research injection 25, and 50 µg of FM significantly increased initiation time of every stages of seizure in compared to control group. The group that received 50µg of Flunixin Meglumine didn't show stage 5. In other side 12.5 µg of FM did not have significant difference in comparison with control group.

**Conclusion:** As a result FM has anti convulsion property which is dose dependent.

#### p080

#### Death in Unverricht-Lundborg disease

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**Purpose:** While Unverricht-Lundborg disease (ULD) has become a comparatively benign form of progressive myoclonus epilepsy, due mostly to adequate pharmacological management, life expectancy may be limited in this condition due to early death.

**Method:** We performed a multicentric study of the circumstances of death in ULD patients seen in the last 16 years, using a detailed questionnaire sent to neurologists with first-hand experience with ULD. We assessed age, sex, severity and duration of disease, antiepileptic drugs (AEDs), circumstances and presumed cause of death.

**Results:** Nineteen observations (12 F, 7 M) were collected from four centres (Tunis, Marseille, Milan, and Belgrade). The most common causes of death are 1- SUDEP (6 cases, all female), with 4/6 on phenobarbital alone, and 2- complications of severe ULD (6 cases). Two patients committed suicide. Only one death was clearly unrelated to ULD (car accident), while four patients died of stroke, drowning, and complications of chronic alcoholism and Wernicke encephalopathy, respectively.

**Conclusion:** Although the prognosis of ULD has progressed, there are still spontaneously severe forms and there is still a high risk of early death, including SUDEP. Both optimal pharmacotherapy and social as well as psychological support will help further improve the lot of ULD patients.

p081

#### Vagus nerve stimulation for intractable seizures

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**Purpose:** We want to explain our experience in our epileptic patients with Prof. Tulgar's implants that have been implanted about 9 months ago.

Vagus nerve stimulation (VNS) is an alternative non-destructive surgical treatment for patients with medically intractable epilepsy. Implantation of a vagus nerve stimulator requires an important financial investment and its cost-benefit analysis has been published and it has been clarified that it is an effective treatment of refractory epilepsy and remains effective during long-term follow-up. Cost-benefit analysis suggests that the cost of VNS is saved within two years following implantation. This method has proven to be a safe, feasible, and potentially effective method of reducing seizures in selected patient populations. However, reduction in seizure frequency, global assessments of quality of life, physiological measurements, and adverse events when are analyzed it clarifies that it is better to examine this method in medically resistant patients before the more invasive surgical methods.

**Aims:** We want to explain our experience in our epileptic patients with Prof. Tulgar's implants that have been implanted about 9 months ago.

**Results:** For report of the results about effectiveness and outcome our sample is not enough and the time is also. But we want to share our experiences with these patients in our center.

**Conclusion:** About the benefit effects of this modality of treatment in medically resistant patients it has been clarified that this method is potentially effective (particularly cost-effective) and has less complications in compare of other surgical methods that are suggested for intractable seizures.

p082

#### Astasia-abasia post temporal lobectomy

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**Background:** Temporal lobectomy can be complicated by somatoform disorders, psychiatric illnesses and nonepileptic psychogenic seizures. We report the case of a woman who developed a hysterical gait and psychogenic tremor following temporal lobe surgery for refractory epilepsy. To our knowledge this type of conversion reaction following temporal lobectomy has not been previously reported.

**Case report:** A 41-year-old right-handed woman with medically refractory partial epilepsy secondary to right mesial temporal sclerosis underwent a selective right amygdalohippocampectomy. Three days later, she was discharged on valproate and carbamazepine. Two months later she presented because of dizziness, double vision, progressive gait unsteadiness and tremor in both upper and lower extremities over the last month. She had no previous history of psychiatric illnesses. On examination, the patient appeared depressed and emotionally detached. There was an incomplete right trochlear nerve paresis. She had a near constant tremor involving both upper and lower extremities that disappeared during distraction and during sleep. When asked to walk, she staggered from side to side in various directions and although appearing to lose balance she did not fall. An extensive work-up was negative. Following treatment with SSRI and inpatient psychotherapy, there was substantial improvement in her gait and disappearance of the tremor. At last follow-up six month later, the patient was neurologically intact, and remained seizure free since her operation.

**Conclusion:** This case demonstrates that conversion reaction beside nonepileptic psychogenic seizure can occur following temporal lobectomy. Treatment with antidepressant, psychotherapy and behavioral encouragement can be very successful.

## WOMEN AND EPILEPSY

p083

### Profile of epileptic women in neurology outpatients of Marrakech University Hospital

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**Purpose:** About 50% of epileptic patients are female. Epilepsy for a woman is not the same as for a man. Differences concern aspects of contraception, fertility, pregnancy and social stigma in our regions. Our objective was to describe clinical aspects of epilepsy in Women of Marrakech region.

**Method:** A retrospective study during 1 year in epilepsy outpatient of Marrakech university hospital.

**Results:** Among 74 epileptic patients, 32 were female (43.2%) with a mean age of 32.5 years (range from 6 to 70 years) and rural origin in 52%. Fourteen patients were under 25 year's age. Analphabetism was noted in 58% with no or partial occupation in 33%. Mean delay of consultation was 9.13 years. We noted in medical history: Parental consanguinity and family epileptic cases (6 cases), perinatal hypoxia (4 cases), Hypertension (4 cases). Frontal lobe epilepsy was predominant (37%) followed by temporal epilepsy (25%). Cerebral MRI done in 21 cases showed abnormalities in 9 patients: cerebral diffuse atrophy (1 case), meningioma (2 cases), traumatic sequels (1 case), ischemic infarcts (2 cases), lissencephaly (1 case) and mesial temporal sclerosis (2 cases). AEDs side effects most reported were: hair fall (3 patients), weight gain (10 cases).

Despite advices given about pregnancy, two patients had eclampsia, one patient became pregnant under valproate and one continued to use carbamazepine with oral contraceptives.

**Conclusion:** This study has shown that women with epilepsy need far more information and counseling. Stigma of epileptic women in rural regions causes delay of consulting, analphabetism and lack of treatment.

p084

### Women with epilepsy in Tunisia

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**Purpose:** In Tunisia, epilepsy remains a disease poorly supported and poorly lived among women. At each stage of her life, women with epilepsy face obstacles. The aim of the present study was to determine the impact of epilepsy on the women life including education, employment, family and other personal relationship, and health production.

**Method:** It is about a survey on the ground, conducted by three neurologists using a predetermined questionnaire. In a first step, it is conducted with 30 epileptic women, this survey will be continued.

**Results:** At each stage of life, women with epilepsy face obstacles: her education is precarious, because neither parents nor principals do scrupules to stop schooling 86.7% of women affirmed that epilepsy is a handicap for scolarity. Very few women have information about their disease and its consequences on the hormone, their marriage or during pregnancy. Almost (84.6%) estimated that epilepsy have side effects on pregnancy. Employment is also a real problem for women with epilepsy especially in the group of workers and job in the private sector, infact (93.4%) women have no job or precarious job

**Conclusion:** In our regions, despite the great efforts made in the field of health, epilepsy has a bad impact on women life.

p085

### Sleep difficulties and daytime distress in Georgian women with epilepsy

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**Purpose:** 0.86% of the Georgian general population has epilepsy, and 55.5% of the patients are women. Taking into account the epilepsy-sleep relationship and that women are twice as likely as men to have sleep difficulties, the aim of the present study was to investigate sleep difficulties and their association with daytime distress in the Georgian women having epilepsy.

**Method:** 56 female epilepsy outpatients (living in Tbilisi; mean age: 33.33) treated with antiepileptic drugs (AEDs) were asked to complete the special questionnaire comprised questions about amount of sleep, sleep difficulties and daytime symptoms. ICD-10 definition of primary insomnia was based on a complaint of disturbed sleep at least three times per week during the last month, and having at least one daytime symptom to a moderate degree. The outpatients who had answered 'Yes' on a categorical question on insomnia occurrence were categorized as subjects having 'Other Insomnia'

**Results:** Some degree of disturbed sleep was reported by 21.1% of the subjects, and the ICD-10 definition of primary insomnia was fulfilled by 15.6%. The estimated sleep need as well as difficulties with concentration, low energy and depressed mood was observed. 10.2% of total subjects had excessive daytime sleepiness evaluated by the Epworth Sleepiness Scale.

**Conclusion:** Findings of our study confirm the relationship between sleep deterioration and epilepsy shown in the literature. However, more attention should be devoted to epilepsy treatment strategy developing in women as epilepsy may affect sleep that often leads to insomnia development, low level of daytime activity and/or daytime sleepiness.

**p086**

### Surveillance of Croatian pregnant women with epilepsy and effects of antiepileptic drugs exposure in their offspring

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**Purpose:** to follow up pregnancies exposed to antiepileptic drugs (AED) and their offspring in order to assess teratogenic and neurodevelopmental effect of particular AED of newer generation.

**Method:** The prospective surveillance (May 2003- May 2009) obtained the data about pregnancy planning, folic acid (FA) intake, seizure frequency and AED therapy in 68 pregnancies from 52 Croatian women with epilepsy. The results were compared with 147 healthy controls (mother/newborn pairs).

**Results:** About 35% of women with epilepsy planned their pregnancies and 20% took FA, while 90 % of controls planned their pregnancies and only 2.7% took FA properly. About 91% of pregnancies were exposed to monotherapy: 33 to LTG - 9 LB, 2 premature deliveries, 3 spontaneous abortions (SA), 1 artificial abortion, 1 intrauterine death and 7 ongoing pregnancies (OP). Eleven LB and 2 SA were exposed to CBZ; 1 LB to PHT; 1 SA and 2 LB to PB. One LB and 1 preterm LB with ASD, psychomotor delay/epilepsy was exposed to GBP; 5 LB and 1 OP were under VP. Six pregnancies were under polytherapy: TPM/VP (1 LB, 1 SA, 1 OP); CBZ/PB (still-birth) TPM/CBZ/PHT (LB with IUGR and dysmorphism); VP/CZP (1 OP). Four pregnancies without AEDs resulted in LB.

**Conclusion:** We have surveyed pregnancies exposed to LTG, VP, PHT, PB, GBP, TMP, CBZ and CZP. AED polytherapy resulted in larger proportion of complications. Preconceptional counseling in women with epilepsy resulted in higher proportion of FA intake. Follow up of LB till school age will be provided.

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